Passengers' Perspective toward Airport Service Quality (ASQ) (Case Study at Soekarno-Hatta International Airport)

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ABSTRACT

Passenger satisfaction towards airport service quality is influenced by the level of service at the previous service quality. It causes the new facility is expected to exceed the previous service quality. Service quality improvement of people mover system in Grand Design of Soekarno Hatta International Airport (SHIA) expected to support increasing airport service quality management. People mover existing conditions that occur on a free shuttle bus has caused some customer complaint. The purpose of this thesis is providing strategic support as complaint handling on people mover system to enhancing SHIA service quality. The discussion involves a passenger's perspectives, passengers' satisfaction, and airport service quality to get a purpose of research. This thesis utilizes Fodness and Murray theory regarding the accurate scale to measure SHIA service quality by using Servqual method and Kano Model approach. Airport Service Quality (ASQ) aims to give an airport more competitive in the relationship between business and operations. In this thesis offers support strategy in service quality attributes and considerations to assist airport management in improving airport service quality. This thesis finds the value gap between airport management and passengers' perspectives that serve as accurate scale in each service attributes on people mover facility at SHIA that must be met to achieve satisfaction based on passengers' perspectives. Also, this thesis finds several services attributes that must be met on people mover facility at SHIA as a basic service needs by passengers need. Airport management at SHIA should focus on the improved operating system of people mover system related to attributes punctuality, free of charge, information about the schedule, headway, and safety. This thesis presents the relationship between the value gap with service attributes that must be met by passengers' perspectives, passengers' satisfaction, and airport service quality. This thesis shows how an airport service quality is decided based on gap scale between airport management with passenger perspectives and priority services as passengers guarantee.

Keywords: Passengers satisfaction, airport services quality, people mover, Soekarno-Hatta International Airport.

1. INTRODUCTION

Soekarno-Hatta International Airport (SHIA) is one of the major international airports that serve the greater Jakarta area as one of the gates into Indonesia. Airport development including airside and landside facilities encapsulated in a Grand Design of Soekarno-Hatta International Airport and prepared accordingly by Ministry of Transportation Decree Number 60 (1994) about master plan of Soekarno-Hatta International Airport. Regarding airport services quality, Ministry of Transportation Decree Number 129 (2015) states that service in airport provides the best service which mandatory to passenger in service standards set by Minister of Transportation. Based on some of these regulations can be concluded that SHIA has a responsibility to improve the airport services quality through Grand Design of SHIA. Service planning is to improve passenger service with transport system within the airport terminal that known as People Mover System (Kurniawan, 2016). It is a mass transit provides transportation for passengers to make shift from one place to another in the airport area. Besides that, there is a mass transportation like a monorail that using fixed routes scheduled and operates automatically, so that is also known as Automated People Mover System (APMS).

Airport planning operations require time efficiency and the ability to make an appropriate decision. Therefore, it takes an integrated airport management between landside and airside. This research is a

conceptual development to improve airport service quality that oriented by passenger perception (Fodness & Murray, 2007). While, gap between airport services are perceived by the airport management and passenger expectations (Tsai, et. al., 2011). Therefore, this research aim is to analyze the impact of passenger's perspective on people mover system service for the development of airport service quality at SHIA. The research has an expectation to reduce the gap in services quality on people mover system.

Traffic transport vehicle can be smoothly or congested (Kerner, 1999b). It also happens to vehicular traffic at SHIA area. Congested problems at SHIA area have an impact on the operation of free shuttle bus and get many customer complaints. Based on the annual report of PT. Angkasa Pura II (2014) as the operator of SHIA states that there are few consumer complaints relating to airport service. Complaints about queues, public services, operational procedures, vehicle parking, available modes of transportation at the airport, free shuttle bus, porter, and trolley.

Consumer complaints about the available modes of transportation and free airport shuttle bus become a topic of the problem in this research. Nowadays, one of the modes of transportation as a people mover within the airport terminal at SHIA is the only free shuttle bus. However, this type of people mover is still many shortcomings, such as fleet slightly, uncertainty schedule, the number of fleets have not been adjusted to the total number of passengers, and use of the free shuttle bus takes a time when there is congestion within airport terminals during peak hours every day (Kompasiana, 2013). Passenger dissatisfaction is affected by the failure of the service operation such as transport delays (Anderson et. al., 2007). The impact of congestion that occurs at SHIA area become a new problem for the airport management to be able to break the congested by creating simulations and build a reliable infrastructure. It aims not to disrupt airport operations at the time of fixing the problem.

The objective of this research is two-fold. First, this research aims to identify service quality attributes based on passenger's perspective that affects airport service quality. Second, this research aims to explain the relationship between passenger satisfaction, passenger perspectives, and airport service quality.

2. LITERATURE REVIEW

2.1. Passenger Need and Satisfaction

The concept of passenger satisfaction is still abstract. To achieve passenger satisfaction requires a simple or complex process. The professional researchers identified that the importance of the actual passenger needs (passenger centric). Cream (2009) states that the importance of value to meet the passengers needs even exceed the passenger's needs in aviation business to support the airport service quality. Also, ACRP Report 10 (2008) states that landside facilities at Terminal respond to any changes of passengers needs in the aviation business. The addition of new functions, services, and the process should be realized by the passenger's needs. PT. Angkasa Pura II as SHIA operator, trying to draw revenue from passengers or visitors through new construction such as APMS and improve service quality of free shuttle bus to support ASQ at SHIA.

