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The Effect of Parking Waiting Time, OTP and Incoming Baggage Handling System (BHS) on Passenger Satisfaction with Service Quality as a Mediation Variable at Terminal 3 Soekarno-Hatta International Airport

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Abstract: This study aims to analyze the influence of Parking Stand, On-Time Performance (OTP), and Inbound Baggage Handling System (BHS) Waiting Time on Passenger Satisfaction, with Service Quality as the mediating variable at Terminal 3 of Soekarno-Hatta International Airport. The population of this study consists of passengers at Terminal 3 of Soekarno-Hatta International Airport, with a sample of 168 respondents meeting the criteria, using a quantitative descriptive approach. The research method employed is the Structural Equation Model (SEM), analyzed using Smart-PLS 3.2.9 software. The results indicate significant effects of Parking Stand on passenger satisfaction, On-Time Performance on passenger satisfaction, BHS Waiting Time on passenger satisfaction, Parking Stand on service quality, On-Time Performance on service quality, BHS Waiting Time on service quality, and Service Quality on passenger satisfaction. However, Parking Stand has an insignificant effect on service quality. Furthermore, Service Quality mediates the relationship between Parking Stand and passenger satisfaction, as well as between On-Time Performance and passenger satisfaction. However, Service Quality does not mediate the relationship between BHS Waiting Time and passenger satisfaction.

Keywords: Parking Stand, On-Time Performance, BHS Waiting Time, Service Quality, Passenger Satisfaction

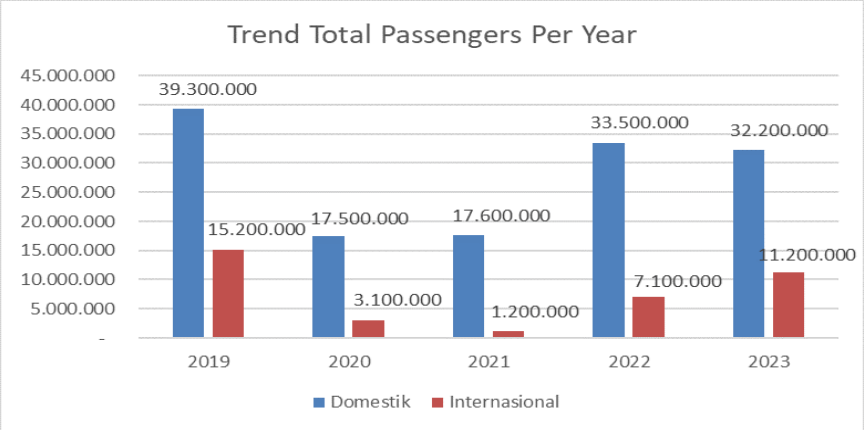
INTRODUCTION

Aviation is a system that utilizes an airspace (aerodrome) where the system includes an airport, runway, air navigation, and aircraft. An airport itself refers to a facility specifically designed for the departure, arrival, and movement of aircraft. An airport is a central point for air transportation and provides services for passengers, cargo, and aircraft. The three main airport facilities are the runway, taxiway, passenger terminal, and apron. When talking about airports, they must have supporting facilities in terms of security, safety, comfort, and other public facilities. Airports are necessary for the movement of people from one region to another (domestic and international).

The high volume of flights and the increasing number of passengers worldwide place significant demands on the airport business. The role and function of airports have undergone dynamic changes, becoming more than just a place for passengers to board and disembark, but also a visible face of a country. Airport service performance is a crucial issue in improving passenger satisfaction. As one of Indonesia's State-Owned Enterprises (BUMN), PT Angkasa Pura Indonesia (APINDO) is entrusted with managing airports in Indonesia, the largest of which is Soekarno-Hatta International Airport (BISH).

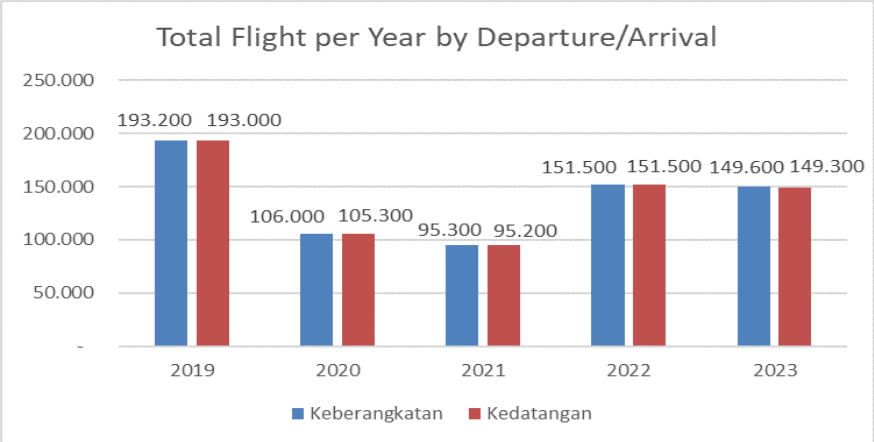
Various factors faced by the country, from economic to social needs, have driven the country's economic growth. Therefore, BISH, as an airport providing these services, has slowly but surely become the busiest airport in Southeast Asia in 2022. According to a release by Airports Council International (ACI), ACI recorded 39.6 million passenger movements from January to December 2022, while global passenger traffic reached 6.6 billion.

