A Qualitative Study The Optimalization Of Pick UpZone Area

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Abstract
Sultan Aji Muhammad Sulaiman Sepinggan International Airport Balikpapan is one of the airports managed by PT Angkasa Pura I. At this airport there are 2 sides, namely landside (land side) and airside (air side), on the landside (land side) there are pick up zone area facilities at the arrival terminal. This study aims to determine the correlation between variable X and variable Y by using a type of qualitative descriptive research, namely whether the pick up zone area at the arrival terminal has been optimized and in accordance with applicable rules. So from this description, the researcher took the title "Optimization of the pick up zone area at the arrival terminal to break down congestion at Sultan Aji Muhammad Sulaiman Sepinggan International Airport Balikpapan" The formulation of the problem in this study is how to break down congestion and how to optimize the pick up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport Balikpapan. With data collection methods in the form of observations, interviews, questionnaires, and conducting literature studies and documenting research objects. In the results of the study, the level of correlation between variable X and variable Y was 0.9, which is a very high, very strong, reliable correlation. Then it can be concluded that there is a need for optimization in the arrival terminal pick up zone area by returning the configuration of lane use according to the rules and utilizing empty areas in the pick up zone as a step to minimize the level of congestion at Sultan Aji Muhammad Sulaiman Sepinggan International Airport Balikpapan.

Keywords: pick up zone, optimization, congestion.

INTRODUCTION

Means of transportation are very important, especially to increase the affordability of an area, becauseeach region certainly has differences in terms of regional characteristics and differences in the habits of the local community. Therefore air transportation is considered the most appropriate choice, so that from time to time it is increasingly in demand by users of transportation services, especially in terms of time efficiency

Airport is a certain area of land or water (including buildings, facilities and equipment) designated in whole or in part for the arrival, departure and movement of aircraft [1] [2] [3] [4] [5] [6].Airports have many benefits, including being an opener for isolated areas in Indonesia, because Indonesia has 17,491 islands, so that with the mode of air transportation, all regions in Indonesia can easily be reached [7] [8].

Airports in Indonesia are widely spread in every region, both those managed by PT Angkasa Pura and UPBU, one of which is Sultan Aji Muhammad SulaimanSepinggan International Airport Balikpapan or what usedto be called Sepinggan Airport with IATA code: BPN andICAO code: WALL . This airport is managed and operated by PT Angkasa Pura I which has been opened since August 6, 1997. Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, provides services in the form of airport services, one of which is landside services which provide quality and accurate systems. so that it can give a good impression to the service users of Sultan Aji Muhammad Sulaiman Sepinggan Balikpapan International Airport which is managed by PT Angkasa Pura I.

Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, is an airport that can be considered quite busy with a large number of visitors, so it requires adequate facilities according to standards. When viewed from various aspects, for example landside facilities, one of which is the pick-up zone area that has the most impact.

At Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, there was still a discrepancy in the use of the pick-up zone configuration with related rules and an empty area was found on the east side of the front of the arrival terminal which has the potential to be optimized properly, which is often used by vehicles to park carelessly, thus causing traffic jams.

At Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan has a unit tasked with

supervising and controlling all facilities on the landside, namely the Terminal Service Officer (TSO), one of which is the pick-up zone area. According to previous research, pick-up zone is area used to raise and lower passengers at the airport [9] [10] The standard assignments for the landside area refer to the decision of the directors of PT Angkasa Pura I No. 87 of 2018 regarding Landside Manual Of Standards (MOS) [11].So based on the introduction and background above, the formulation of the problem can be taken as follows:

1. How do you unravel the congestion in the pick-up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan?
2. How do you optimize the pick-up zone area at the arrival terminal to increase revenue at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan?

