Service Quality Model towards Passenger Satisfaction at Sultan Hasanuddin Makassar International Airport

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The introduction of practical subjects of employment includes the development of vocational competencies, personality competencies, social competencies, soft skills, work skills, technical skills, vocational careers, payroll systems, work systems, work safety, labor regulations and legislation and so on. Based on this, a research study aims to determine 1) The effect of check in counter facilities on passenger satisfaction at Sultan Hasanuddin Makassar international airport. 2) The effect of AVSEC facilities on passenger satisfaction at Sultan Hasanuddin Makassar international airport. 3) The effect of flight safety facilities on passenger satisfaction at Sultan Hasanuddin Makassar international airport. 4) The effect of supporting facilities on passenger satisfaction at Sultan Hasanuddin Makassar international airport. 5) The effect of baggage facilities

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on passenger satisfaction at Sultan Hasanuddin Makassar international airport. 6) The effect of facilities (check in counter, AVSEC, flight safety, support, and baggage) on passenger satisfaction at Sultan Hasanuddin Makassar international airport. The research method used is a type of survey research with a strong approach. The test results show that F observed is greater than F table. Therefore, the research hypothesis is accepted. The quality-of-service model, after conducting multiple linear regression analysis, is further analyzed to determine the magnitude of the influence through partial determination coefficient analysis. The significance of the influence can be seen from the results of the F-test with a confidence level of 95% or a = 0.05%. Passenger satisfaction, if there are no independent variables ($X1$ to $X5 = 0$), then passenger satisfaction is only a certain value, while if each respondent's answer increases by 1 point for the independent variable answers ($X1$ to $X5$ = result increases), it is estimated that the tendency of passenger satisfaction will increase.

1. INTRODUCTION

Vocational Education is a process of introducing practical subjects of the world of work through industrial visits, providing vocational guidance and providing applied teaching and training to people who need work. We use the term vocationalization which includes the meaning of vocationalization. The introduction of practical subjects of employment includes the development of vocational competencies, personality competencies, social competencies, soft skills, work skills, technical skills, vocational careers, payroll systems, work systems, work safety, labor regulations and legislation and so on. In the field of technology and engineering, how the public is increasingly familiar with the competency standards of steel construction, wood construction, stone and concrete construction, building drawings, furniture, plumbing, sanitation, surveying, mapping, power generation, distribution and transmission of electric power, electrical installations, industrial automation, refrigeration engineering, metal fabrication, welding, machining, metal casting, motorcycle repair, light vehicle repair, heavy equipment repair, maintenance and repair audio-video, mechatronics, and so on and the same is the case in the field of transportation services.

The higher the level of mobility of human movement from one place to another and the flow of movement of goods, the greater the need for transportation facilities (National Geographic) [1]. The existence of very high mobilization at this time requires services that can meet the needs of the mobilization, one of which is that aviation activities always start and end at airports, where the aviation industry is increasing and globalization has encouraged the business world to become more competitive and sharpen competition, which ultimately brings consequences only companies that could compete can survive.

Many service companies offer their services to meet human needs and desires to carry out mobility or activities that require humans to travel. With the development of technology, what makes humans want something fast and easy and one of the service products offered to consumers to do mobility easily and quickly is air transportation. This type of transport has several advantages compared to other types of transport. With these advantages, many use air transportation as the main choice in carrying out mobility or other activities, because of the faster speed compared to other transportation, wider cruising range, and sophisticated and modern technology.

The increasing movement of passengers and goods is expected to create an economic boost (ATAG) [2]. The growth of air traffic directly affects the pace of economic growth in line with the increasing need for transportation facilities that can reach areas that are quite far and difficult to reach when using land transportation.

Based on Ministerial Regulation Number 39 of 2019, various airports are grouped into their functions, namely Domestic Airports for the service of special domestic flight routes (between cities or provinces) and International Airports used to serve flights from and to other countries (international) which in general this airport is equipped with immigration and customs in its services. Based on its hierarchy, airports consist of Collection Airports (Hubs), which are airports that have freedom of service coverage with other airports for passengers and goods with large

capacities, and can have an effect on increasing regional income from several provinces.