As seen in Figures 1 and 2 regarding passenger and aircraft movements in 2019-2023 below, the highest number of passengers and flights occurred in 2019 with a total of 54,541,276 domestic and international passengers with 386,140 flights. Meanwhile, there was a decline in domestic and international passengers and flights in 2020 with the number of passengers being 20,579,699 passengers with 211,251 flights. Furthermore, in 2021 the number of passengers and flights at BISH decreased again with the number of passengers amounting to 18,892,712 passengers with 190,451 flights. The decline in the number of passengers and flights that occurred in 2020 and 2021 was due to the global COVID-19 pandemic and also had a significant impact on the aviation industry in Indonesia. However, in 2022 the number of passengers and flights can increase significantly compared to the previous two years, namely 2020 and 2021, with the number of passengers amounting to 40,564,944 passengers with 302,970 flights. Furthermore, the number of passengers and flights will also increase in 2023, with the number of domestic and international passengers amounting to 43,566,296 passengers with 280,918 flights (as of October 2023). It can be seen from Figure 1 and Figure 2 below showing the graph of the movement of International and Domestic passengers as well as the movement of Departure and Arrival aircraft at BISH in 2019-2023.



Source: Data processed, APINDO 2023

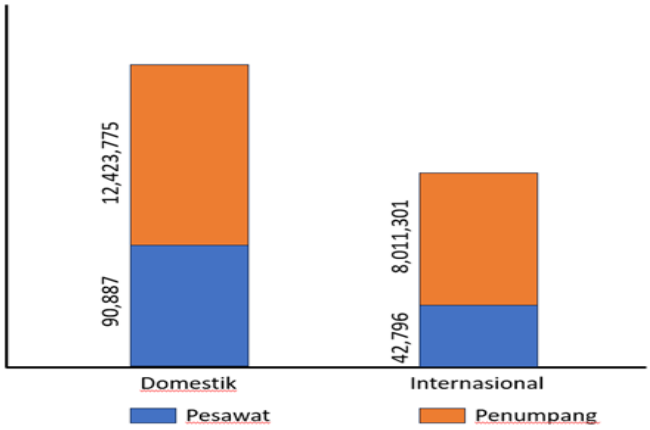
Figure 1. International and Domestic Passenger Movement Data at BISH



Source: Data processed, APINDO 2023

Figure 2. Departure and Arrival Aircraft Movement Data at BISH

The increase in passenger movement is very much felt at Terminal 3, with data held by APINDO in 2023 showing the movement of international and domestic passengers and aircraft, with a total of 8,011,301 international passengers and 12,423,775 for domestic passengers, while the number of aircraft movement data is 42,796 for international flights and 90,887 for domestic flights with a total of 133,683 flights at Terminal 3 as seen in Figure 3 in the period January - October 2023.



Source: Data processed, APINDO 2023

Figure 3. *Departure and Arrival Aircraft Movement Data at BISH*

Regarding several phenomena that have been discussed previously, it can be concluded that Terminal 3 BISH has the most international flight departures and arrivals, this can happen because the number of international airlines in Terminal 3 has collaborated with 39 airlines in December 2022 including All Nippon Airways, Asiana Airlines, Airbaltic, Air India, American Airlines, British Airways, Cathay Pacific Airways, Citilink, China Airlines, China Southern Airlines, Delta, Eastern Airlines, Emirates, Ethiopian Airlines, Etihad Airways, Eva Air, Egypt Air, FlyDubai, Garuda Indonesia, Japan Airlines, KLM Royal Dutch Airlines, Korean Air, Malaysia Airlines, Oman Airlines, Philippines Airlines, Pelita, Qantas, Qatar Airways, Sri Lanka Airlines, Sandong Airlines, Saudi Arabian Airlines, Shenzhen Airlines, Singapore Airlines, TransNusa, Thai International Airways, Turkish Airlines, United, Vietnam Airlines, Vietjet Air and Xiamen Airlines.

The increasing number of passengers at Terminal 3 of Soekarno-Hatta International Airport (BISH) has affected aircraft placement in parking stands, as not all aircraft can be parked close to the terminal. According to Pramesthi & Resti (2024), a parking stand is an area on the apron used as a stopping place for aircraft. To allocate parking stands appropriately, Apron Movement Control (AMC) officers need to consider the number and type of aircraft.