METHODS

Research design

According to previous research, research design is all the processes needed in planning and conducting research [12] [13] [14]. It can also be interpreted as a strategy implemented by researchers to link systematically each research element in such a way that the analysis and determination of research subjects becomes more effective and efficient. This study used a qualitative descriptive research method with data collection in the form of observation, literature study, interviews, questionnaires and documentation [15] [16] [17] [18]. So that this research can be carried out in two stages, namely planning which includes problem identification, problem formulation, theoretical basis and problem formulation, while implementation includes data collection (population, sample, instrument development), instrument testing,

Research variable

According to Sugiyono, the definition of a research variable is everything in whatever form is determined by the researcher to be studied so that information is obtained about it, then a conclusion is drawn [19].

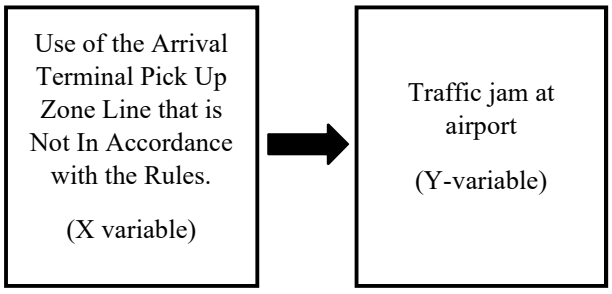

Figure 1. Research Variables

Variable X or the independent variable (free) in this study is the use of the arrival terminal pick-up zone which is not in accordance with the rules. While the variable Y or the dependent variable (tied) in this study is traffic jam at the airport.

Population, Sample and Research Object

According to Sutrisno Hadi in Sugiyono, the population is a generalization area consisting of objects or subjects that have certain quantities and characteristicsdetermined by researchers to be studied and then conclusions drawn [20]. The population that will be usedas a source in this study are airport operations landside and terminal managers, and officers who control and supervise the arrival terminal pick-up zone area at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, namely terminal service officers, aviation security officers, and APS parking attendants. According to Sugiyono, the sample is part of the number and characteristics of the population. So that the sample in this study was carried out to 1 airport operation landside and terminal manager, 1 terminal service officer, 1 aviation security officer, and 1 APS officer parking at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan. As well as the research object that will be taken in this study is the pick up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan.

Research Instruments

Observation

According to Sutrisno Hadi, observation is a complex process consisting of various biological and psychological processes [20]. The observation instrument is used as complementary data from interviews that have been conducted in qualitative research. In this study, researchers made the pick-up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, an aspect to be observed.

Table 1. Observation guidelines

No.	Indicator	Source
1.	Number of lanes in the pick up zone area	Decree of the Board of Directors of PT Angkasa Pura 1 No. 87 of 2018 concerning Landside Manual Of Standards (MOS).
2.	Use of the pick-up zone	
3.	Placement of stick cones in the pick-up zone	

Library Studies

Literature studies are related to theoretical studies and other references about values, culture, and norms that

develop in the social situations studied. In addition, literature review is very important for conducting research, because research cannot be separated from literature In this study, it will refer to the decision regulations of the directors of PT Angkasa Pura I No. 87 of 2018 regarding Landside Manual Of Standards (MOS).

Interview

According to Esterberg, an interview is a meeting of two people to exchange information and ideas through questions and answers, so that meaning can be constructed in a particular topic [21]. In this study using a structured interview technique that has been prepared in advance a list of questions. Then intensive interviews will be carried out with the airport operations lanside and terminal manager as the person in charge of the policy in the pick up zone area, 1 terminal service officer, 1 aviation security officer, and 1 parking APS officer.

Questionnaire

Questionnaire is a method that is carried out by giving written statements or questions to respondents in order to get answers to a problem in the form of various opinions about the object being studied. Researchers used electronic media in the form of a Google form to collect questionnaire data, then used a Likert scale as a research instrument to measure the effect of optimizing the pick up zone area on the level of congestion at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan. Researchers distributed questionnaires containing a list of statements related to the problem being investigated to officers in the pick up zone area, namely 7 terminal service officers, 7 aviation security officers,

Documentation

Documentation is a method of collecting data and information in the form of books, archives, documents, written numbers and pictures in the form of reports and information that support research [22]. The document sheet under study was used as a research instrument by the author containing a description of the observation activity document and the researcher's documentation when making direct observations in the field, namely documentation in the pick-up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan.

