

The Operational Delay With on Time Performance Terminal 3 Soekarno Hatta Airport (Case Study of PT Garuda Indonesia)

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Abstract

The purpose of this study is to examine operational delay with on time performance at PT Garuda Indonesia located in Terminal 3. The problem of this study is there are delay due to flight operations and airport facilities. The study collected the data from the company and by doing the field research. Simple and multiple regression analysis, correlation coefficients, determinant coefficients and hypothesis testing were used to analyse the data. The results show that there is a negative and strong relationship due to Flight Operation with On Time Performance. The coefficient of determination is 92%, the results of hypothesis test (t-test) have a significant positive effect. The connection of delay due to Airport Facilities with On Time Performance is $Y = 92,549 + (-0,123X)$ from the regression equation looks down (negative). The correlation coefficient $r = 0.602$ has a positive and strong relation. The coefficient of determination is 36.2%, the results of hypothesis testing (ttest) have a significant relationship. The connection of delay due to Flight Operation and Airport Facilities to On Time Performance is $Y = 98,274 + (-1,772 X_1) + (-0,011 X_2)$. The correlation coefficient $r = 0.960$ means a positive and very strong relationship. The coefficient of determination is equal to 92.2%. Hypothesis test results (f test) have proven a positive and strong relationship.

Keywords: Delay, Flight Operation, Airport Facilities, On time Performance

1. BACKGROUND

PT Garuda Indonesia, Tbk is the largest airline in Indonesia when it is categorized from its flying scope and number of passengers carried each year. The airlines support by the ground handling and improve the performance of ground handling method, particularly for baggage handling, passenger handling, and aircraft interior improvement activities. Rising potency of those operations was one among the efforts that might be done to appreciate PT

Garuda Indonesia, which strives to supply glorious services to its passengers (Nugroho, Riastuti, & Iridiastadi, 2012).

Lean producing principles are currently able to be remodeled and applied into service organizations. One of them is in aviation. The aviation industries are still considered important competitor, thus they need to do endeavor in up whole awareness onwards products of performance considerations On Time Performance (OTP) rate. One in every of the efforts which will be enforced to realize high OTP rate is by upgrading the performance of ground handling processes. Ground handling, as we know, consists of a lot of activities; such as catering, interior cleaning, fueling, maintenance, passenger handling, baggage handling, and others. This research was focused on interior cleaning, passenger handling, and baggage handling activities as they represent (Nugroho et al., 2012)

In the commercial passenger airline industry in Indonesia, client behavior in selecting airplanes has many types, together with the selections of flights that give low costs, and smart flights at premium costs. Dependent and independent considerations in decisions are basically different from different industries. Flight routes that may connect from one town (A) to another town (B). Additionally, a departure schedule, number of times the flight frequency affects the value of personal consumers. Often consumer decisions cannot be alone because they include groups from travel agencies, as well as flight opportunities for business or for travel. On routes that are only serviced by one airline, it will be a monopoly for the corporate, except for full travel routes with several companies provide a more compact schedule with several decisions of airlines (Subagio & Saputra, 2012).

One of the constraints is in the operations section where external parts that often occur are factors caused by airport facilities such as runway queues, late passenger arrivals, route changes, presence of air traffic, and no parking at destination airport, one of the causes of the delay is the Garuda Manualdelay

codes that are implemented starting January 1, 2009 are airport facilities. Other problems that often occur due to external factors are unpredictable weather problems, flight delays caused by external factors beyond the company's control (Hanny Chairunisa, 2017).

The problem of delays caused by internal factors is especially in the process of pre-flight and post-flight. under the responsibility of Garuda Indonesia flight operations. Constraints in the operations that often occur are awaiting the arrival of Pilot in Command (PIC), delays in aircraft cabin crew, unprepared aircraft cabin while passengers are ready to enter the aircraft, and pre-flight preparations that have not been carried out and cause delay(Hanny Chairunisa, 2017).

Air transportation is one type of transportation that is needed by humans in meeting their needs. Air transportation is the latest and fastest tool with extraordinary range because it has several advantages, including speed factor, because in air transportation using high-speed aircraft (Hakim Lukmanul dan Sri Walny Rahayu, 2017).

Service is any action or activity that can be offered by a party to another party, which is basically intangible and does not result in any ownership. Production can be linked or not linked to a physical product. Services are activities, benefits, or satisfaction offered. Services are performance performances, intangible and quickly lost, more perceived than owned, and more customers can actively participate in the process of consuming these services (Supranto, 2006). The five main dimensions are in the order of importance, they are Reliability, Responsiveness, Assurance, Empathy, Tangible (Parasuraman, 1985).