2.2. Service Quality

Servqual is a method which was first found by Parasuraman, Zeithaml, and Berry in 1985. During development has occurred renewal methods from 1985 to 1994. This method is used to allow the airport operator to identify passenger's perceptions and expectations quickly against the services have been contributed. Servqual also has benefits to analyze the gap. The service quality provided to users is so hard to measure it, but Zeithaml, Parasuraman, and Berry (2003) formulated the dimensions of service quality to be used as a measuring tool to assess a service, namely: Reliability, Responsiveness, Assurance, Empathy, and Tangibles.

Zeithaml, Berry, Parasuraman (1983) contribute to a conceptual paper entitled "A Conceptual Model of Service Quality and implications for future Research" published in the Journal of Marketing. In that article, Parasuraman, et.al. put forward a "five service quality gaps" that have a potential to be a source of problems in service quality. At gap fifth (Service Quality): The gap between the perceived service with service that expected. This gap occurs when airport passenger assesses the performance of the airport operator.

Some of the literature on passenger satisfaction, service quality, perceived performance, and perceived service are defined as a belief about the services that be experienced (Tjiptono & Chandra, 2005). According to Schiffman & Kanuk (1991), perception is a process where the user can select, organize and describe something that is accepted as a complete perspective. By the same indication, someone's perception of something that may be different to the perceptions of others, because of the needs, values, and expectations are not same to each user. About the service quality on people mover system at SHIA, passengers will shape perceptions of services quality that received by people mover system based on expectations and performance evaluation at various

levels. Furthermore, combining these evaluations to determine the perception of overall service quality.

Based Olson and Dover (2005) states that user expectations are user confidence before making the selection process which is used as a standard in assessing the performance quality of service facilities. In the context of service quality and customer satisfaction, it was agreed that customer expectations play an important role as a standard of comparison in evaluating the quality. User expectations shaped by the desires and needs to be achieved and different from one user to another user. Therefore, the necessary reliability of the airport operator to adjust the wants and needs of airport passengers. On the other hand, there are factors that can affect the user's expectations that marketing communications, the image of carriers, and price. Image of operator influence in shaping the expectations of airport passengers. A positive response in the media will add credibility to the operator so that passengers are sure to use services. Positive responses were formed by the carriers will certainly raise expectations of passengers and airport users with the services to be obtained.
Kano et. al. (1984) stated that every customer's need will have different every customer's perception see Figure 1). The customer's needs are divided into three requirements categories, first requirements "must-be" which is something that the basis. If this requirement is not fulfilled, the customer was not satisfied. The second requirement "One-Dimensional" is to help increase the level of satisfaction. The third requirement "Attractive" is something that can be said to "be nice to have." If the third requirement is not fulfilled, then no problem, but the level of satisfaction will be maximized if these requirements are fulfilled.

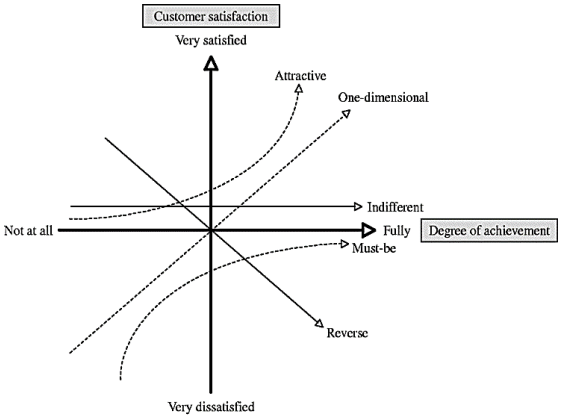

Figure 1. Kano model diagram (Kano, et al., 1984).

2.3. Airport Service Quality

Airport management and government take measurements of the airport performance. It is to determine the efficiency level of financial and operational (Doganis, 1992). This business is conducted by the airport operator as the airport management to identify investment, operational activities at the airport, environment, etc. and then given to the government as a performance report. Airport efficiency gained the attention of researchers and experts (Oum, et.al, 2003). Oum benchmarking study on the effectiveness of the airport which is located in the Asia Pacific, Europe, and North America. Airport service quality and research are distinguished by gaps and the attributes of service quality at the airport (Fodness & Murray, 2007). In this research, a researcher tried to find out what gaps on people mover system and the attribute of service quality at SHIA that can serve as an increase Aiport Service Quality.

3. METHODOLOGY

3.1. Case Study as Object Research

A case study in research is a way to understand the problems that discussed by expanding knowledge through previous discussions. The case study is a summary of the discussion document that was carried out intensively against the organization or certain symptoms to report and provide a critical assessment of the case (Zucker, 2001). I took a case study Grand Design of SHIA to expand the discussion about the development of airport service quality on people mover system at SHIA and suit the needs to reach passenger satisfaction.

3.2. Research Procedure

The research stages to get objectives begins with the identification of problems that consisting of practical overview and theoretical overview. It explains the development research problem, aim, and method. To get the data, the researcher conducted a preliminary study first and followed by passenger perspective survey based on Servqual Method and Kano Model. Based on the data obtained, the researcher conducted analysis and interpolation which will be used as conclusions and recommendations.