RESULTS AND DISCUSSION

Observations in this study were only carried out in the pick-up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan. During the observation, traffic jams were often found, especially during peak hours, which are around half past 11 am to 12 noon and 5 pm to 6 pm. On the other hand, based on the results of field observations on January 31, 2023, it is known that there is a mismatch in the configuration of the use of the existing lane with the rules in the Landside MOS (Manual Of Standards). And from the results of other observations on February 1, 2023, it was found that there was a stick cone placement between lanes 2 and 3 which could prevent vehicles from maneuvering so that it would have an impact on the smooth running of vehicles in the pick up zone area. Also, an empty area was found during the observation on February 1, 2023 which has the potential to be optimized, which is on the east side of the arrival terminal in the pick-up zone area. So that the area is often used as a random parking lot which can affect the smoothness of the vehicle lane.

From the results of interviews with informants, it was found that in the pick-up zone area at the arrival terminal there were still frequent traffic jams due to the use of lanes in the pick-up zone that were not in accordance with the regulations, as well as the large number of vehicles parked carelessly in an empty area in front of the arrival terminal which prevented other vehicles. So it is necessary to apply the rules for each lane use and optimization.

Based on the results of the questionnaire, the rank correlation value was obtained between Variable X (Use of the Arrival Terminal Pick Up Zone Line that was Not In Accordance with the Regulations) and Variable Y (Congestion at the Airport) which was obtained from the following calculations:

Table 2. Correlation ranking

X	Y	RankX	RankY	d	Dn^2
98	98	1	1	0	0
93	96	5	4	1	1
95	95	4	5	-1	1
97	97	2	2	0	0
96	98	3	3	0	0
Amount					2

$$rs = 1 - \frac{6\sum d^2}{n(n^2-1)}$$

$$= 1 - \frac{6.2}{5(5^2-1)}$$

$$= 1 - \frac{12}{120}$$

$$= 1 - 0.1$$

$$= 0.9 \text{ (very high correlation, very strong, reliable)}$$

Figure 2. Output of the validity of the variable X

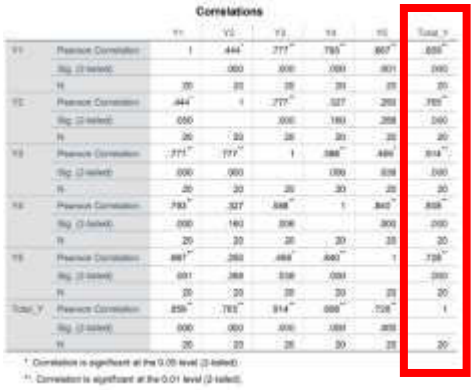

Figure 3. Output of the validity of the variable Y

Tabel r untuk df = 1 - 50

df = (N-2)	Tingkat signifikansi untuk uji satu arah				
	0.05	0.025	0.01	0.005	0.0005
	Tingkat signifikansi untuk uji dua arah				
	0.1	0.05	0.02	0.01	0.001
1	0.9877	0.9969	0.9995	0.9999	1.0000
2	0.9000	0.9500	0.9800	0.9900	0.9990
3	0.8054	0.8783	0.9343	0.9587	0.9911
4	0.7293	0.8114	0.8822	0.9172	0.9741
5	0.6694	0.7545	0.8329	0.8745	0.9509
6	0.6215	0.7067	0.7887	0.8343	0.9249
7	0.5822	0.6664	0.7498	0.7977	0.8983
8	0.5494	0.6319	0.7155	0.7646	0.8721
9	0.5214	0.6021	0.6851	0.7348	0.8470
10	0.4973	0.5760	0.6581	0.7079	0.8233
11	0.4762	0.5529	0.6339	0.6835	0.8010
12	0.4575	0.5324	0.6120	0.6614	0.7800
13	0.4409	0.5140	0.5923	0.6411	0.7604
14	0.4259	0.4973	0.5742	0.6226	0.7419
15	0.4124	0.4821	0.5577	0.6055	0.7247
16	0.4000	0.4683	0.5425	0.5897	0.7084
17	0.388		0.5285	0.5751	0.6932
18	0.378	0.4438	0.5155	0.5614	0.6788
19	0.3683	0.4329	0.5034	0.5487	0.6652
20	0.3598	0.4227	0.4921	0.5368	0.6524