The main objectives of this allocation are to ensure passenger comfort and safety, optimize the use of the passenger bridge (aviobridge), and provide advance information to ground handling officers regarding the position of incoming aircraft, so that the process of arranging vehicles and supporting equipment can be carried out efficiently (Noor & Fauziyah, 2023).

Furthermore, this study will also analyze passenger complaints regarding flight times. Complaints generally relate to discrepancies between passengers' expected and actual flight times. This can impact overall passenger satisfaction with airline and airport services.

Table 1. Complaints about the length of time it takes

Travel Journey	**Long**	**Currently**	**Normal**
Arrival Hall			√
Imigrasi		√	
Baggage Claim	√		
Customs		√	
Arrival Public Hall			√
Pick Up Zone			√
Public Transportation		√	
Toll Gate			√

Source: Processed by the author (2024)

Table 1 shows a graph of complaints about the length of time required for the summary of monthly reports, which is still far from the time stipulated in Minister of Transportation Regulation No. PM 41 of 2023 for airport user service standards, namely the first baggage to arrive at the baggage claim area.

To ensure smooth passenger service for airlines and airports, a more efficient, precise, and robust baggage handling system is required. Therefore, Soekarno-Hatta International Airport (BISH) has implemented an organized system called the Baggage Handling System (BHS) to manage passenger baggage.

The baggage claim process at the arrivals terminal adheres to the service standards for airport users stipulated in Minister of Transportation Regulation Number PM 41 of 2023. This standard stipulates the ideal time required for the Baggage Handling System (BHS) to process passenger baggage, ideally 15-30 minutes after passengers disembark the aircraft. However, field reports indicate that processing times are still relatively long.

The suboptimal bagtag read rate for both domestic and international flights at Terminal 3 BISH may be related to the reliability of the BHS equipment. This is because the better the BHS infrastructure and equipment, the more effective the system is in detecting passengers' baggage. Low BHS reliability can lead to delays in the baggage scanning process and increase the likelihood of errors in matching baggage to passengers. Therefore, improving the quality and maintenance of BHS equipment is crucial to increase operational efficiency and provide faster and more accurate service to passengers.

A common problem currently is the waiting time for baggage claim, which is considered too long, averaging more than 40 minutes. Consequently, many passengers have complained about this through the APINDO contact center. The main complaints include delays in baggage service and a lack of information about baggage location while waiting in the baggage claim area of Terminal 3, as shown in Table 1.4 regarding Detailed Voice Sentiments. This indicates a gap between passenger expectations and the service provided, thus reducing the quality of service provided in the Terminal 3 BISH area.

METHOD

This research is a quantitative study, a type of research that utilizes numerical data to test hypotheses in an effort to answer questions or statements posed in the study (Sekaran, U., & Bougie, 2020). This study used path analysis to examine the relationships between variables, both the direct and indirect effects of the independent variables on the dependent variable. Path coefficients were calculated as standardized regression using Z-scores, and the analysis was conducted using SmartPLS software version 3.2.9.

A population is a collection of groups, activities, or objects that are the target of observation in a study (Sekaran, U., & Bougie, 2020). In this study, the population used was airline passengers at Terminal 3 BISH. According to Ahyar (2020), the purpose of determining the population is to determine the number of samples to be taken while limiting the scope of generalization of the research results.Teknik pengambilan sampel dengan menggunakan Metode Probability Sampling dengan menggunakan simple random sampling, yaitu metode pengambilan sampel di mana setiap anggota dari populasi memiliki peluang yang diketahui dan biasanya sama untuk terpilih menjadi bagian dari sampel.

In probability sampling, the sample selection process is random, ensuring that every individual in the population has an equal chance of being selected. The calculated minimum sample size is 145, while the 168 respondents exceeded the calculated minimum, so this value was used.

According to Sekaran and Bougie (2020), a variable is a characteristic whose value varies across the object under study and is used by researchers to draw conclusions. In this study, three types of variables were used: independent variables, dependent variables, and mediating (intervening) variables. Independent variables are variables that influence other variables, and in this study, they consist of Parking Stands, On-Time Performance, and Baggage Handling System Waiting Time, all of which are assumed to have either positive or negative impacts on the dependent variable. Meanwhile, the dependent variable is the primary variable that serves as the focus of observation and the ultimate goal of the study, namely Passenger Satisfaction.