3.3. Data Analysis

Pre-study questions in this study are prepared to get the attribute of service quality on the people mover at SHIA. Four questions used to identify problems on the passenger (Shiba et. Al., 1993) are:

1) What kind of mode of transportation did you use to transfer between the terminals or another facility in the airport area? (Shuttle Bus, Car, Taxi, and Walking)
2) Which criteria do you take into consideration when preferring to use it?

3) What kind of problems are found when you use shuttle bus?
4) According to Grand Design Soekarno-Hatta International Airport that there is a new facility of People Mover System, which is currently under construction and will be operational in early 2017?; What do you think?; Are you interested in using it?; What kind of services criteria do you expect on People Mover System?

Passenger perspective survey questions are based on a combination between the pre-study, servqual method, and Kano Model. The first sheet is a preliminary study to provide an overview of the survey concept, the research purpose, and research object that created. The second sheet provides a questionnaire respondent data to classify according to its group such as gender, age, occupation, etc. The third sheet contains the questionnaire based on questions of Kano Model and Servqual (Perceived and Expected). Kano questions serve functional and dysfunctional. As the following example, if the preliminary study results indicate service quality attributes "headway" then questions prepared are as follows:

1) How do you feel if you get a good management headway?
2) How do you feel if you do **NOT** get a good management headway?

While for perceived and expected questions based on Servqual method presented is:

1) Perceived: Strongly dissatisfied, dissatisfied, less satisfied, satisfied, and very satisfied
2) Expected: Strongly disagree, disagree, less agree, agree, and very agree

In this study use T-test analysis. T-test as an analysis method used to determine the interpretation of the hypothesis to decision making between the two data sets that are different (Siegel & Sidney, 1997). In this study, the analysis method using independent t-test because it used to test the two different sets of data to compare the average value that is not related to one another. It is also used to determine whether the relationship between the two groups had no significant difference or not. The requirements for this test is to use normal distribution data. Determination of decision-making hypotheses in two ways. First, based on comparison tcal with ttable. Second, based on comparison probability value or significance value (Siegel & Sidney, 1997).

3.4. Trustworthiness

Trustworthiness in this research serves to improve the credibility and objectivity. Objectivity in this research is a condition people mover system at SHIA currently. I find data evidence through sources of the books, encyclopedia, journal, newspaper, the internet, company, government, etc. It obtained from Directorate General of Civil Aviation, ICAO and FAA document, Service Quality, International Business Research, Airport Service Quality document, and PT. Angkasa Pura II company as operator of SHIA. The validity of this research to determine the level of measurement where research has been conducted by the object research. It determines by asking questions at the interview and passengers perspective survey to find answers to the passenger and users by the object research. Literature that used in this project as follows :

EBSCOhost. [Passengers' Expectations of Airport Service Quality] Dale Fodness & Brian Murray, 2007. Fodness and Murray (2007) stated that the exclusion gap academic theory, the airport management perspective requires an accurate scale that can be used to measure the quality of airport services, including estimating the expectations and perceptions of users against Airport Service Quality, identify what services you need// special management attention and priority to the customer satisfaction guarantee, provide a strategy to improve Airport Service Quality

a) IBR - International Business Research. [Transfer Passenger's Perceptions of Airport Service Quality] Jin-Woo Park & Se-Yeon Jung, 2011 Passenger type at the airport is arrival passenger, departure, and transfers. The purpose of this research focuses on the perception analysis of transfer passengers at the airport to airport service quality overall. It was observed at the value, satisfaction, airport image, and characteristics of passenger behavior. Research studies the conceptual model considerations that affect the airport services quality. The study states that the transfer of passenger satisfaction, perceived value, and the image of the airport affect airport service quality. It was determined that if transfer passengers to get high value-added services from the airport service, they were satisfied and would recommend to other passengers. It is shown by the data analysis of passenger behavior has a positive effect on the transfer of airport service quality.

4. EMPIRICAL STUDIES

4.1. Grand Design of Soekarno-Hatta International Airport (SHIA)

Grand Design of SHIA is an airport development plan for improving the service to air transport passengers in Indonesia. The airport development plan is covering various aspects such as terminal revitalization, expansion of the terminal, increasing accessibility, the addition of a commercial area to support the aerotropolis, and others (Grand Design of SHIA documents, 2014).

4.2. PT. Angkasa Pura II as Airport Management (SHIA Operator)

PT. Angkasa Pura II is a State-Owned Company that assigned to manage the airport and air traffic service in western part of Indonesia. PT. Angkasa Pura I assigned to manage in eastern part of Indonesia (Ministry of Transportation, 1987). In 1984, PT. Angkasa Pura II formed and named the "Airport Company's" to manage Soekarno-Hatta International Airport and Halim Perdanakusuma Airport. Currently, PT. Angkasa Pura II manages 12 airports in the western part of Indonesia. The headquarters located in the SHIA area.