According to Abbas (Salim Abbas, 2012), Transportation is the activity of moving goods (cargo) and passengers from one place to another. Transportation is basically the activity of moving or moving people and goods or other resources from a place or place of origin to another place or destination by means of transportation. Ground handling is an airline company

activity that deals with handling or service to aircraft passengers on land and aircraft itself while at the airport, both for departure and arrival. Flight safety ground handling objectives, On time performance, Customers' satisfaction, Efficiency (Majid & Warpani, 2009).

Problems with flight schedule delays are problems that require serious handling. Because it can cause losses for the airline company and also for passengers due to lost time. This is the responsibility of the entire work unit of the airline company, one of which is the activities of passenger handling. Each airline's services include pre-flight, in-flight and post-flight services. In the service of pre-flight and post-flight, the airline involves a third party, the Ground Handling company (Mulyani & Hartini, 2016).

Timeliness or on time performance has become a benchmark for trusting service users to make choices in traveling. On time performance is a condition when the time of departure and arrival time are as specified. Because an airplane has a use value when the aircraft is in the air, the longer the aircraft is in the air, the more profits will be obtained by the airline. Therefore, flight timeliness or on time performance is very much taken into account by airlines (Girasyitia & Santosa, 2015). According to Nasar in (Arofat Osman dan Ferial, 2008), On Time Performance is a record of the timeliness of airlines on flight departures and arrivals. An airline can be said to be good if the achieved on time performance always meets its flight schedule. To produce a good performance, the cooperation between one part and another part of an airline must be good too.

2. METHODOLOGY

The research was conducted at PT. Garuda Indonesia that located at the Ultimate Terminal 3 of Soekarno-Hatta International Airport, Cengkareng Tangerang Banten, Indonesia. Data sources in this study used secondary data. Data collection techniques used observation and literature study. Data analysis

techniques used simple linear regression, multiple regression, correlation coefficient, determinant coefficient, and hypothesis testing (Sugiyono, 2009).

3. RESULT

The increasing and decreasing in total flight delays was due to flight operation handling where the highest level of delay occurred in July for 31 times. After that, i August became the second month most experienced in delay of flight operation section with 21 times of delay. Then, September became the month with the lowest delay rate of 18 times.

Table 1.
Total Delay Contribution by Flight Section
Operation in July - September 2017 (in Frequency)

Flight Operation	Month			Total
	July	August	September	
Contribution	Frequency			
Waiting for PIC	8	4	5	17
Waiting for Flight Officer	2	0	0	2
Waiting for Flight Attendant	9	7	6	22
Prepared Cabin	2	1	2	5
Change Crew & Cabin	2	3	3	8
Change Aircraft	4	4	2	10
Waiting Additional Fuel	2	0	0	2
Waiting Doc Flight Plan	2	2	0	4
Total	31	21	18	70

Resources: Daily Report OTP PT Garuda Indonesia

a. Delay level for handling Flight Operation (X_1) with On Time Performance (Y)

The result of Simple Linear Regression equation is $Y = 98,178 + (-1,832X)$

From the regression equation, it can be seen that Flight Operation relationship is down (negative), it is shown in the regression coefficient or the bX value in the regression equation is a negative number, - 1.832 units. The results of the calculation of obtained correlation $r = 0.959$, which

means that the relationship between variable X and variable Y is a very strong relationship based on a table of interpretations of relationship closeness.

The results of the determination coefficient analysis obtained the value $(r)^2$ of 0.912 or 91.2. The relationship between handling variable Flight Operation (X_1) and the variable On Time Performance (Y) is 92%. While the remaining 8% is caused by other factors. Based on the calculation results, it is known that t-counts is 9, 8084 and T-table is 2, 2281. Therefore, it is known that t-count is greater than t-table namely; $9, 8084 > 2, 2281$. From these results H_0 is rejected, and H_a is accepted. It means, the results above shows that the Flight Operation variable has a significant influence on On Time Performance (OTP).

b. Delay Level Due to Airport Facilities (X_2) With On Time Performance (Y)

The result of the regression equation is $Y = 92,549 + (-0,123X)$ that the resulting constant value of 92,549 indicates that if the variable Airport Facilities is considered constant, then the value of On Time Performance of PT Garuda Indonesia in July-September 2017 is 92,549. From the regression equation it can be seen that the Airport Facilities relationship is down (negative), it is shown in the regression coefficient or the bX value in the regression equation is a negative number, it is aimed at the regression coefficient or the bX value in the regression equation in the form of a negative number of - 0,123 units. That is, if the delay due to handling of Airport Facilities has increased 1 unit then On Time Performance will tend to decrease by - 0.123 units. If there is an increase in delay, the timeliness will decrease. The results of the calculation of the correlation obtained $r = 0.602$. Because the magnitude of r is in the interval 0.60-0.799 which means the relationship between variable X and variable Y is to have a

positive and strong relationship based on the table of interpretation of the relationship closeness. Value $(r)^2$ is 0.36190 or 36.2%, that is the relationship between the handling variables Air Facilities (X_2) and the variable On Time Performance (Y) of 36.2%, while the remaining 63.8% is caused by other factors.