In addition, there is a Feeder Airport (Spoke), which is an airport with a limited range of services and influence on economic development, only used in supporting the performance of the airport collector and service of local activities. According to Law No. 1 of 2009 article 219 paragraph 1 concerning Aviation (President of the Republic of Indonesia, 2009) every business entity from an airport or Airport Operator Unit (UPBU) is required to provide facilities that meet the requirements of aviation safety and AVSEC as well as service services in accordance with service standards that have been determined by the airport, namely aircraft services, cargo/goods, passengers, and posts consisting of the provision and/or development of facilities for takeoff, landing, movement, parking, and storage services of aircraft; terminal facilities to serve passenger, cargo, and postal transportation; electrical, electronics, water, and sewage generation facilities. Land for buildings, industries, and fields as well as other buildings or buildings to help smooth the flow of aviation.

2. LITERATURE REVIEW

Based on the results of preliminary research / preliminary observations conducted by the author at Sultan Hasanuddin Makassar International Airport, it was found that: (1) service facilities include (a) general airport information, (b) airside facilities, (c) ground-side facilities, (d) navigation facilities, (e) AVSEC facilities, (f) aviation safety facilities, and (g) other supporting facilities. (2) based on the results of interviews with prospective passengers, the service facilities include; (a)ground facilities in the form of check-in counters, (b) public toilets, (c) waiting rooms and (d) AVSEC. (3) Meanwhile, the results of interviews with officers of Sultan Hasanuddin Makassar International airport found this: (a) general airport information ranging from airport name, airport class, IATA (UOG) code, (b) air side facilities, (c) ground-side facilities, (d) navigation facilities, (e) AVSEC facilities, (f) aviation safety facilities, (g) supporting facilities, (h) aircraft data info, and (i) baggage data info. The results mentioned above will certainly affect passenger satisfaction at the airport. So that researchers will conduct a more in-depth study of the services at the Sultan Hasanuddin Makassar International airport.

One of the aspects of concern is the unfulfilled satisfaction with passengers at Sultan Hasanuddin Makassar International Airport and the lack of availability of facilities and information so that many passengers feel disadvantaged, Lack of regulations in the context of legal protection for service users and other parties who experience losses as a result of air transportation activities for losses that occur.

However, the name of an activity does not escape the risk, as well as the presence of passengers at the arrival and departure terminals, the possibility of passengers' feelings of dissatisfaction with the manager of Sultan Hasanuddin Makassar airport services is always there, both at the time of departure and at the time of arrival.

Service quality is to provide perfection of services carried out by service providers in meeting the needs and desires of users as well as the accuracy of delivery to offset user expectations. Service quality is an important thing that must be considered and maximized in order to survive and remain as an option by users. According to (Lupiyoadi) [3] said that the quality of service is how far the difference between reality and customer expectations for the service they receive.

Based on the background that has been stated about the need for air transportation services by airport service users today related to the quality of service, there is still much that must be addressed by the manager in serving passengers which aims to satisfy air transportation passengers who use the services of the Sultan Hasanuddin Makassar International airport. These conditions will be carried out more in-depth research to find factors that are obstacles and solutions to solve them through this research.

According to Law Number 1 of 2009 concerning Aviation, an airport is an area on land and or waters with certain boundaries that is used as a place for aircraft to land and take off, get on and off passengers, loading and unloading goods, and places of intra- and intermodal movement of transportation, which are equipped with aviation safety and security facilities, as well as basic facilities and other supporting facilities.

Service is a matter of serving activities whose results are aimed at the wishes of others, both individuals and communities. The word "Servant"

when it gets some affixes in Indonesian will experience a shift in meaning. This is indeed certain. From the noun "servant" which means "one who serves" changed to the verb "serve" which relates to work and changed again to "service". The nature of service is intangible and this service is the opposite of the nature of finished goods. Real service can consist of tangible actions and the influence of social actions. Production and consumption activities in services are things that cannot be separated in real terms because they both occur in the same time and place [4-6].