4.3. Transportation between Terminals (People Mover) at SHIA

4.3.1 Free Shuttle Bus

Nowadays, mode of transportation between terminals at airport area that provided by SHIA operator is a free shuttle bus. The bus condition is good enough, but there are still many customer complaints such as arrival schedule, headway, and information (Annual Report of PT. II, 2014). Currently, a free shuttle bus connects between Terminals 1 (1A, 1B, and 1C), Terminal 2 (2D, 2E, and 2F), and Terminals 3. Free shuttle bus headway ranges between >20 minutes per trip and does not have a fixed schedule due to a vehicle are quite dense in the airport area. If there is congestion in the airport area at peak hour, headway can be more than 20 minutes or even up to 1 hour (Netmedia, 2016). It makes free shuttle bus performance not maximized. The bus facility not only used for airport passengers who want to transit or switch terminal, but airport employees also use it. Free shuttle bus is a flexible transport mode to be used for schedules, routes, or total vehicles operation to suit the needs (Bastari, 2012).

4.3.2 Automated People Mover System (APMS)

An automated people mover is a transport operation system that automatically and has its path. This system is applied at airports around the world to facilitate passengers and employees to reach facilities in the airport area (Transportation Research Board, 2012). APM System is usually found in arrival and departure area that allows passengers to move more quickly with distance, connecting terminal, etc. Nowadays, APM System was developed for passengers and airport employees to connect with other facilities in the airport area and integrated with other transportation modes (ACRP 37A, 2012). One way of measuring and evaluating facility APM system is overcoming high service reliability, availability, continuity or integration, and maintenance (ACRP 37A, 2012).

5. FINDING AND DISCUSSION

5.1. Preliminary Study

Preliminary study result indicates that 16 attributes affect service quality on a people mover at SHIA. The results were collected by interviews in person and phone to 30 passengers (Griffin & Hauser, 1993) based on the questions (Shiba et. al., 1993) provided in the previous chapter. The preliminary study result can be seen in Table 1.

5.2. Measuring Perceived and Expected on People Mover at SHIA

Inspired by the first statement Fodness & Murray (2007) states that the first thing to get an airport service quality is knowing the accurate scale of gap value that occurs between the airport management with passengers. The gap can be determined by measuring passengers perceptions and expectations. In this study, get the value of passengers perceptions and expectations through a questionnaire survey. It generates as much data as 403 responses back from 500 respondent. Respondents who use people mover as transit or move to another terminal at SHIA was about 62.53% of 403 people. It means as much as 252 respondents. Responses back data will be recapitulated and analyzed by SPSS v21.0 software. Validity test is used to identify the attributes as a measuring tool so has a level of depth accuracy, while reliability test is used to determine the index indicating the attributes as a reliable measuring instrument.

By SPSS v21.0, the data tested by analyzing bivariate correlation to get a validity test result. If N-value=30 respondents and the level of significants = 5% so r_{table} value is 0.361. In Table 3, r_{xy} value is $_{count}$ that show a correlation between each variable (attributes). Basic of decision making if $r_{count} > r_{table}$ is valid and $r_{count} < r_{table}$ is not valid. It suggests that the results of the relationship between all variables (attributes) are valid because $r_{count} > r_{table}$.Reliability value less than alpha 0.60 was considered to be weak and unacceptable while reliability value more than alpha 0.60 is considered high and acceptable (Cronbach, 1951; Gliem & Gliem, 2003). Basic of decision making if alpha > r_{table} is consistent and alpha < r_{table} is inconsistent. The reliability value of data survey is consistent and high because it reached a reliability value is alpha 0.956 (alpha > r_{table}). Validity and Reliability tested by SPSS v21.0 is shown in Table 2.

Table 1. Preliminary study result

Attributes Code	Criteria of Services on Shuttle Bus	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30
A1	Free of Charge	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X
A2	Luggage Area	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X
A3	Information of Schedule	X	X			X	X		X	X			X		X		X	X		X	X	X	X		X			X	X	X	
A4	Information on the bus	X	X		X			X		X	X	X		X	X	X	X		X				X	X		X		X			X
A5	Headway	X		X	X		X	X	X		X			X	X	X	X		X			X	X	X	X		X		X	X	
A6	Punctuality	X	X		X		X		X	X	X		X	X				X		X	X				X		X		X		X
A7	Shuttle bus capacity	X		X		X			X		X				X			X			X		X		X	X		X			X
A8	Integrated with other models	X	X		X	X	X	X		X		X	X	X		X	X		X	X		X		X					X		X
A9	Connecting to another facilities			X				X				X					X						X			X	X			X	
A10	Bus elevation parallel to the floor						X		X		X		X	X		X		X	X		X			X		X			X		
A11	Safety								X			X					X						X	X	X					X	
A12	Driver Assistant												X													X		X			X
A13	Less of buses													X			X					X			X				X		
A14	Comfortable seats															X			X	X			X							X	
A15	Priority seat																			X			X								
A16	Easy to find																										X				

Gap value is the average value of perceived service score minus the average value of the expected service score. It means that the Servqual result between airport management with passengers. Parasuraman, et.al explains that if the gap value shows that more than 0, so the perceived level is excellent. If the gap value shows that is 0, so the perceived level is good. And if the gap value shows that less than 0, so the perceived level is bad. The perceived level of passenger satisfaction is shown in Table 3 (Parasuraman et al., 1985; 1988).

