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Study of Airport Service Quality and Profitability in Indonesia

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Abstract

This study was about the Airport Service Quality (ASQ) measurement and its relation to profitability in the airport industry. The main purpose of this study was to develop an understanding of the ASQ measurement in Airports by investigating the relationships of service quality in terms of creating purchase intentions. In specific to ASQ, the surveys have been systematically carried out by many airport operators all over the world. ASQ has 8 components: access; check-in; passport/personal ID control; security; finding your way; airport facilities; airport environment; and arrival services. This is different from PZB's (1985) Service Quality dimensions. This suggests that an effective process of measuring and analyzing passenger perceptions of ASQ is not easily achieved. These concerns are certainly relevant to avoid misinterpreting passenger perceptions. The measurement model should be considered for a multidimensional approach in the context of airport performance measurement regarding service quality. The study, however, included the perceptions of both international passengers and domestic concerning the current service levels, more specific was using the measurement model of Cronin and Taylor (1992). Cronin and Taylor (1992) say that perception alone is enough and even better than other models i.e, PZB (1988) model. This study analyzes whether passengers may stay longer in the airport, recommend the airport to other people or pay higher tax if they are satisfied with the service offers by airport. This also included an assessment the ability ASQ to explain the variation in repeat purchase intention including interaction among variables. The results of this study show ASQ has a moderately low effect of purchasing intentions.

Keywords: Airport, Service Quality, Purchase Intention

1. Introduction

1.1 Background

Service Quality has been found to be crucial for retaining profits in service-providing institutions. Tangible and intangible aspects of service performance affect the service quality, which in turn determines purchase intention in many industries including airports.

In the transportation industry, airports are established to service and facilitate aircraft, cargo and passengers. In addition to that, airports are required to fulfill three main tasks. They are flight safety; flight security; and airport comfort-ability. In any situation, the three main tasks should become the top priority, notwithstanding the

economically unprofitable condition of an airport, in which it is unable to cover its operating cost. This has become the commitment of the airport which shall always be upheld. However, some airports are business organization; their shareholders demand that they make profits. This means that it is an onerous situation for company that manages an airport since an airport has to provide some services not only on flight safety and flight security but also on a consumers' interest basis.

In Indonesia, airports are central to 'create and promote Indonesia by – being a significant Indonesia transportation hub for the benefit of Indonesia and environs; striving to maximize return on shareholder's funds and company assets; and striving for excellence in the services which it provides.' This should be conducted in conjunction with airlines, concessionaires and other firms doing business on airport property. Besides that, airports are a point in a route system for loading and transfer of passengers and freight. In addressing these objectives, the measurement of the first objective seems relatively straightforward. However, adequate measurements of the other two - have proved difficult and will be the primary focus of this research. The difficulty arise as airports and policy makers must deal with the questions of how, where, and on what the specific services are to be provided.

Passengers have continuously increased their expectations. As passengers do not easily articulate service quality, the measurement of airports' service quality has to be based on perceived quality rather than objective quality because (Parasuraman, et al., 1983) - services are somewhat different from goods, though most of the principles needed to develop a quality principles for goods can also be applied by acquiring an understanding of how services differ from tangible products. As industrial activity has shifted more to services, there has been a corresponding increase in the need to monitor service quality (ACI, 2020).

The ever increasing importance of service organization to the airport companies actually has been recognized by marketing academics by exponential development in services and marketing research. Within the airport businesses, a prominent research stream has involved the measurement of service quality. They realize that the inability of airports and their customers to grasp a clear metric or establish a clear standard for performance has only fueled consumer discontent. They concluded that it is necessary for airports to continuously construct their service quality.

Airport Council International (ACI) has provided Generic Scales of perceived service quality in order to continuously improving the passenger experience in airport since 2006. However, Bazerra and Gomes (2016) suggest that ASQ needs more consideration for validity and reliability to avoid misapprehension of passenger' perceptions. This need has become even more crucial with the spread of notion that service quality will lead to airports profitability.

1.2 Problem Statement

Past research on service quality in airports have been conducted by several institution or individuals. At least, three surveys for performing this type of analysis are reported: the Airport Service Quality (ASQ) index developed by Airports Council International (ACI), airport index developed by SKYTRAX, and index developed by J.D. Power. They either conducted research on service quality issues specific to their airport or others; and various transportation and travel industry groups may issue consumer-pollled rankings of airport facilities. In addition to that, qualitative and qualitative efforts to examine airport quality has also been conducted by several organizations such as Airport Council International among others that uses the research to monitor airport service quality annually. Others researchers and airports have also explored service quality issues in airport (Doganis, 1991; Brink and Maddison, 1975; Feldman and Shields, 1998; Lemer, 1992; Rowland, 1994; Seneviratne and Martel, 1994; Tretheway, 1998). However, Dawnaet al.l (2001) and Bazerra and Gomes (2016) say that these works are morconcernewithn to airport operators and little reference of characteristics and factors that comprise quality in airport facilities and operations. Despite these efforts considered incom,plete they have provided a base on which to construct a comprehensive study of airport quality.