3. METHODS

The type of research used in this study is expost facto research with a quantitative approach. The quantitative data approach is that all the information or data obtained is realized with numbers. research aimed at finding the causes that allow changes in behavior, symptoms or phenomena caused by an event, behavior or things that cause changes in free variables that have already occurred.

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The type of data used in this study is quantitative data, and this study was conducted to determine the effect of facilities (check in counter, AVSEC, flight safety, support, and baggage) on passenger satisfaction at Sultan Hasanuddin Makassar international airport. So in this study, a combined type of research between quantitative and correlational was used. This research was carried out in June 2022, at the Sultan Hasanuddin Makassar international airport.

This research is a quantitative descriptive study that examines the effect of facilities (check in counter, AVSEC, flight safety, support, and baggage) on passenger satisfaction at Sultan Hasanuddin Makassar international airport. In this study there are several free variables and bound variables. Bound variables (Y) are variables that are influenced by other variables, while free variables are variables that are not affected by other variables namely X1, X2, X3, X4 and X5. The research design in this study can be seen in the following scheme:

A population is a generalized area consisting of: objects or subjects that have certain qualities and characteristics that are determined by the researcher to be studied and then drawn conclusions. The population in this study was passengers at Sultan Hasanuddin Makassar international airport which amounted to 132,268 passengers.
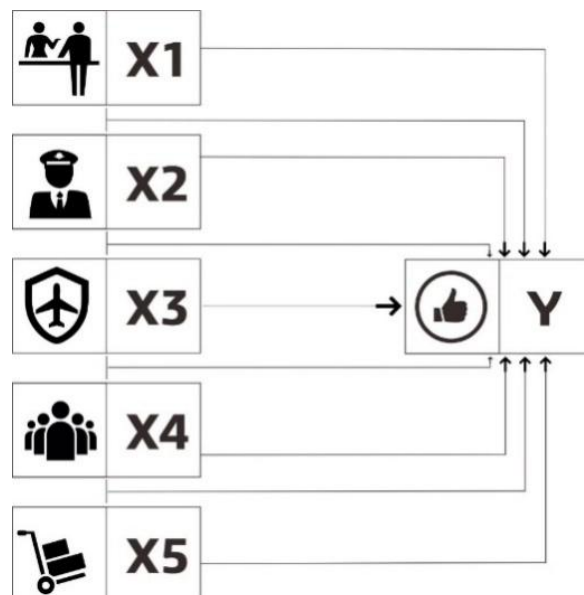

Fig. 1. Research design

Table 1. The population at Sultan Hasanuddin Makassar international airport

| Variable	Statement	Number of grains
Check in counter (X1)	1. Check in queue waiting time (<30 minutes)	2
	2. Speed check-in service (<2 minutes 30 seconds)	2
	3. The courtesy and dexterity of the check in officer	2
AVSEC (X2)	1. Security check queue waiting time (<7 minutes)	2
	2. Thoroughness of security checks	3
	3. Politeness and dexterity of security officers	2
Aviation Safety (X3)	1. Availability of information	3
	2. Availability of flight and weather condition information	2
	3. Availability of aviation safety equipment	2
Support (X4)	1. Availability of toilets	3
	2. Availability of seats in the waiting room	2
	3. Friendly service of outlets, restaurants, and other supports	3
Baggage (X5)	1. Trolley availability	2
	2. Waiting time for the pick-up queue (<10 minutes)	3
	3. Safety of goods is maintained	2
Passenger Satisfaction (Y)	1. Physical facilities, equipment, employees and communication facilities	2
	2. Ability to deliver the promised service promptly, accurately, and satisfactorily.	2
	3. The desire of the staff to assist the passengers and provide responsive service.	2
	4. The knowledge, ability, courtesy and trustworthy nature that the staff possess, are free from danger, risk or indecision.	2
	5. Ease of connection, good communication, personal attention, and understanding the needs of the Passengers.	2
Number of grains		**45**
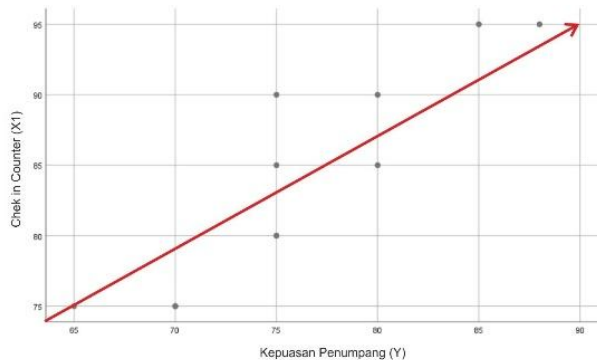
Fig. 2. Scatter graph test plot
Note: X1: Check in counter, Y: Passenger Satisfaction