5.3. Determining Service Attributes Priority by Kano Model

Basic of decision making for independent sample t-test with df-value ∞ (uncountable) :

a) If $_{value} \geq 3.291$ so $p_{value} < 0.001$ with confidence level is 99.9% (t_{table})
b) If $t_{value} \geq 2.576$ so $p_{value} < 0.01$ with confidence level is 99% (t_{table})
c) If $t_{value} \geq 1.96$ so $p_{value} < 0.05$ with confidence level is 95% (t_{table})
d) If $t_{value} \leq 1.95$ so $p_{value} > 0.05$ or i.s with confidence level is <95% (t_{table})

Note : i.s = interval significants, where :

a) Null hypothesis (H_0) is not significant which means there are differences between group of first highest value and group of second highest value alternative
b) Hypothesis (H_1) is significant which explains that there are significant influence between group of second highest value to group of first highest value
c) If significant value: $p<0.05$ so H_1 is accepted
d) If significant value: $p>0.05$ so H_0 accepted
e) If interval is significant, it is between group of first highest value to group of second highest value.

Table 2. Validity and Reliability tested by SPSS v21.0

Attributes code	Attributes	r_{xy}	r_{tabel} N=30; Level of significants = 5%	Status
A2	Luggage area	0.843	0.361	Valid
A7	Fleet capacity	0.851	0.361	Valid
A10	Low-floor design on the fleet	0.791	0.361	Valid
A14	Comfortable seat	0.761	0.361	Valid
A15	Priority seat	0.809	0.361	Valid
A12	Driver asisstant	0.585	0.361	Valid
A13	Number of fleet	0.751	0.361	Valid
A9	Connected to other facilities	0.882	0.361	Valid
A16	Easy to find	0.728	0.361	Valid
A4	Information on fleet	0.843	0.361	Valid
A1	Free of charge	0.683	0.361	Valid
A3	Information of schedule	0.907	0.361	Valid
A5	Headway	0.827	0.361	Valid
A8	Integrated with other modes	0.763	0.361	Valid
A6	Punctuality	0.831	0.361	Valid
A11	Safety	0.587	0.361	Valid

Reliability Statistics : Cronbach's Alpha = .956
N of items = 16

Table 3. Measurement Result of Perceived and Expected as Gap Score

No	Attributes code	Attributes	Performance average perceived	Importance average expected	Gap	Quality dimension gap average
A		Tangible				II
1	A2	Luggage area	3.27	4.48	-1.21	
2	A7	Fleet capacity	3.27	4.48	-1.21	
3	A10	Low floor design on the fleet	2.82	4.52	-1.7	-1.3
4	A14	Comfortable seat	3.43	4.51	-1.08	
5	A15	Priority seat	3.14	4.45	-1.31	
B		Emphaty				IV
6	A12	Driver Assistant	3.22	4.28	-1.06	-1.06
C		Responsiveness				III
7	A13	Number of fleet	3.1	4.39	-1.29	-1.29
D		Reliability				I
8	A9	Connected to other facilities (Mosque, Imigration, Police Station, Parking Area, etc.)	2.8	4.43	-1.63	-1.48

Table 3. Measurement Result of Perceived and Expected as Gap Score (continued)

No	Attributes code	Attributes	Performance average perceived	Importance average expected	Gap	Quality dimension gap average
9	A16	Easy to find	3.22	4.46	-1.24	
10	A4	Information on the fleet	2.77	4.48	-1.71	
11	A1	Free of Charge	4.18	4.66	-0.48	
12	A3	Information of Schedule	2.88	4.52	-1.64	
13	A5	Headway	3.01	4.54	-1.53	
14	A8	Integrated with other models	2.99	4.49	-1.5	
15	A6	Punctuality	2.39	4.47	-2.08	
E		Assurance				V
16	A11	Safety	3.52	4.51	-0.99	-0.99

Free of charge attribute tvalue is 9.064, according to basic of decision making 9.064 ≥ 3.291; so the attribute has pvalue <0.001 with confidence level: 99.9%. It means that the attribute H_0 rejected and H_1 accepted. So it can be concluded that in free of charge attribute, there are significantly influence between group of first highest value (M) and group of second highest value (O) with confidence level 99.9% because pvalue <0.05 and give effect H0 rejected and H1 accepted. This process will be applied to 16 attributes of quality by using the same method. The p-value expressed as a probability value test requirements to decide a hypothesis conclusions can be accepted or rejected into significant level between two of Kano category. The categories in each attribute can be seen in Table 4 the column "Category of Quality".

Table 5. Services attributes priority as basic needs

Attributes code	Attributes quality	Category of quality	Gap	Services priority rank
A6	Punctuality	M	-2.08	1
A10	Low-floor design on the fleet	M	-1.7	2
A3	Information of schedule	M	-1.64	3
A5	Headway	M	-1.53	4
A2	Luggage area	M	-1.21	5
A14	Comfortable seat	M	-1.08	6
A11	Safety	M	-0.99	7
A1	Free of charge	M	-0.48	8

Table 5 shows that the relationship between Kano quality categories with servqual method result. It shows that basic need attributes based on services priority rank in Must-Be (M) category. Kano category that included into basic needs compared with gap value of Servqual method. By comparing 'M' category (basic needs) that has differences significant with a value gap, it can provide a service priority. For example, the highest gap value is punctuality attribute with value -2.08 and included into 'M' category in service category of quality. So, it can be concluded that the service priority that must be met as basic needs is punctuality attribute (A6) in reliability dimension.