Another problem is on the service quality measurement and its contribution to the company performance. Unlike manufactured goods quality, airport service quality is an elusive and distinctive construct. It can be defined from several perspectives, including: the ability to satisfy the needs and expectations of the customer; and the totality of features and characteristics of a product or service that bear on its ability to satisfy given needs. This means that the researchers have to concern more on airports' user perspective on the airport service quality provided and its linkage to profitability.

It is still difficult, however, to isolate the contribution has made to profitability. The existing literature is stuffed with unsubstantiated principle. Yet too little evidence exists to substantiate whether these principles result in outcomes. Given difficulties in isolating the contribution made service quality to profitability and its numerous surrogate measures, this is not surprising as pointed out by Zeithaml (2000) an author who has been investigating service quality, profitability, and the economic worth of customers for years concluded that much research remains to be done to validate this early evidence of service quality measurement and integrated body of knowledge about how to perform the measurement. Nevertheless, the studies by Cronin and Taylor (1992), et al. n et al (1993), Rust and Zahroik (1993), and Anet al. n et al (1994) provide a promising foundation for the development such research.

In fact, in the last decade, the emergence of diverse instrument measurement has made possible a remarkable development in the study of quality perception related to profitability. The existence of these measurements had been translated into the development of an important investigation agenda oriented along the line: the application of measurement to service quality and the study of how quality influences and affects profitability.

Yet confusion still exists as to which measure offers the greatest understandings. With the purpose of contributing a solid body of evidence on the validity and reliability of quality perception measurement instruments, it is unnecessary to conduct a study that compared of the most frequently used instruments. However, as there is an extensive research of Airport Service Quality in airports all over the world, the main purpose of this study is to extend the researches of Cronin and Taylor (1992), with specific emphasis on the contribution made by airport service quality to profitability in the airport businesses and the concern of this research, specifically is their terminal services.

In Indonesia, this need has become even more important especially with the spread of globalization. As Indonesia is surrounded by countries that have very high standards of international airports such as Singapore with its Changi Airport and Malaysia with its KLIA Airport. In addition to increased international competition, the increasing awareness of the airport service quality has also imposed pressures to airport operators in Indonesia to improve towards certain quality standards.

1.3 Objection of the Study

The overall objective of this study is to explore the relationship between airport service quality and profitability. The specific objectives were: 1) to assess the validity of Airport Service Quality that is developed by ACI; and service performance measures in the Indonesia airports; 2) To determine the strengths and directions of the correlation between the service quality measure (ASQ) and repeat purchase intentions. 3) To investigate any Service Quality-Purchase Intentions concerns raised by passengers so that remedies may be incorporated into airport policy.

1.4 Literature Review

Airports provide their service with outcomes that are inherently different from those of any service providers and manufacturers and other product-based enterprises. A customer oriented approach towards understanding quality has permeated the airport service operations literature. The literature on the multi-dimensionality of service quality, and customer evaluations thereof, is now well established (see, for example, Gronroos, 1984; Johnston, 1995; Lewis and Booms, 1983; Parasuraman et al., 1985; Wyckoff, 1984). On the other hand, comparison of the

manufacturing and service quality literatures on customer orientation reveals that, while they share customer-based perspective on quality management, there are a number of differences. There are four differences between service and product based enterprises. They are intangibility, inseparability of production and consumption, heterogeneity, and perishability.

Intangibility

Services are invisible. The consumers have difficulty in judging the value of the service before it is actually consumed.

Heterogeneity

Services are delivered according to different basis under which they are being provided. This variance is more pronounced for services than for tangible products. Services are very much influenced by the constitution and qualities of the providers.

Inseparability

The difference between other products and a service is that the quality of a service cannot be determined before consumption. This is because service production and consumption occur almost simultaneously.

Perishability

Different from most products, organizations cannot stockpile services and sell them at a later date. In most cases, as soon as a service is provided, it must be consumed.

Quality of service for tangible products such as cars, refrigerators, and baked beans cannot be easily transferred to intangible services. But, academics and business practitioners are compelled to consider service quality to satisfy customers.

It should be noted that producers usually offer the market with different types of products, and the pure product is very rare (Stamatis, 1994). The following products normally differ in market place.