4. RESULTS

Based on the test results above, the data plot pattern forms a straight line from the lower left up to the upper right. This shows that there is a linear and positive relationship between the check in counter variable (X1) and the passenger satisfaction variable (Y).

A descriptive overview of the variables of check in counter, AVSEC, Flight Safety, Support,

Baggage to passenger satisfaction. The average value of Mean check in counter value is 54.96, AVSEC mean value is 78.43, Aviation safety is mean value is 64.92, Supporting mean value is 59.72, baggage mean value is 57.83 and passenger satisfaction value is 62.92. The median value of the check-in counter is 56, AVSEC 78, flight safety 64, support 62, baggage 74 and passenger satisfaction 64. The mode value of the check in counter is 56, AVSEC 83,

Table 2. A significant correlation between the check in counter variable and the passenger satisfaction variable

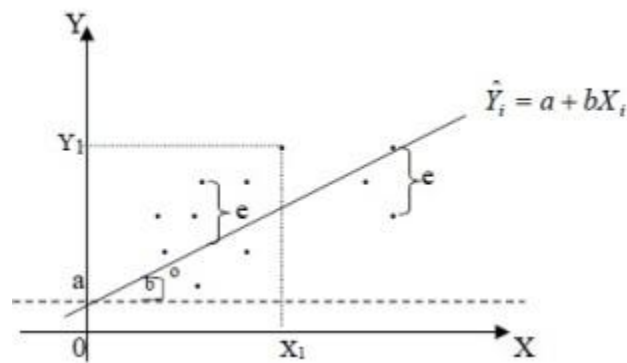| No.	Interval	Category	Frequency	Percentage
1	14-24	Bad	0	0
2	25-35	Not good	6	4,3
3	36-46	Good Enough	8	5,6
4	47-57	Good	81	57,8
5	58-68	Very Good	45	32,3
Total			**140**	**100**

Fig. 3. Regression

flight safety 62, support 62, baggage 74 and passenger satisfaction 62. As for the description of each of the variables.

Based on the Significance value of Sig. (2-tailed): from the output table above, it is known that the value of Sig. (2-tailed) between Check in counter (X1) and Passenger satisfaction (Y) is 0.002 < 0.05, which means that there is a significant correlation between the Check in counter variable and the Passenger satisfaction variable.

5. DISCUSSION

Based on the calculated r value (Pearson Correlations): It is known that the calculated r value for the relationship of Check in counter (X1) with Passenger satisfaction (Y) is 0.678 > r table 0.576, it can be concluded that there is a relationship or correlation between the check-in counter variable (X1) and the passenger satisfaction variable (Y). Furthermore, it is known that the calculated r value for the relationship between AVSEC (X2) and Passenger satisfaction (Y) is 0.746 > 0.576, so it can be concluded that there is a relationship or correlation between the AVSEC variable (X2) and Passenger satisfaction (Y). Furthermore, it is known that the calculated r value for the