RESULTS AND DISCUSSION

Measurement Model Estimation Analysis (Outer Model)

1. *Convergent Validity Test*

Convergent validity was tested by examining the correlation between item scores and constructs. An indicator is considered valid if its loading factor is greater than 0.70, although values between 0.50 and 0.60 are acceptable. Validity was also measured using the AVE (Average Equivalence Average), with values greater than 0.50 indicating a valid indicator. This analysis was conducted using SmartPLS software.

Table 2. Convergent Validity Test Results

Variabel	Indicator	Loading Factor	AVE	Keterangan
Parking Stand (X1)	X1.1	0.819	0.677	Valid
	X1.2	0.756		Valid
	X1.3	0.854		Valid
	X1.4	0.859		Valid
On Time Performance (X2)	X2.1	0.803	0.636	Valid
	X2.2	0.829		Valid
	X2.3	0.808		Valid
	X2.4	0.821		Valid
	X2.5	0.807		Valid

Variabel	Indicator	Loading Factor	AVE	Keterangan
	X2.6	0.713		Valid
Waktu tunggu *Baggage Handling System* (X3)	X3.1	0.720	0.552	Valid
	X3.2	0.727		Valid
	X3.3	0.761		Valid
	X3.4	0.749		Valid
	X3.5	0.749		Valid
	X3.6	0.745		Valid
	X3.7	0.712		Valid
	X3.8	0.710		Valid
	X3.9	0.764		Valid
	X3.10	0.787		Valid
Kualitas Pelayanan (Z)	Z.1	0.748	0.573	Valid
	Z.2	0.745		Valid
	Z.3	0.729		Valid
	Z.4	0.765		Valid
	Z.5	0.809		Valid
	Z.6	0.741		Valid
Kepuasan Penumpang (Y)	Y.1	0.880	0.746	Valid
	Y.2	0.885		Valid
	Y.3	0.825		Valid

Source: *Software* SmartPLS (2025)

Based on Table 2, all indicators of the independent and dependent variables have loading factor values above 0.70, indicating good validity and convergent validity. Furthermore, all indicators also have AVE values above 0.50, indicating that they are consistent and valid in measuring the intended construct.

2. *Discriminant Validity Test*

Discriminant validity measures the extent to which different constructs are truly separate without excessive overlap. One commonly used method to test this validity is the Heterotrait-Monotrait Ratio (HTMT), as it has clear thresholds and eases interpretation, particularly in models such as Structural Equation Modeling (SEM). The HTMT value in this study was obtained through data processing using SmartPLS software.

Table 3. Discriminant Validity Test Results

Variabel	Kepuasan Penumpang	Kualitas Pelayanan	*On Time Performance*	*Parking Stand*
Kepuasan Penumpang				
Kualitas Pelayanan	0.723			
On Time Performance	0.656	0.701		
Parking Stand	0.657	0.664	0.789	
Waktu Tunggu BHS	0.788	0.594	0.685	0.684

Source: Software SmartPLS (2025)

Based on Table 3, all statement items (indicators) have an HTMT value lower than 0.90. An HTMT value of less than 0.90 indicates that discriminant validity has been achieved well, meaning the constructs are clearly distinct and do not overlap significantly.

3. Reliability Test

Composite reliability testing aims to assess the reliability of instruments in a research model. If all latent variables have composite reliability and Cronbach's alpha values greater than 0.7, it indicates that the construct has good reliability.

Table 4. Reliability Test Results

Variabel	*Cronbach's Alpha*	*Composite Reliability*
Parking Stand	0.842	0.893
On Time Performance	0.885	0.913
Waktu Tunggu BHS	0.910	0.925
Kualitas Pelayanan	0.851	0.889
Kepuasan Penumpang	0.829	0.898

Source: Software SmartPLS (2025)

Table 4 shows that all composite reliability and Cronbach's alpha results for each independent and dependent variable demonstrate good values, as all latent variables have composite reliability and Cronbach's alpha values greater than 0.70. Therefore, this indicates reliable data for all latent variables, enabling the indicators to be used in the structural model.

Structural Model Estimation Analysis (Inner Model)

1. *R-Squared (R^2) Test*

To determine the extent to which independent variables can explain the variation in the dependent variable in the model, the R-squared (R^2) test is used. The R^2 value indicates the proportion of variability in the dependent variable that can be explained by the independent variables, while the adjusted R^2 provides an adjustment for the number of variables used. The R^2 and adjusted R^2 values in this study were obtained from analysis using SmartPLS software.

Table 5. R-squared (R^2) Value Test Results

Variabel	R Square	R Square Adjusted
Kepuasan Penumpang (Y)	0.571	0.560
Kualitas Pelayanan (Z)	0.434	0.424

Source: Software SmartPLS (2025)

Based on table 5, the R-squared (R^2) value for the passenger satisfaction variable (Y) is 0.571, which means that 57.1% of the variation in passenger satisfaction can be explained by the independent variables in the model, while 42.9% is influenced by other factors outside the model. The R^2 value for the service quality variable (Z) is 0.434, indicating that 43.4% of the variation is explained by the independent variables in the model, and the remaining 56.6% is influenced by other variables not included in this study.