- Pure products. Products that are tangibles such as soap, salt, etc.
- Tangible products. Accompanied by service. The more sophisticated product the more service required.
- Mixed product. Goods and services equally contribute such as restaurant—food and service.
- Services accompanied by product airplane give free drinks and foods.
- Pure services. The product is entirely services, such as massages, consultant, etc.

1.5 The Multi Dimensions of Service Quality

The discussion of the nature of perceived product quality can become very obscure as it involves measuring consumers' expectations of what a firm should provide in the industry and what consumers' perceptions are in respect of this service provision. The perception of quality, however, has changed from time to time as the quality concept has been sometimes conflicting.

Parasuraman, Zeithaml, and Berry (1985) began a research process to investigate service quality based on consumers' expectations and perceptions. The idea was unidimensional scales but was seen as unsatisfactory for measuring service quality given its multidimensional nature and consequently multidimensional scales were developed. Based on their research, they proposed for the very first time that service quality expectation components and classification have five variables: tangibles; reliability; responsiveness; assurance and empathy. It was ten dimensions then they reduced to five. It came through numerous qualitative studies. They evolved a set of five dimensions that have been consistently ranked by customers to be most important for service quality, regardless of service industry. These dimensions are presented as in the table 1.

Table 1: Service Quality Dimensions

Tangibles	Physical appearance, employee appearance, equipment availability and communication structure
Reliability	The ability of a firm and its employees to deliver the service accurately and in a trustworthy manner
Responsiveness	The ability of a firm and its employees' ability to deliver an efficient and fast service
Assurance	The ability to inspire confidence, a guarantee of consistent quality in their service.
Empathy	The capability of the service provider to understand consumers' needs

These dimensions have been subjected to empirical testing by number of authors (see, Parasuraman, et al et al. 1993; Carman, 1990; Babakus and Boller, 1992; Cronin and Taylor, 1992, 1994; and Sureshchandar, Rajendran, and Kamalanabhan, 2001). Although they found to lack specificity in certain industries, Parasuraman et al. (1991) assert that the underlying dimensions what is so-called SERVQUAL scale; provide framework that can be enhanced through the use of additional items that are specific to certain context.

Within the airport industry, and in specific to ASQ, the surveys have been systematically carried out by many airport operators all over the world (ACI, 2020). Different from PZB (1985), Airport service quality components and classification have 8 components: access; check-in; passport/personal ID control; security; finding your way; airport facilities; airport environment; and arrival services.

However, Bazerra and Gomes (2016) suggest that due to the complexity of the airport service environment, an effective process of measuring and analyzing passenger perceptions of ASQ is not easily achieved. Generic scales for perceived service quality might not cover some particularities, and there has been only limited consideration for validity and reliability. These concerns are certainly relevant to avoid misinterpreting passenger perceptions. The proposed measurement model could be considered an alternative for a multidimensional approach in the context of airport performance measurement regarding service quality. Based on this assertion service quality in airport would be investigated.

1.6 Service Quality and Company Performance

Although the literature is replete with research on service quality, Zeithaml (2000) an author that has been investigating service quality and profitability many years suggests that in the past, expenditures on quality have not been explicitly linked to profits because costs and savings were the only variables on which information was available. More recently, evidence about the profit consequences of service quality stemming from other sources has been found.

In addition, Zeithaml (2000) mentioned that research on the direct relationship between service quality and profits had shown both positive effects in a limited number of studies and no effects in other studies. By no means has this stream of research been exhausted. To a large extent, these findings may be due to the difficulties involved in isolating the 'real' contribution that quality makes to the profitability. A myriad of other factors also influence profitability and as a result, the link between superior service quality and higher profitability is considered as a given.

It is believed that another construct mediates the service quality-profit association: purchase intentions. Service quality by nature is subjective concept (Oliver, 1993). As consumers do not easily articulate service quality, the recipient of the service can only really assess it, thereby making its measurement more subjective than exact. The measurement of service quality has to be based on perceived quality rather than objective quality because services are intangible, heterogeneous and their consumption and production occurs simultaneously.

Published research also offers evidence that service-quality perceptions positively affect intentions to behave in positive ways-praising the firm, preferring the company over others, increasing the volume of purchases, or agreeably paying a price premium. Most of the early research operationalized behavioral intentions in a unidimensional way rather than delineated specific types of behavioral intentions. The recent articles by Brady, Cronin and Brand (2002), Cronin and Taylor (1992), Broet al. al (1993), Rust and Zahorik (1993) have initiated a move towards investigating this link and provide promising results.