5.4. Attributes that affect service quality makes a passenger satisfied

Figure 3 explains that passenger satisfaction is influenced by service quality, passenger values, and attributes. In using the People Mover service facilities at the airport, passengers will compare attempts have been made with passenger benefits so that it appears passengers value. Woodal (2003) states that the passenger value reflects the value of passenger itself which would explain what was accepted by the passengers and also what has been given by the passengers. However, in another study also found the more valuable a facility, also increase the passenger needs can be met by the facility. Based on the preceding discussion that attributes, service quality and passenger.

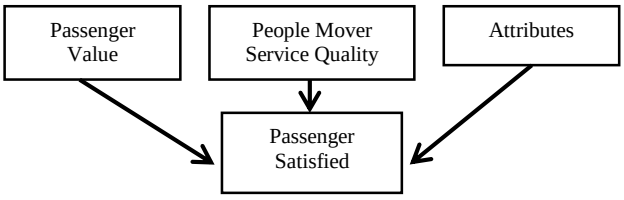

Figure 3. The requirement to makes passenger satisfied.

Table 4. Category of quality

Attributes code	Attributes quality	M	O	A	I	R	Q	Total (n)	P1	P2	S1	S2	Spool	T-value	P-value	Category of quality	Level of satisfaction	Level of dissatisfaction
A1	Free of Charge	200	83	47	71	0	2	403	0.496	0.206	0.500	0.404	0.455	9.063	p<.001	M	0.32	-0.71
A2	Luggage Area	166	73	61	98	3	2	403	0.412	0.243	0.492	0.429	0.462	5.188	p<.001	M	0.34	-0.6
A3	Information of Schedule	147	106	54	93	0	3	403	0.365	0.263	0.481	0.440	0.461	3.131	p<.01	M	0.4	-0.63
A4	Information on the fleet	126	106	71	96	0	4	403	0.313	0.263	0.464	0.440	0.452	1.558	i.s	M/O	0.44	-0.58
A5	Headway	178	108	44	67	2	4	403	0.442	0.268	0.497	0.443	0.471	5.240	p<.001	M	0.38	-0.72
A6	Punctuality	163	124	48	66	0	2	403	0.404	0.308	0.491	0.462	0.476	2.884	p<.01	M	0.43	-0.72
A7	Fleet Capacity	118	96	76	104	6	3	403	0.293	0.258	0.455	0.438	0.446	1.105	i.s	M/I	0.44	-0.54
A8	Integrated with other models	89	106	102	100	5	1	403	0.263	0.253	0.440	0.435	0.438	0.322	i.s	O/A	0.52	-0.49
A9	Connected with Other Facilities	88	119	119	73	3	1	403	0.295	0.295	0.456	0.456	0.456	0.000	i.s	O/A	0.6	-0.52
A10	Low-Floor Design on the fleet	138	107	62	95	0	1	403	0.342	0.266	0.475	0.442	0.458	2.382	p<.05	M	0.42	-0.61
A11	Safety	203	98	27	73	2	0	403	0.504	0.243	0.500	0.429	0.466	7.939	p<.001	M	0.31	-0.75
A12	Driver Assistant	35	48	106	183	27	4	403	0.454	0.263	0.498	0.440	0.470	5.771	p<.001	I	0.41	-0.22
A13	Number of Fleet	92	109	119	80	0	3	403	0.295	0.270	0.456	0.444	0.450	0.782	i.s	O/A	0.57	-0.5
A14	Comfortable Seat	166	87	66	82	1	1	403	0.412	0.216	0.492	0.411	0.454	6.135	p<.001	M	0.38	-0.63
A15	Priority Seat	120	96	88	94	2	2	402	0.298	0.238	0.457	0.426	0.442	1.913	i.s	M/O	0.46	-0.54
A16	Easy to Find	128	114	91	66	1	3	403	0.318	0.283	0.466	0.450	0.458	1.077	i.s	M/O	0.51	-0.61

5.5. Prioritizing among the quality attributes

Improving airport service quality for passenger satisfaction goal is expected to be both effective and efficient. However, improving service quality to effective and efficient so as to fit with passenger wishes is quite difficult to do in airport service quality. It requires identifying that influences the passengers in detail and thorough. Therefore, improving the services quality required a priority action. The role of service quality attributes priority to condition the act by what is passengers required, amounts and timing, and also at an affordable price. Determination of priorities that need to be considered to provide the best of services quality by passenger expectations are the primary objectives of this study. In fact, the implementation of condition on People Mover service quality at SHIA has not shown any improvement in the service quality to passengers oriented in periodically and priorities. If the service quality identified the needs of its passengers, the expectations and passenger satisfaction would be met. Periodically and priorities interpreted as improving the service quality performed continuously identifies priorities for major needs and passenger expectations. Therefore, the priority of passenger service quality is to support the airport service quality system (ASQ). The process of prioritization attributes on the People Mover which facilities will be enhanced using the Kano Model Theory.