2. *Q-Squared (Q^2) Test*

The Q-squared (Q^2) test measures the extent to which a model can predict variations in data not used in the model development. This test assesses the model's goodness-of-fit and its ability to predict unobserved endogenous (dependent) variables through cross-validation. The following are the Q-squared (Q^2) and adjusted Q-squared values from data processing using SmartPLS software:

Table 6. Q-squared (Q^2) Value Test Results

Variabel	SSO	SSE	Q^2 (=1-SSE/SSO)
Kepuasan Penumpang (Y)	504.000	300.608	0.404
Kualitas Pelayanan (Z)	1008.000	766.685	0.239

Source: Software SmartPLS (2025)

Based on table 4.10, it can be seen that the results of the Q-squared (Q^2) value for the passenger satisfaction variable (Y) are 0.404 and the Q-squared (Q^2) value for the service quality variable (Z) is 0.239. Thus, the Q-squared (Q^2) value for the passenger satisfaction and service quality variables is greater than 0, so it can be stated that this research model has good predictive ability.

3. Hypothesis Testing

Hypothesis testing aims to determine whether the data supports the proposed hypothesis by examining the coefficients and p-value. If the p-value is <0.05, the hypothesis is accepted and the relationship between the variables is significant; if it is >0.05, the hypothesis is rejected. This analysis was performed using SmartPLS.

Table 7. Hypothesis Testing Results

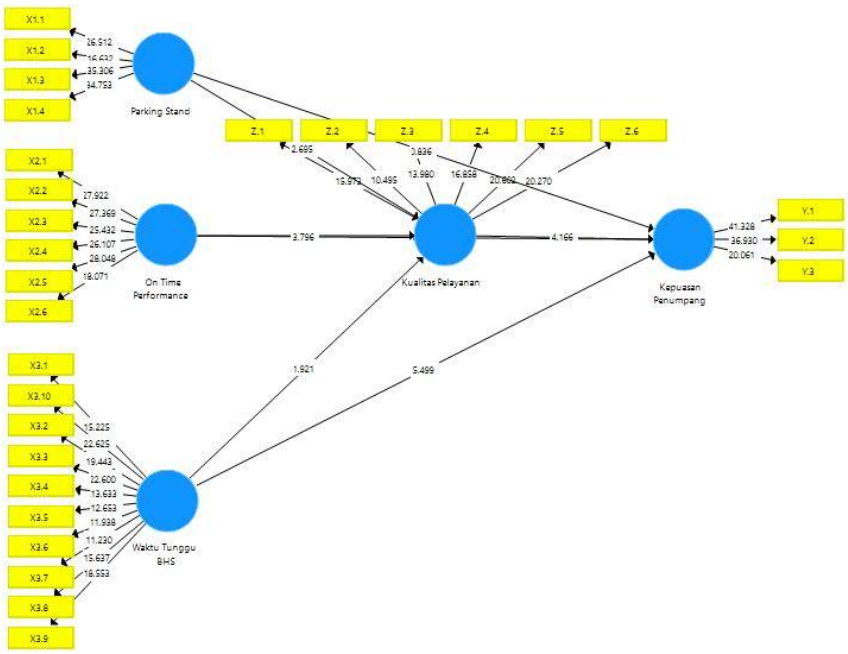
	Research Hypothesis	Original Sample (O)	T Statistics (|O/STDEV|)	P Values	Keterangan
H1	Parking Stand -> Kepuasan Penumpang	0.084	0.836	0.403	Ditolak
H2	On Time Performance -> Kepuasan Penumpang	0.042	0.542	0.588	Ditolak
H3	Waktu Tunggu BHS -> Kepuasan Penumpang	0.456	5.499	0.000	Diterima
H4	Parking Stand -> Kualitas Pelayanan	0.237	2.695	0.007	Diterima
H5	On Time Performance -> Kualitas Pelayanan	0.341	3.796	0.000	Diterima
H6	Waktu Tunggu BHS -> Kualitas Pelayanan	0.169	1.921	0.055	Ditolak
H7	Kualitas Pelayanan -> Kepuasan Penumpang	0.299	4.166	0.000	Diterima
H8	Parking Stand -> Kualitas Pelayanan -> Kepuasan penumpang	0.071	2.198	0.028	Diterima

	Research Hypothesis	Original Sample (O)	T Statistics (|O/STDEV|)	P Values	Keterangan
H9	On Time Performance -> Kualitas Pelayanan -> Kepuasan penumpang	0.102	2.677	0.008	Diterima
H10	Waktu Tunggu BHS -> Kualitas Pelayanan -> Kepuasan penumpang	0.051	1.827	0.068	Ditolak

Source: Software SmartPLS (2025)

Table 7 shows the results of the hypothesis testing. Six hypotheses had p-values below 0.05, but four hypotheses had p-values above 0.05. Therefore, there is a significant effect of the variables BHS waiting time on passenger satisfaction, parking stands on service quality, on-time performance on service quality, service quality on passenger satisfaction, and service quality mediates the effect of parking stands on passenger satisfaction, and service quality mediates the effect of on-time performance on passenger satisfaction.