1.7 Service Quality Measurement

In addition to the five dimensions nature of service quality, Parasuraet al.t al (1985)suggests that a consumer perceives in a service as a function of the magnitude and direction of the gap between expected Service and Perceived service. This means that the service quality is influenced by consumers' perception and consumers' expectations. Parasuraman eet al.(1985), therefore, suggest that evaluating service quality by measuring expectations and performance, is the way to reduce or even eliminate faults in service. Later this is so called disconfirmation of expectations paradigm (performance-minus-expectation or P-E). The P-E gap was originally used by researchers (Oliver, 1980). The use of that paradigm, however, has been subjected to a number of theoretical and operational criticisms by number of authors (Brady, Cronin and Brand, 2002; Buttle, 1996; Carman, 1990; Babakus and Boller, 1992; Cronin and Taylor, 1992, 1994; Brownet al.l, 1993; Spreng and Olshavsky, 1993; Teas, 1993).

These authors suggest that evaluating service quality by measuring expectation and performance separately is superfluous and that single measures of performance should be employed. These performance-based-measures include Brady, Cronin and Brand (2002) SERVPERF instrument (which is the performance section of the SERVQUAL instrument), Teas' (1993) re-specification of the expectations measure, and the 'direct judgment' or 'non-difference score' measure (Browet al.al, 1993). The 'direct judgment' or 'non-difference score' measurincorporateste both expectations and perceived performanconin one scale. These measures have been tested and claimed as superior for a number of reasons. This study, thereforeemploysoy SERVPERF instruments only to measure service quality.

1.8 Conceptual Framework

Figure 1 below, depicted the relationship the impact of service quality to purchase intention.

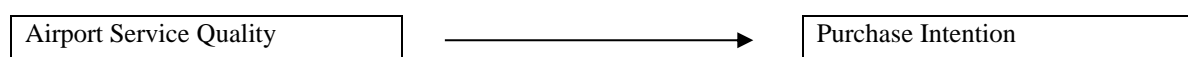


Figure 1: The impact of ASQ on Purchase Intention

Hypotheses of this studwereas ASQ han as influential impact on Purchase Intention

2. Method

To provide the researcher with adequate data, field visits and personal interviews with passengers in the four major Indonesia International Airports were conducted in order to obtain information regarding their perceptions and feelings of the airports' performance.

2.1 Instrument Development

When designing the pilot questionnaire, the 22 items in the SERVQUAL questionnaire developed by Parasuraman et al. (1985) were ignored to. Instead of that the service items were derived from ASQ without modifications and adaptations. The results of that were the items as shown in the Figure 1 and that became the first section of the questionnaires.

-
-
- V1. Ground transportation to/from airport
 - V2. Parking facilities
 - V3. VfM of parking facilities
 - V4. Availability of baggage carts/trolleys
 - V5. Waiting time in check-in queue/line
 - V6. Efficiency of check-in staff
 - V7. Courtesy and helpfulness of check-in staff
 - V8. Waiting time at passport/personal ID inspection
 - V9. Courtesy and helpfulness of inspection staff
 - V10. Courtesy and helpfulness of security staff
 - V11. Thoroughness of security inspection
 - V12. Waiting time at security inspection
 - V13. Feeling of being safe and secure
 - V14. Ease of finding your way through airport
 - V15. Flight information screens
 - V16. Walking distance inside the terminal
 - V17. Ease of making connections with other flights
 - V18. Courtesy and helpfulness of airport staff
 - V19. Restaurant/Eating facilities
 - V20. VfM of restaurant/eating facilities
 - V21. Availability of bank/ATM facilities/money changers
 - V22. Shopping facilities
 - V23. VfM of shopping facilities
 - V24. Internet access/Wi-Fi
 - V25. Business/Executive lounges
 - V26. Availability of washrooms/toilets
 - V27. Cleanliness of washrooms/toilets
 - V28. Comfort of waiting/gate areas
 - V29. Cleanliness of airport terminal
 - V30. Ambience of the airport
 - V31. Passport/ID inspection
 - V32. Speed of baggage delivery
 - V33. Customs inspection
-
-

Figure 1: The Attributes of Airport Terminal Service Quality

The next section is containing the three measures of repeat purchase: Come earlier to the airport; The willingness to recommend the airport to others and Paying airport tax higher were placed after respondents completed the Expectations and Perceptions section in the beginning of the questionnaire (see appendix A). This was different from original ASQ in order to be more relevant the study objectives. This, however, may cause unavoidable any potential antecedent behavior-attitude or attitude-behavior effects.