The value of t-counts $2.9836 > 2.2281$, from this H_0 result is rejected, and H_a is accepted. Based on the t-test curve above, it can be seen that the variable Airport Facilities have a significant relationship to variable On Time Performance. Thus the initial hypothesis that there is a significant positive relationship between Airport facilities with PT Garuda Indonesia On Time Performance.

c. Delay Level Handling Flight Operation (X_1) and Airport Facilities (X_2) with On Time Performance (Y)

The results of regression analysis and multiple correlation test between Flight Operation (X_1) and Airport Facilities (X_2) variables with On Time Performance (Y), $Y = 98,274 + (-1,772X_1) + (-0,011X_2)$ variables.

From the regression equation, it can be seen that the Flight Operation relationship with On Time Performance is in the same direction (negative), it is shown in the regression coefficient or b_1 value in the regression equation which shows a negative number of -1.777 units. Likewise, if Flight Operation has increased 1 unit, On Time Performance will tend to decrease by -1.777 units. The relationship between Airport Facilities is in the same direction (negative), this is shown in the regression coefficient or b_2 value in the regression equation which shows a negative number of -0.011 units. On the contrary, if Airport Facilities experience an increase of 1 unit, On Time Performance will tend to decrease by -0.011 units.

From the results of the coefficient a (intercept) is equal to 98.274 which mean that the average contribution of other variables outside of Flight Operation and Airport Facilities has a negative impact on On Time Performance.

The results of the variable Determination Coefficient are handling Flight Operation (X_1) and Airport Facilities Handling (X_2) variables with a variable On Time Performance (Y) of 92.2% while the remaining 7.8% is caused by other factors.

The test results off Flight Operation (X_1) and variable Airport Facilities (X_2) with the variable On Time Performance (Y) are f table of 4.26 and f count of 53.380 ($53.380 > 4.26$). If $F_{\text{arithmetic}} > F_{\text{table}}$ then H_0 is rejected, H_a is accepted. Thus the initial hypothesis is suspected to have a positive correlation between handling Flight Operation and Airport Facilities with PT Garuda Indonesia of On Time Performance.

4. DISCUSSION

Factors causing delays at each airport have different characteristics and facilities, for Hasanudin airport, the delay is due to the level of air traffic density. Of the 6 airlines operating at Sultan Hasanudin Airport, the average OTP meets 85%, which means airport facilities do not cause delay, average delay is caused by operational handling (Welly Pakan, 2012).

One of the delay factors is handling the aircraft during the land carried out by the ground handling. To determine aircraft departure feasibility by using the fishbone method, which is to look for factors that are not timely (OTP) and plus minus interesting methods (PMI) so as to provide recommendations to the operational manager regarding the operation of on time performance, congratulations and customer satisfaction (Qammaddin, 2012).

The cause of late arrival and departure of aircraft at Batam International Airport is the Operational factor. Operational factors are caused by landing,

queue take off, and check in. The most dominating thing is the check-in process, which is related to baggage carried by passengers, it is necessary to unload and load the baggage. Unloading and baggage loading are the main causes due to the large amount of baggage, the distance of the aircraft to the place of check in that is far apart. passengers, namely speeding up how to enter or remove goods from the aircraft. As well as developing the runway, so that the aircraft does not experience queues during landing or take off (Larisang, 2015).

Delay is a delay or delay in flight departure from scheduled flights from a predetermined schedule / schedule. The effect caused by the occurrence of delays is quite wide, both for passengers and for other service companies that utilize the flight services. Delay is also an indicator of consumer / passenger assessment of airlines. The level of loss of consumers and airlines as flight providers is unbalanced (Sri Sutarwati, Hardiyana, 2016).

In this study it was found that the delay in departures on aircraft at Soekarno Hatta terminal 3 was caused by a flight operation. The results of the analysis show that the delay is caused by many factors in the work of the flight operation. Whereas the results of the delay analysis due to airport facilities have not been proven to provide a significant contribution, this is because the airport facilities on terminal 3 have been very good.

5. CONCLUSSION

The contribution of the flight operation delay is caused by many factors, namely waiting for the pilot, waiting for the flight officer, waiting for the attendance flight, then preparing the cabin, changing the crew and cabin, replacing the aircraft, waiting for fuel and waiting for the flight plan document. This contribution contributes to the most delay, which is 92%, while the remaining 8% is caused by other factors. This means that the contribution of the delay due to flight operation is very important so the company must be

more concerned about the cause of the delay. While the contribution of delay due to airport facilities contributed 36%, while the remaining 64% was due to other factors. This means that the airport terminal 3 facility at Soekarno Hatta airport is considered good and not a dominant factor in contributing to the cause of the delay in the company.

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