relationship between flight safety (X3) and passenger satisfaction (Y) is 0.746 > 0.576, so it can be concluded that there is a relationship or correlation between the flight safety variable (X3) and passenger satisfaction (Y). Furthermore, it is known that the calculated r value for the relationship of Support (X4) with Passenger satisfaction (Y) is 0.746 > 0.576, so it can be concluded that there is a relationship or correlation between the supporting variable (X4) and passenger satisfaction (Y). Furthermore, it is known that the calculated r value for the relationship between baggage (X5) and passenger satisfaction (Y) is 0.746 > 0.576, so it can be concluded that there is a relationship or correlation between the baggage variable (X5) and passenger satisfaction (Y). Because the r count or Pearson Correlation in this analysis is positive, it means that the relationship between the two variables is positive or in other words, the increasing check-in counter services, AVSEC, Flight Safety, Support and Baggage will also increase passenger satisfaction at Sultan Hasanuddin Makassar Airport.

Passenger satisfaction, if in the absence of independent variable (X1 to X5 = 0) then passenger satisfaction is only a certain value, while if each respondent the answer increases by

1 point for the free variable answer (X1 to X5 = increased results), then it is estimated that the level of tendency of passenger satisfaction to increase.

However, if calculated in simple terms, the multiple regression formula is as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$$

Description:

Y = Passenger Satisfaction
a, b1, b2, b3, b4, b5 = constant
X1 = Check In Counter
X2 = AVSEC
X3 = Flight Safety
X4 = Support
X5 = Baggage

6. CONCLUSION

There is a significant positive influence of check in counter, AVSEC, flight safety, support and baggage on passenger satisfaction of Sultan Hasanuddin Makassar International Airport with a calculated r value of 0.746 is in the strong category.

Based on the service quality model found that Passenger satisfaction (Y = a + b1X1 + b2X2 + b3X3 + b4X4 + b5X5) , if in the absence of independent variable (X1 to X5 = 0) then passenger satisfaction is only a certain value, while if each respondent the answer increases by 1 point for the free variable answer (X1 to X5 = increased results), then it is estimated that the level of passenger satisfaction tendency increases.

Based on the research results, it also supports the second hypothesis that the AVSEC variable has a positive and significant effect on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport. This is indicated by the higher value of r2 with its regression equation and positive value. The t-value of 6.195 > t-table of 1.9747 with a significance value of 0.004 shows that AVSEC has a positive and significant influence on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport, so the second hypothesis is accepted.

Based on the research results, it supports the third hypothesis that the flight safety variable has a positive and significant effect on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport. This is indicated by the higher value of r2 with its regression equation and positive value. The t-value of 3.235 > t-table of 1.9747 with a significance value of 0.005 shows that flight safety has a positive and significant influence on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport, so the third hypothesis is accepted.

Based on the research results, it supports the fourth hypothesis that the supporting equipment variable has a positive and significant effect on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport. This is indicated by the higher value of r2 with its regression equation and positive value. The t-value of 3.127 > t-table of 1.9747 with a significance value of 0.004 shows that supporting equipment has a positive and significant influence on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport, so the fourth hypothesis is accepted.

Based on the research results, it supports the fifth hypothesis that the baggage variable has a positive and significant effect on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport. This is indicated by the higher value of r2 with its regression equation and positive value. The t-value of 2.495 > t-table of 1.9747 with a significance value of 0.005 shows that baggage has a positive and significant influence on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport, so the fifth hypothesis is accepted.

Based on the research results, it supports the sixth hypothesis that the check-in counter, AVSEC, flight safety, supporting equipment, and baggage variables have a positive and significant effect on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport. This is indicated by its regression equation and positive value. The F-value of 24.537 > F-table of 3.05 with a significance value of 0.006 shows that the variables of the check-in counter, AVSEC, flight safety, supporting equipment, and baggage have a positive and significant influence on the satisfaction of passengers at Sultan Hasanuddin Makassar International Airport, so the sixth hypothesis is accepted.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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