Juster's (1966) 'purchase probability scale' was used to measure repeat purchase intentions, the intention of coming earlier to the airport; the willingness to recommend the airport to others and paying airport tax higher. This means that the questionnaires used closed ended questions with ordered choices. Apart from that this 11-point Juster's scale has been tested to predict demand for durables, services, FCMG, and also applied to voting behavior, see Dawes (2002), Genet et al, (1991), et al. et al (1991), Seymet al. t al (1994) and Brennan and Esslemont (1994) and Brennan (1995). Its probability statements of intent to purchase reflect a behavioral predisposition to buy and

it had been suggested that the scale is a more reliable instrument than the Likert type, non-probability measurement of purchase intentions used by Cronin and Taylor (1992). When designing measurement, the cultural aspects were taken into account (Scott and Shieff, 1993) Therefore two languages in the questionnaires were applied those; English and Bahasa Indonesia to anticipate differing languages as many foreign travelers using airports. The two languages used in the study had been proof by back-to-back translations.

2.2 Pre-Test

The questionnaires then subjected to limited pre-tests with a convenience sample of passengers to avoid un-relevant issues, such as ambiguous questions. In fact, the five dimensions did not exist as proposed by PZB based the Eigen-value calculation. In fact, no change was necessary to the original format of the questionnaires since the pretest indicated no relevant results.

2.3 Sample

After pre-testing, this research was setting the sample size. Despite the sample size might be determined either by using statistical or through some rules of thumb (Aaker et al., 1995), the sample each group has minimum sample size of 100.

As this study was about to explore service quality perception in airport, and also the study focused on establishing service quality measurement in the airport and the effect of service quality on the purchase intention. Therefore, the study was conducted in the natural environments without any manipulation and control. In fact, there are about 26 commercial airports in Indonesia. Initially, all of commercial airports were going to be contacted but this consumed too much effort, time and especially budget. Consequently, there were only four airports were picked up to take part, namely, These four airports were Bali Aiirport; Surabaya Airport; Makassar Airport and Lombok Airport.

Simple stratified equal random sampling was employed despite the numbers of population varies for each airport. **The number of sample was 500.** By this, the respondents were picked in about every 30 minutes based on passengers who entered the boarding lounge; the probability of passengers that were stratified on one airport in the sample was expected equal. Then, sub group sample size determined in equal of target population. The survey were conducted for two months in July-August 2020

	Bali Airport	Surabaya Airport	Makassar Airport	Lombok Airport
Sample	125	125	125	125

3. Results

One of the primary objectives of this study was to assess the reliability and validity of ASQ. This was actually the first objective in this study. Prior to reliability and validity analysis, dimensionalities of service quality measures were tested to be used to simplify the interpretation of factors.

3.1 Dimensionality of Service Quality Measures

Although not a major objective of this study, the underlying factor structure of 33 items was investigated. It was seen important to subsequent analysis that the factor structure should be consistent over the 33 items. This was just ascertaining the structure would be consistent with the previous finding in the pilot survey. If a five factor structure consistent with Parasuraman et al's findings did not exist for the service environment, then the instrument would be treated as uni-dimensional in the same manner as Cronin and Taylor (1992). Variables that did not load positively higher than 0.40 on this one variable would be removed from the examination.

factor analysis results were dissimilar to PZB's five factor conceptualization of service quality (table 2). This means that the results were similar to pilot study. Following Cronin and Taylor's (1992) study, the two scales were treated as uni-dimensional.

In addition, a factor rotation procedure was undertaken on both scales showed all variables loading predictably on a single factor with no negative loadings. Consequently, all items were also retained for subsequent analysis.

Table 2: Factor Analysis of 33 Individual dimensions of Service Quality

v1	0.49
v2	0,55
v3	0.83
v4	0.84
v5	0.82
v6	0.74
v7	0.84
v8	0.78
v9	0.69
v10	0.73
v11	0.83
v12	0.81
v13	0,59
v14	0.87
v15	0.91
v16	0.89
v17	0.82
v18	0.70
v19	0.72
v20	0.70
v21	0.72
v22	0.89
v23	0.83
v24	0.90
v25	0.90
v26	0.83
v27	0.92
v28	0.73
v29	0.79
v30	0.76
v31	0.84
v32	0.82
v33	0.86
Eigen value	20,98
% of Variance	52,867%

3. 2 Reliability Analysis

A composite score of the questionnaire was obtained by summing the scores of individual statements. Reliability tests were run to determine how strongly the attributes were related to each other and to the composite score.

It should be noted, however, there is no clear cut value of alpha which will distinguish between reliable and unreliable measures, but the internal consistency reliability test was deemed to be acceptable for basic research when the reliability coefficient exceeded of 0.70 level (Nunnally, 1978). The closer the Cronbach's alpha is to 1, the higher the internal consistency reliability. Therefore, all items in the questionnaire were tested to see the Cronbach's alpha whether below or higher than 0.70. Despite, many other measures of consistency reliability

used (i.e. split-half reliability coefficient), Sekaran (2000) said that Cronbach's alpha is an adequate test of internal consistency reliability.