Meanwhile, there is an insignificant effect of the variables parking stands on service quality, on-time performance on service quality, BHS waiting time on service quality, and service quality does not mediate the effect of BHS waiting time on passenger satisfaction. The path analysis in this study can be described as follows:



Source: Software SmartPLS (2025)
Figure 4. Path Coefficient Analysis (Inner Model)

Research Findings

1. Effect of Parking Stand on Passenger Satisfaction

The fourth hypothesis test showed a t-statistic of 0.836, an original sample of 0.084, and a p-value of 0.403. Since the p-value is > 0.05, the alternative hypothesis is rejected, meaning that parking stands do not have a significant effect on passenger satisfaction. This is because parking stands are more related to operational aspects that passengers don't directly experience. Passengers tend to prioritize other factors like lounge comfort, staff service, cleanliness, and

on-time flight performance. This finding contradicts previous studies by Noor & Fauziyah (2023) and Pramesthi & Resti (2024), which stated that parking stands have a significant effect on passenger satisfaction.

2. Effect of On-Time Performance on Passenger Satisfaction

The fourth hypothesis test showed a t-statistic of 0.542, an original sample of 0.042, and a p-value of 0.588. Since the p-value is > 0.05, the alternative hypothesis is rejected, meaning that on-time performance does not have a significant effect on passenger satisfaction. This research indicates that on-time baggage handling is considered a basic service that is not sufficient to increase overall satisfaction. Other factors such as security, physical condition of the baggage, and ease of claiming are considered more important in shaping passenger satisfaction. This finding does not support previous study results by Siahaan et al. (2023), which stated a significant effect of parking stands on passenger satisfaction.

3. Effect of BHS Wait Time on Passenger Satisfaction

The fifth hypothesis test showed a t-statistic of 5.499, an original sample of 0.456, and a p-value of 0.000. Because the p-value is < 0.05 and the original sample value is positive, the alternative hypothesis is accepted, meaning that BHS (Baggage Handling System) wait time has a significant effect on passenger satisfaction. Short baggage wait times improve convenience and airport operational efficiency, strengthen a positive image, and encourage passengers to use the service again. This finding supports the results of studies by Prabowo et al. (2023), Keke & Susanto (2019), and Fitantri et al. (2018), which showed a significant effect of BHS wait time on passenger satisfaction.

4. Effect of Parking Stand on Service Quality

The first hypothesis test showed a t-statistic of 2.695, an original sample of 0.237, and a p-value of 0.007. Since the p-value is < 0.05 and the original sample value is positive, the alternative hypothesis is accepted, which means that parking stands have a significant effect on service quality. Parking stands play a crucial role in facilitating airport operations, such as accelerating loading and unloading and reducing the risk of delays. Strategic stand placement also increases passenger convenience, cost efficiency, and safety. This finding supports studies by Amardeep (2018) and Gunawan & Rahimudin (2023), which stated a significant effect of parking stands on service quality.

5. Effect of On-Time Performance on Service Quality

The second hypothesis test showed a t-statistic of 3.796, an original sample of 0.341, and a p-value of 0.000. Because the p-value is < 0.05 and the original sample value is positive, the alternative hypothesis is accepted, which means that on-time performance has a significant effect on service quality. On-time flights improve operational efficiency, passenger convenience, and strengthen the image of the airline and airport. This also helps manage traffic flow and reduce congestion, thereby increasing customer loyalty and corporate competitiveness. This finding supports the study by Rozak & Frisnawati (2023), which stated a significant effect of on-time performance on service quality.

6. Effect of BHS Wait Time on Service Quality

The third hypothesis test showed a t-statistic of 1.921, an original sample of 0.169, and a p-value of 0.055. Since the p-value is > 0.05, even though the original sample value is positive, the alternative hypothesis is rejected, so BHS wait time does not have a significant effect on service quality. Passengers tend to consider baggage wait time normal as long as it's within a reasonable limit, and the assessment of service quality is more influenced by other factors such as staff interaction and facility convenience. This finding does not support studies by Hemeimat

& Aal (2024) and AlKheder et al. (2020), which stated a significant effect of BHS wait time on service quality.