6. CONCLUSIONS

As a conclusion and contribution in research, then we should be able to know the purpose and research questions that presented in this chapter. The purpose of this research was to analyze the impact of passenger's perspective on people mover service for the development of airport service quality at SHIA. Some conclusions referring to passenger satisfaction that can be drawn are as follows:

a) Based on the passenger's perspective, airport management at SHIA should focus on the operating system development of people mover (Free Shuttle Bus and APMS) at SHIA related to 16 attributes that affect service quality. 16 attributes are free of charge (A1), luggage area (A2), information of schedule (A3), information on the fleet (A4), headway (A5), punctuality (A6), fleet capacity (A7), integrated with another modes (A8), connecting to another facilities (A9), low floor design on the fleet (A10), safety (A11), driver assistant (A12), number of fleet (A13), comfortable seats (A14), priority seats (A15), and easy to find (A16). (See Table 2).
b) Based on the gap analysis, the highest gap value shown in punctuality attributes (A6) with gap value of -2.08 in reliability dimension with quality dimension gap average is -1.48. (See Table. 4). If grouped into Servqual dimensions, the results showed that in Servqual method, reliability dimension consists of A9, A16, A4, A1, A3, A5, A8, and A6 with quality dimension gap average -1.48, tangible dimension is A2, A7, A10, A14, A15 with quality dimension gap average -1.30, responsiveness dimension is A13 with quality dimension gap average -1.29, empathy dimension consists of A12 with quality dimension gap average -1.06, and assurance dimension including a1l with quality dimension gap average -0.99.
c) Gap value rank and Servqual Dimensions are used as a basic measure to determine the gaps that occur between passengers with SHIA Management so that the service quality can be improved thereby affecting the level of passenger satisfaction on a people mover at SHIA. Relationships Kano category with the gap used to obtain priority should be primary enhanced to become a service quality that must-be category. Meanwhile, passenger satisfaction and passenger dissatisfaction are used to evaluating the level of passenger satisfaction at SHIA.
d) The 16 attributes shown there are several levels of priority attributes that must be met as basic needs. It is used for improvement actions on Free Shuttle Bus management and development APMS as People Mover facility at SHIA. It aims to realize the passenger satisfaction and improve ASQ at SHIA. By Kano Model, the results indicate that the attributes are included into the basic needs category (M category) are punctuality (A6), low floor design on the fleet (A10), information of schedule (A3), headway (A5), luggage area (A2), comfortable seats (A14), safety (A11), and free of charge (A1). This determination is based on a comparison between the results of studies rank Kano Model belonging to the M category with the results of highest gap value. (See Table 6.). Some support strategies that must be fulfilled as basic need in People Mover System at Soekarno Hatta International Airport in Table 6.
e) Based on Kano Model, attributes free of charge (A1), luggage area (A2), headway (A5), safety (A11), and comfortable seats (A14) shows the results of M category significantly to O or I category with $p < 0.001$ and a confidence level of 99.9%, while the information of schedule (A3) and punctuality (A6) shows the results of M category significantly to O category with $p < 0.01$ and a confidence level of 99%. Low floor design on the fleet (A10) shows the results of M category

significantly to O category with p <0.05 and 95% confidence level. (See Table 5.).

f) Improving service quality on People Mover facility that supports Airport Service Quality at SHIA depend on passenger need and will affect passenger demand in the airport.

7. FUTURE RESEARCH

The suggestions for the future research are some issues related to data collection. It is not just to use websites and Internet media to gather research data as secondary data. However, it can be collected through the company directly suitable with object research. Primary data that collected through passengers' perspective survey not only by combining manual and online survey. However, the respondent data collection can be direct interviews manually for preliminary study with up to 30 people mover users at SHIA. It applies to the respondent data collection through passengers perspective survey that conducted manually towards airport user directly. It aims to make primary and secondary data more reliable and fashionable. The development of future research can continue with study on Terminal 4 facilities at SHIA. If the development until at Terminal 4, then the passenger need also increased for each terminal at SHIA area. In this research just focuses on the discussion of people mover that serves Terminal 1 area, Terminal 2 area, and Terminal 3 area. While, the development of passenger services until at Terminal 4 area, Cargo expansion, and some of the facilities that support an Aerotropolis in the airport.

Table 6. Support strategies that must be fulfilled in People Mover System at Soekarno Hatta International Airport

Attributes code	Attributes quality	Support strategies to airport management
A6	Punctuality	a) Implement a standard operating system b) Employee discipline c) Special lines for shuttle bus at the point of congestion d) Passangers complaints service (contact centre)
A10	Low-Floor Design on the fleet	a) Replace interior design (low-floor) in shuttle bus with the new design gradually b) Provide APMS fleet focussing on low-floor design to ease lift/put-down the luggage
A3	Information of Schedule	a) Provide information on schedule in a suitable place at halte connected to control room b) Information must be complete and clearly visible to passengers c) There is a help button to passengers
A5	Headway	a) Time discipline on shuttle bus and improve management headway b) Adjustment the number of fleets to reduce delays c) Adjustment of travel time and constraint with the arrival time
A2	Luggage Area	a) Provide a luggage area that qualified comfortably b) Easy to take and put into luggage area c) Sufficient luggage capacity
A14	Comfortable Seat	a) Provide comfortable seat which offers better seats and great leg room b) Choose a comfortable seat configuration
A11	Safety	a) Implement safety operation b) Employee discipline c) Adjustment speed of the fleet d) Provide safety information and procedure to passengers
A1	Free of Charge	a) It must be free to passengers overall

REFERENCES

Anderson, W. S., Baggett, L. S. & Widener, S. K., 2007. The impact of service operations failures on customer satisfaction: Evidence on how failures and their source affect what matters to customers. Manufacturer. Service Operation. Manage. Volume 11, pp. 52-69.