It was found that all items were found positive. The alpha is 0.98. This shows that the attributes are very strong related each other and highly internal consistency reliability. This finding is consistence with the finding in the pilot survey. Therefore, it was unnecessary to reconstruct of the questionnaire design.

3.3 Validity Analysis

Many have said that if the result of measurement test is considered reliable, validity test can be ignored as the result of the measurement considered valid. However, in this respect, the next study should asses the construct validity to determine the ability of the Service Quality to predict purchase intention.

Validity is defined as the degree to which a variable or construct achieves theoretical and empirical meaning within the overall structure of a theory (Cresswell, 1994). The importance of construct validity cannot be emphasized enough. Churchill (1979) states that the construct validity should lie at the heart of the scientific process (and) is most directly related to the question of what the instrument is in fact measuring. An assessment of the construct validity of the ASQ measures was undertaken in this study.

Churchill (1979) says that there are three tests of construct validity: convergent validity; discriminant validity; and measurement behavior.

The convergent validity is the extent to which the measure correlates with similar measures of the same construct. The correlation matrix (table 3) indicates a high degree of convergent validity for ASQ measures with high correlation between these measures.

Table 3:Correlation Coefficients

	ASQ	Come Earlier 1 hour before flight	Come Earlier 2 hour before flight	Come Earlier three hour before flight	Re-commend airport to others	Paying airport tax higher
ASQ	1					
Come Earlier one hour before flight	0.065 (0.465)	1				
Come Earlier two hour before flight	-0.007 (0.938)	0.104 (0.240)	1			
Come Earlier three hour before flight	0.206 (0.022)	0.200 (0.027)	0.203 (0.024)	1		
Recommend airport to others	0.171 (0.052)	0.136 (0.124)	0.219 (0.013)	0.425 (0.000)	1	
Paying airport tax higher	0.032 (0.724)	-0.018 (0.841)	-0.047 (0.605)	-0.008 (0.929)	0.180 (0.045)	1

Discriminant validity is the degree to which the measure has low correlation with measures of other constructs. The ASQ scales exhibit discriminant validity as exhibited by the low correlation with the repeat purchase measures.

The final test of construct validity relates to ‘measure behavior’. In this respect, the ability of the scale to predict a criterion measure (criterion validity) was also assessed.

In this study, the ability of ASQ scales to predict the measures of visit patron; recommend airport to others; and paying airport tax higher were used to determine the criterion validity. This apparently will also reveal the second objective of this study. The correlation matrix (table 3) indicates the ASQ measure has a correlation with purchase intention.

In the stepwise regression results (table 4) provide supports that ASQ shows construct validity. ASQ measures explain variation in the dependent variable: giving recommendation to others and paying higher airport tax. It is shown by the adjusted R2, they are 77% and 72%, consecutively. Therefore, the evidence shows the measures demonstrate construct validity.

Table 4: The variation explained by the alternative measures of Service Quality

	Come Earlier one hour before flight	Come earlier 2 hours before flight	Come earlier 3 hours before flight	Recommend airport to others	Paying airport tax higher
V1					
V2					0.33***
V3					
V4			0.48***	0.34**	
V5					
V6					
V7					
V8					
V9	0.25 *				
V10					
V11					
V12					
V13			0.20 *	0.25 *	
V14					
V15					
V16			-0.62***		-0.31*
V17					
V18					
V19	0.30 *				
V20			0.31*		
V21					
V22					
V23					0.41 **
V24		0.26*			
V25					
V26					0.42***
V27					
V28	0.32***	0.43***			
V29	0.33***				
V30					

V31							
V32			0.29 *				
V33					0.41***		
Adj R Sq	0.82	0.74	0.74	0.77	0.72		
Where	*	: p	<0.05	**	:p	<0.01	*** :p <0.001
F significant at	0.001						

3.4 Analysis of Service Quality and Purchase Intention Correlation

The fundamental objective of this study was to relate service quality to repeat purchase intention. This is apparently the objective number three. Since there were number of constraints in relating between them it was considered necessary to breakdown analysis based upon its component. This means that analyzing the relationship between service quality; and the three measures of visit patronage; recommend the airport to others; and possibility paying higher airport tax (measured by Juster's Scale) were conducted.

3.5 Preliminary Data Analysis

As precursor to more in-depth data analysis, the means and standards deviation of the 33 items were examined.