7. Effect of Service Quality on Passenger Satisfaction

The sixth hypothesis test showed a t-statistic of 4.166, an original sample of 0.299, and a p-value of 0.000. Since the p-value is < 0.05 and the original sample value is positive, the alternative hypothesis is accepted, which means that service quality has a significant effect on passenger satisfaction. Good service quality creates a comfortable experience, increases convenience, and improves passengers' perception of the airline or airport, thereby encouraging customer loyalty. This finding supports studies by Anggoro & Jumlad (2023) and Aziz & Syaputra (2024), which showed a significant effect of service quality on passenger satisfaction.

8. Effect of Parking Stand on Passenger Satisfaction, Mediated by Service Quality

The seventh hypothesis test showed a t-statistic of 2.198, an original sample of 0.071, and a p-value of 0.028. Since the p-value is < 0.05 and the original sample value is positive, the alternative hypothesis is accepted, which means that parking stands have a significant effect on passenger satisfaction through the mediation of service quality. Strategic placement of parking stands near the terminal enhances passengers' perception of service quality, making the departure and arrival process smoother and more convenient, thereby increasing passenger satisfaction. Conversely, a distant parking location can decrease satisfaction because it adds travel time.

9. Effect of On-Time Performance on Passenger Satisfaction, Mediated by Service Quality

The eighth hypothesis test showed a t-statistic of 2.677, an original sample of 0.102, and a p-value of 0.008. Since the p-value is < 0.05 and the original sample value is positive, the alternative hypothesis is accepted, which means that on-time performance has a significant effect on passenger satisfaction through the mediation of service quality. Punctuality improves satisfaction because it reflects service reliability, but its impact is highly influenced by the quality of service during the journey. Good service can maintain passenger satisfaction, even in the event of a delay, making service quality an important mediating factor in this relationship.

10. Effect of BHS Wait Time on Passenger Satisfaction, Mediated by Service Quality

The ninth hypothesis test showed a t-statistic of 1.827, an original sample of 0.051, and a p-value of 0.068. Since the p-value is > 0.05, even though the original sample value is positive, the alternative hypothesis is rejected. This means that BHS wait time does not have a significant effect on passenger satisfaction through the mediation of service quality. This shows that passengers tend not to highly prioritize the speed of baggage retrieval, as long as the baggage arrives safely and intact. Other factors such as on-time flights and staff interaction have more influence on satisfaction. Although BHS speed is part of the service quality at Terminal 3 BISH, its effect on satisfaction is limited.

CONCLUSION

Based on the analysis results, it can be concluded that of the three independent variables, only Baggage Handling System (BHS) waiting time has a significant direct effect on passenger satisfaction, while parking stand and on-time performance do not show a significant direct effect. However, both parking stand and on-time performance are proven to have a significant effect on service quality, which ultimately has a positive impact on passenger satisfaction. Meanwhile, BHS waiting time does not have a significant effect on service quality, either directly or through mediation. In general, service quality plays an important role as a mediating

variable in strengthening the relationship between operational variables (parking stand and on-time performance) and passenger satisfaction. These results indicate that passenger perceptions of the service they experience are a key factor in achieving satisfaction, more than operational aspects that are not directly visible or felt.

Based on the research findings and conclusions, the researchers recommend that the company make improvements in several key aspects. First, aircraft parking stand management needs to be more structured through strategic placement, capacity adjustments, and the use of technology and cross-team coordination to support operational efficiency. Second, to improve the timeliness of baggage handling, it is necessary to modernize the BHS system, optimize resources during peak hours, and utilize tracking technology. Third, baggage waiting time efficiency can be improved through system updates, officer training, and technology integration. Fourth, the quality of airport services needs to be improved through staff training, facility maintenance, and the use of automated and digital systems to expedite service. Finally, to increase passenger satisfaction, airports must focus on facility comfort, excellent service, effective communication, and rapid response to passenger feedback and complaints.

Based on the results of the research analysis, the author formulated several policy implications as follows: (1) Airport and airline management need to pay attention to the main factors that influence the quality of service and passenger satisfaction, such as the effectiveness of parking stands, flight punctuality, and the smoothness of baggage handling processes according to operational standards; (2) Regular training for all airport and airline officers needs to be carried out to improve competence in providing optimal service and the ability to handle complaints and emergency situations quickly and appropriately; (3) Regular customer satisfaction surveys need to be implemented to obtain direct input from passengers, as a basis for evaluation and continuous improvement in increasing the quality of service and the experience of flight service users.