Bastari, A. I., 2012. *Perencanaan operasi people mover system sebagai moda transportasi antar terminal di Bandara Internasional Soekarno-Hatta [Design of People Mover System as Transportation Mode at Terminal of Soekarno-Hatta International Airport]*. Bandung: Bandung Institute of Technology.

Cream, F., 2009. *Economic Challenges Facing Airports in an Era of Global Financial Instability*, Airports Council International.

Doganis, R., 1992. *The Airport Business.* London: Routledge.

Fodness & Murray, 2007. Passengers' expectations of airport service quality. *Journal of Services Marketing*, 21(7), p. 492 – 506.

Griffin, A. & Hauser, J. R., 1993. The voice of the customer. *Marketing Science,* 12(1), pp. 1-27.

Kano, N., Seraku, N., Takahashi, F. & Tsuji, S., 1984. Attractive quality and must- be quality. *Hinshitsu,* 14(2), p. 147–56.

Kerner, B. S., 1999. Congested traffic flow: Observations and theory. *Transportation Research Record,* pp. 160-167.

Kompasiana, 2013. *Memaksimalkan shuttle bus Bandara Soekarno-Hatta [Maximizing Bus Shuttle at Soekarno-Hatta Airport]*. [Online] Available at: http://www.kompasiana.com/jalan-jalan/memaksimalkan-shuttle-bus-bandara-soekarno-hatta_52936616ea834df138b456a [Accessed 12 January 2016].

Kurniawan, R., 2016. *Passengers Perspective toward Airport Service Quality (asq); Case Study: People Mover System At Soekarno-hatta International Airport,* Yogyakarta: Master Thesis Report. Engineering Faculty. Universitas Gadjah Mada.

Ministry of Transportation, 1987. *Decree Number 25 of 1987 about Airport Management Area Division,* Jakarta: Ministry of Transportation, Republic of Indonesia.

Ministry of Transportation, 1994. *Decree Number 60 of 1994 about master plan of Soekarno-Hatta International Airport,* Jakarta: Ministry of Transportation, Republic of Indonesia.

Ministry of Transportation, 2015. *Decree Number 129 of 2015 about Guidelines For The Preparation of A Service Level Agreement For The Provision of Airport User Services,* Jakarta: Ministry of Transportation, Republic of Indonesia.

Netshia [Video File].. 2016. [Film] Directed by Netmedia. Video posted to www.youtube.com/watch?v=VU19VEZ2OAw.

Olson, J. C. & Dover, P. A., 2005. Disconfirmation of consumer expectations through product trial. Journal of Applied Psychology. 64(2), p. 179– 189.

Oum, T. H., Yu, C. & Fu, X., 2003. A Comparative Analysis of Productivity Performance of the Worldís Major Airports: Summary Report of the Air Transport Research Society Global Airport Benchmarking Research Report 2002. *Journal of Air Transport Management,* 9(5), pp. 285-297.

Schiffman, L. G. & Kanuk, L. L., 2004. *Consumer Behavior.* 8 ed. New Jersey:: Prentice Hall.

Shiba, S., Graham, A. & Walden, D., 1993. *A new American TQM: Four practical revolutions in management, Portland, Oregon, Center for Quality Management.* Productivity Press.

Siegel, S., 1997. *Statistik Nonparametrik Untuk Ilmu-ilmu Sosial [Non-Parametric Statistic for Social Studies]*. Jakarta: PT Gramedia Pustaka Utama.

Tjiptono, F. & Chandra, G., 2009. *Manajemen Kualitas Jasa [Management of Service Quality]*. Yogyakarta: ANDI.

Transportation Research Board, 2008. *ACRP Report 10 - Innovations for Airport Terminal Facilities explores worldwide developments in airport landside facilities design, and examines future trends and innovative passenger service/processing concepts,* Washington, D.C: FAA.

Transportation Research Board, 2010. *ACRP Report 37 - Guidebook for Planning and Implementing Automated People Mover Systems at Airports,* Washington, D.C: FAA.

Transportation Research Board, 2012. *ACRP Synthesis 48 - How Airports Measure Customer Service Performance,* Washington, D.C: FAA.

Tsai, et al., 2011. A gap analysis model for improving airport service quality. *Reference Services Review,* 22(10), pp. 1-7.

Woodal, T., 2003. *Conceptualising value for the customer: an attributional, dispositional and structural analysis. Academy of Marketing Science Review.* [Online] Available at: www.amsreview.org/articles/woodall12-2003.pdf

Zeithaml, Berry & Parasuraman, 1988. Communication and Control Processes in the Delivery of Service Quality. *Journal of Marketing,* pp. 35-48.

Zeithaml, V., Parasuraman & Bitner, M. J., 2003. *Services Marketing.* McGraw-Hill.