The various scores were resulted as reflections of the quality of service perceived by passengers were assessed. However, the legitimacy of using means on ordinal data may not be precise since the intervals between points on the Likert's scale have no meaning. Furthermore, the calculation of means from derived scores need further analysis.

All of the 33 items, the highest mean was for v3 (VfM of parking facilities) with 5.08 indicating a high performance level. The lowest mean was 3.83 for v17 (Ease of making connections with other flights).

An inspection of the standard deviation for the items revealing greatest variation (2.51) was for v21 (Availability of bank/ATM facilities/money changers). The lowest standard deviation was for v15 (Flight information screens) with 2.07.

Table 5: Variable Means dan StandardDeviations

	AVERAGE	STDEV
v1	4.95	2.23
v2	4.68	2.36
v3	5.08	2.17
v4	4.71	2.22
v5	4.60	2.29
v6	4.55	2.29
v7	4.50	2.38
v8	4.56	2.31
v9	4.50	2.41
v10	4.69	2.35
v11	4.73	2.30
v12	4.77	2.35
v13	4.13	2.36
v14	4.18	2.39
v15	5.06	2.07
v16	4.39	2.37
v17	4.10	2.41
v18	3.83	2.36
v19	4.86	2.25

v20	4.36	2.39
v21	3.95	2.51
v22	4.53	2.26
v23	4.31	2.33
v24	4.74	2.25
v25	4.36	2.34
v26	4.89	2.23
v27	4.89	2.25
v28	4.39	2.35
v29	4.48	2.30
v30	4.63	2.39
v31	4.62	2.45
v32	4.51	2.38
v33	4.59	2.28
Total average	4.55	2.32

The means and the standard deviations of the measures of repeat purchase intention were then also calculated (table 6). The repurchase probability means, as expected, decreased as the time period increased. It was shown as passengers came to airport one hour before flight had the highest mean (5.89). Most respondents come to the airport three hours before flight had the highest standard deviation (3.02). While the possibility of giving recommendation to others about the airport had a mean 4.67 with relatively small standard deviation of 2.64. The possibility of paying higher airport tax had a mean 3.97 with standard deviation of 2.71.

These standard deviations were divided by number of points on the scale yield a unit free of measure of variation. The repeat purchase intention measures with unit free variation of 0.22, 0.27 and 0.27 for one, two and three hours respectively. Coming to airport one hour before the flight exhibited lower variation than others. This suggests that the measure present a better predictive ability than others but need a little more demanding of test than giving recommendation to others and the possibility of paying higher airport tax measures with unit free variation of 0.24.

Table 6: Dependent variable Means and Standard Deviations

	AVERAGE	STDEV	
Come Earlier one hour before flight	5.89	2.40	(0.22)
Come Earlier two hours before flight	5.25	2.92	(0.27)
Come Earlier three hours before flight	4.43	3.02	(0.27)
Recommend airport to others	4.67	2.64	(0.24)
Paying airport tax higher	3.97	2.71	(0.25)

3.6 The Relationship of Measurement and Purchase Intention Components

The correlation matrix (table 4) indicates a positive relationship between the ASQ with all measures (repeat purchase intention measures component). The measures are highly correlated for ASQ. It is indicated by Adj R2 in table 4. The correlation between ASQ and the repeat purchase measures ranges from 0.72 (Paying airport tax higher) to 0.82 (Come Earlier one hour before flight).

The reason for ASQ having strong predictive ability is uncertain. However, it is suspected that coming 3 hours prediction of visit airport may be as accurate as that 1 and 2 hours. Nonetheless, the 2 and 3 hours visiting airport before boarding measures present a more demanding test of each instrument ability to predict changes purchase intentions due to the slightly greater standard deviation (table 6).

3.7 Dominant Items for Regression Equation

Stepwise regression was undertaken to assess the ability of the ASQ scales to explain the variation in repeat purchase intentions. The results of this analysis are shown in table 4.

An initial inspection of the items retained by the stepwise program reveals that no item appears in all equations (table 4).

The adjusted R² value indicates that 47% to 82% of variation in repeat purchase intentions can be explained by service quality factors. The adjusted R² figures show firm results for the ability of ASQ measures to predict repeat purchase.

A breakdown of the significance of the items retained in the regression equations reveals that eight items were significant at 0.001. Additionally, ASQ retains twenty items to explain an average of 76% of the variation in repeat purchase (an average of 4% per retained variable).