Figure 4. r table

Based on the SPSS correlation output, it is known that the r count is greater than the r table, which is equal to 0.4438. And from the results of calculations using the Likert scale instrument, it is known that from all respondents, totaling 20 people consisting of 7 terminal service officers, 7 aviation security officers, and 6 parking APS officers, produced a score of variable X (98+93+95+97 +96) : 5 = 96 which stated that the respondent strongly agreed that the configuration of the arrival terminal pick-up zone line needs to be reapplied according to the rules. In the variable Y (98+96+95+97+98): 5 = 96.4 which states that respondents strongly agree that if the configuration of theuse of the arrival terminal pick-up zone lane has been applied according to the rules then congestion can be broken down.

Based on the results of the research described above, suggestions can be given to solve these problems, as follows:

A. Short-term :

1. It is recommended that the use of lanes in the pick-up zone be readjusted to the relevant rules which refer to the decree of the directors of PT Angkasa Pura I No. 87 of 2018 regarding Landside Manual Of Standards (MOS).
2. It is recommended that the stick cone be arranged according to the needs of each lane, namely between the VIP lane and the ordinary inner line andthen between the maneuver lane and the bypass lane.
3. It is recommended to add a sign regarding the prohibition of stopping for more than 3 minutes or other information regarding the lanes in the pick upzone area.

B. Long-term :

1. It is recommended that one of the pick-up lanes be used as a paid VIP lane in order to minimize vehicles that stop for more than 3 minutes at the pick-up lane.
2. It is recommended that the empty area in the pick- up zone be used as paid VIP parking, as well as theaddition of a boom gate at the end of the VIP lane, which will have an impact on the airport, namely revenue has the potential to increase and congestioncan be minimized. Then the advantage for service users is that access to the terminal building is closer because of its location right in front of the terminalbuilding, the time period for access can be longer than the usual pick-up lane and there is a special lane for VIP parking users as explained in point 1 tobreak down congestion.

CLOSING

Conclusion

Based on the results and discussion, as well as explaining the condition of the airport, activities, to the discovery of problems and also explaining how to handle them at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, it can be concluded that:

1. To unravel congestion in the pick-up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, this can be done by reconfiguring laneuse according to applicable regulations, namely referring to the decision of the directors of PTAngkasa Pura I No. 87 of 2018 regarding the Manual Of Standards (MOS) Landside, the arrangement of stick cones is adjusted to the needs of each lane, namely between the VIP lane and the usual inner line and then between the maneuver laneand the bypass lane, as well as adding a sign prohibiting stopping for more than 3 minutes or other information regarding lanes within the pick- up zone area.
2. Optimizing the pick-up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, can be done by utilizing one of the pick-up lanes to become paid VIP lanes to minimize vehicles stopping for more than 3 minutes, as well as utilizing the empty area on the east side. in front ofthe arrival terminal in the pick up zone area to be used as paid VIP parking, as well as the addition ofa boom gate at the end of the VIP lane which has the potential to increase airport revenue as well as astep to unravel congestion in the pick up zone area.

Suggestions

Based on the discussion and conclusions above that have been described regarding the pick-up zone area at the arrival terminal at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Balikpapan, suggestions can be given, namely:

1. For the application of the use of lane configuration according to applicable regulations, adjusting the placement of stick cones according to the needs of each lane, as well as adding signs to the pick-up zone area as an effort to minimize the level ofcongestion.
2. To optimize the empty area on the east side of the arrival terminal to be used as paid VIP parking which has the potential to increase airport revenue and can reduce vehicles parked carelessly and minimize the level of congestion.
3. For further research, consider the number of personnel assigned to the pick-up zone area in orderto improve the research results.

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