Based on the research findings, improvements to the Baggage Handling System (BHS) management at Terminal 3 BISH need to be implemented through routine maintenance, technology integration such as sensors and real-time tracking, and better coordination between the ground handling team and BHS operators, particularly during peak hours. System capacity evaluation, the use of a monitoring dashboard, and ongoing training are also crucial to maintaining the efficiency of the baggage handling process. Suggested policy implications include the addition of new variables such as security and service digitization, the use of mixed methods for deeper exploration, and the expansion of the research object to other airports to increase the generalizability of the results. Improving the effectiveness of the BHS is expected to accelerate baggage distribution and directly support service quality and passenger satisfaction.

REFERENSI

Ahyar. (2020). *Buku Metode Penelitian Kualitatif & Kuantitatif*. CV Pustaka Ilmu.

AlKheder, S., Alomair, A., & Aladwani, B. (2020). Hold baggage security screening system in Kuwait International Airport using Arena software. *Ain Shams Engineering Journal*, *11*(3), 687–696. https://doi.org/10.1016/j.asej.2019.10.016

Amardeep, J. (2018). Impact of Mishandled Baggage System in Service. *International Journal of Pure and Applied Mathematics*, *119*(15), 1463– 1469. http://www.acadpubl.eu/hub/

Anggoro, R. L., & Jumlad, W. (2023). Analysis of the Reliability of Security Check Point Equipment in Inspecting Passenger Luggage at Juanda International Airport, Surabaya. *JETISH: Journal of Education Technology Information Social Sciences and Health*, *2*(1), 276–291. https://doi.org/10.57235/jetish.v2i1.366

Aziz, S. L. N., & Syaputra, A. (2024). Pengaruh Kualitas Pelayanan Baggage Handling System (BHS) terhadap Kepuasan Penumpang Garuda Airlines di BISH Cengkareng. *Aerospace Engineering*, *1*(3), 8. https://doi.org/10.47134/aero.v1i3.2497

Fitantri, A., Madhani, A. I., & Widiastuti, S. (2018). *Assessment of Customer'S Satisfaction on Baggage Handling Service At Soekarno-Hatta International Airport*. *147*(Grost), 561–570. https://doi.org/10.2991/grost-17.2018.48

Gunawan, W. A. T., & Rahimudin, R. (2023). Operational Analysis of the Apron Movement Control (AMC) Unit in Handling Aircraft at Abdulrachman Saleh Airport Apron Malang. *JETISH: Journal of Education Technology Information Social Sciences and Health*, *2*(1), 317–333. https://doi.org/10.57235/jetish.v2i1.373

Hemeimat, R., & Aal, O. F. A. (2024). Improving the Baggage Handling System (BHS) at Queen Alia International Airport by Using Rockwell's Arena Simulation Software. *American Journal of Operational Research*, *2024*(1), 1–11. https://doi.org/10.5923/j.ajor.20241401.01

Keke, Y., & Susanto, P. C. (2019). AVIASI Jurnal Ilmiah Kedirgantaraan Vol. 16 No.2 edisi Desember 2019. *AVIASI Jurnal Ilmiah Kedirgantaraan*, *16*(2), 31–42.

Noor, D., & Fauziyah, S. (2023). Optimalisasi Parking Stand Dalam Menunjang Kelancaran Penerbangan di Bandar Udara Rahadi Oesman Ketapang. *Media Online) Jurnal Ground Handling Dirgantara*, *5*(2), 2962–6625.

Prabowo, M. D. A., Amalia, D., Septiani, V., & Komalasari, Y. (2023). Effect of Ground Handling Services on Arrival Baggage for Passenger Satisfaction. *Journal of Social Work and Science Education*, *4*(3), 632–640. https://doi.org/10.52690/jswse.v4i3.561

Pramesthi, D. N., & Resti, I. F. (2024). *Analisis Ketersediaan Parking Stand Dalam Mencapai On Time Performance (OTP) Di Bandar Udara Kolonel Robert Atty Bessing Malinau stand mempengaruhi On Time Performance (OTP) sehingga peenliti akan melakukan penelitian dengan judul "Analisis Ketersedi*. *3*(1), 3–7.

Rozak, A., & Frisnawati, E. (2023). Baggage Handling Unit Handling and Constraints during the Loading Unloading Process to Achieve on Time Performance at PT Kokapura at Ahmad Yani Airport Semarang. *QISTINA: Jurnal Multidisiplin Indonesia*, *2*(1), 410–416. https://doi.org/10.57235/qistina.v2i1.512

Sekaran, U., & Bougie, R. (2020). *Research Methods for Business: A Skill Building Approach*. Wiley.

Siahaan, J. M., Ricardianto, P., Kurniawan, J. S., Setiawan, E. B., & Abidin, Z. (2023). On Time Performance pada Bandara Internasional Soekarno-Hatta. *Jurnal Manajemen Transportasi & Logistik (JMTRANSLOG)*, *10*(3), 203. https://doi.org/10.54324/j.mtl.v10i3.1095