However, adjusted R² value, it can be drawn a tentative conclusion that, the results tentatively demonstrate ASQ to be reliable measure of repeat purchase intentions

3.7 Multi-Collinearity

A major problem that exist when using regression is multi-collinearity. This is when the predictor variables (in this case, the 33 items) correlate with one another. Green, Tull and Albaum (1988) suggest that principal component analysis as a method of reducing the amount of multi-collinearity in the original data set. In this case, principal component were drawn from data set relevant to each instrument. Four principal components were extracted from the ASQ data with each set of components having eigen-value of 31% (i.e. the percentage of variance explained by the retained principal components). These principal components were then regressed against the same measure as in table 4.

Table 7: Variation Explained by the Principal Components of the Alternative Measures of Service Quality
Come Earlier one hour before flight Come Earlier two hour before flight Come Earlier three hour before flight Recommend airport to others Paying airport tax higher

PC1	1.015*	1.111*	1.105*	0.922*	0.750*
PC2	0.055	-0.036	0.071	0.154	*0.322
PC3	0.236*	0.150	-0.047	0.025	-0.048
PC4	-0.116	-0.143	-0.208	-0.120	-0.194
Adj R Sq	0.807	0.727	0.687	0.753	0.685
Eigenvalue					
Variance	30.89%				

*: sign at 5%

F ratio for all regression sign at 0.001

The results (table 7) show that the same trends exist after adjustment for multicollinearity.

In addition, Thirteen of the ASQ principal components are significant at 0.0001. However, the 20 ASQ principal components explain an average of 3.45% of the variation in repeat purchase. This explains the results in table 4 and indicate that multicollinearity is considered prominent in the ASQ variables.

3. 8 Correlation between Airport Service Quality and Profitability

The final analysis of this study was to relate the ASQ to profitability. From the Table 8, it was found that despite there being a positive correlation between ASQ and Purchase Intention, the relationship is moderately low. The correlation is only 0.11. This means that the model that was proposed in this study was proven although it is not very strong. The findings suggest that ASQ explains only 11 percent of the variance in passengers' rating of purchase intention. The analysis indicates that the large un-explained variance of almost 90 percent means that the factors influencing service quality-profitability are not yet completely answered. This is not very surprising because some other factors may be considered more important for service quality-profitability proposition, such as: value; attribution and equity; information availability and atmosphere; and some others

Table 8: Correlation Analysis

Airport Service Quality	Purchase Intention
	0.109
	(0.25)

**Correlation is significant at the 0.01 level

It can be said that, firstly, the respondents who took part in this study may think that ASQ is not an important issue. In the airport operation and management, flight frequencies and flight connection or punctuality of flights may be more important.

Secondly, most of respondents may be domiciled in other cities of airport being studied. People generally are very hard to develop purchase intention as they feel unattached to the airport. As suggested by Berman and Evans (2001) that loyalty may exist when they stay around the store.

Another possibility is, the respondents come to airports because they have bought the airline tickets. This situation, respondents do not really give attention to the airport, instead more to the airlines. This situation describes that airport service has only low involvement products. They are treated or bought with very little information. This may cause the perception of airport service quality to be ignored by respondents.

4. Discussion

The overall objective of the study was to identify and ascertain the relationship between airport service quality, its measurement as well as its direction to profitability. This study has actually looked at a number of issues in airport service quality and purchase intention.

The results suggest that the eight dimensions of ASQ proposed by ACI and five key dimensions of service quality proposed by PZB (1985) cannot be used to determine airport service quality in this study. This result is not consistent with the ASQ and research of PZB (1985). Additionally, this suggests that airport service quality dimensions in one airport may be different in other airports. Despite of the dimensions of service quality as proposed ACI do not exist in this study, this can be used as a guideline to develop service quality items that are considered most important to airport users and to understand of the levels of their expectations.

The results of the study also clearly indicates that ASQ is capable for service quality measurement in airports.

The last but not the least, there was somewhat moderately correlation between Service Quality and Purchase Intention. The results of the study may reveal that purchase intentions were very much influenced by other factors

such as aircraft schedules. This was taken due to the facts of this study that there was low correlation between Service Quality and Purchase Intentions.

This study has addressed the issues that are important in the management of services in the airport industry, especially in Indonesia. The research was based on the perceptions of passengers of some airports in Indonesia. The failure of service quality to significantly affect purchase intentions in this study should be concerns for further study. Perhaps passengers do not always want the best quality service of an airport. This result suggests that additional efforts appear not very well justified. Much is still to be discovered relative to the process of forming of passengers' perception. The findings may raise further question, however, this has addressed the most important concerns of service quality and purchase intention in the airport industry.

Apart from that, this study has obvious limitations. It focuses on the evaluation of service quality and assumes that both the service providers and passengers agreed on service attributes being studied. Moreover, the constructs and the measures proposed here require further testing before making any conclusive statements about the construct.

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