



# Assessment Model of Employee Competence, Ground Support Equipment Effectiveness, and Satisfaction on Service Quality

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Received: 24 June 2021 | Revised: 12 July 2021 | Published: 22 July 2021

## Abstract

**Purpose:** This study aimed to determine the effectiveness of electronic flight bag use and safety culture on Garuda Indonesia's flight safety performance.

**Research Methodology:** The data used in this study were primary data collected through online questionnaires distributed to 35 Garuda Indonesia pilots operating Airbus A330 aircraft. The analysis employed a quantitative descriptive approach using SPSS version 25. The results indicated a strong, positive, and unidirectional relationship between variables. Furthermore, electronic flight bag usage effectiveness and safety culture had a positive and significant effect on flight safety performance, contributing 78.8%, with safety culture identified as the dominant factor.

**Results:** The findings indicate a strong and positive relationship between EFB usage, safety culture, and flight safety performance. The study concludes that EFB usage and safety culture contribute 78.8% to flight safety performance, with safety culture having a more significant impact.

**Conclusions:** The use of EFB and the implementation of a strong safety culture have a substantial positive effect on the flight safety performance at PT. Garuda Indonesia.

**Limitations:** The study's scope is limited to pilots of Garuda Indonesia flying Airbus A330 aircraft, which may not be representative of all aviation sectors.

**Contributions:** This study provides valuable insights into how technology (EFB) and organizational factors (safety culture) enhance aviation safety, contributing to both academic literature and practical applications in the aviation industry.

**Keywords:** *Competence, Ground Support Equipment, Satisfaction Work*

**How to Cite:** Agusinta, L., Nugroho, A. E., Fachrial, P., & Suryawan, R. F. (2021). Assessment Model of Employee Competence, Ground Support Equipment Effectiveness, and Satisfaction on Service Quality. *Jurnal Transportasi, Logistik, dan Aviasi (JTLA)*, 1(1), 55–69.

<https://doi.org/10.52909/jtla.v1i1.37>

## 1. Introduction

Human resources are one of the most important organizational resources and play a crucial role in achieving its goals (Anwar & Abdullah, 2021; Popescu et al., 2019). Every organization is managed by people. Without them, the organization would not have existed. Challenges and opportunities in creating and managing organizations often stem from issues related to people (Amjad et al., 2021; Malik et al., 2020). Therefore, managing human resources (HR), which is the most vital resource, is a central and strategic activity. Many factors contribute to superior human resource performance, thus driving organizational success, including competence (Goswami, 2018; Wibawa, 2014).

The competence of an employee or staff member can be determined from the education and training they

have received, as well as their skills and experience (Alsafadi & Altahat, 2021). Problems which happen in field is sometimes competence from a crew alone is not enough to guarantee employee performance; there needs to be cooperation between several personnel to produce synergy to carry out performance in providing aircraft ground services to be able to improve the quality of service effectively and efficiently, especially Ground Support Equipment (GSE). Competition is not only in terms of quality and quantity but also in terms of service (Brekke et al., 2018). Considering the increasingly prominent services, it is not surprising that service issues receive significant attention and are frequently discussed, both by the public and management, both specifically and in relation to organizational activities (Minbaeva, 2018). Air transportation services and the demand for the aviation services industry for passenger, goods, and postal transportation globally show an increasing trend from year to year (Goyal et al., 2021). In recent years, the number of users of air transportation services in Indonesia has increased, according to data from the Ministry of Transportation (Nwaogbe et al., 2021; Stecenko & Parkhimovich, 2020).

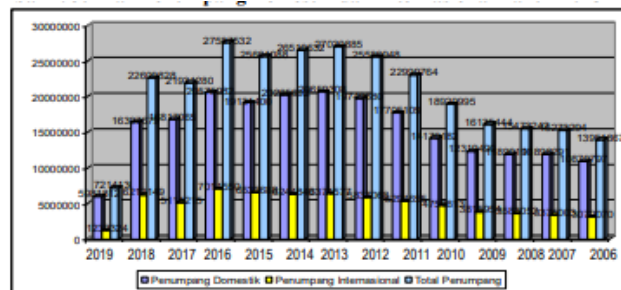


Figure 1. Amount Passenger Domestic And International Year 2015 – 2019

Based on Figure 1, in 2015 the number of domestic flight passengers in Indonesia grew by 168.8 million, an increase of 2.7 compared to 2014. Meanwhile, international passenger travel reached 34.33 million in 2015, an increase of 2.1.

Table 1. Passenger Which Leave From Airport Soekarno -Hatta Year 2006-2019

Year	Domestic Passenger	International Passenger	Total Passenger	Growth
2019	5,981,812	1,232,324	7,214,136	-213%
2018	16,397,679	6,212,149	22,609,828	3%
2017	16,817,065	5,114,215	21,931,280	-26%
2016	20,575,982	7,011,550	27,587,532	4%
2015	19,131,400	6,532,688	25,664,088	2%
2014	20,265,692	6,244,840	26,510,532	-2%
2013	20,659,308	6,371,577	27,030,885	6%
2012	19,749,880	5,837,068	25,586,948	11%
2011	17,705,109	5,294,655	22,999,764	21%
2010	14,170,182	4,759,813	18,929,995	17%

Based on Table 1, can known amount passenger Good passenger domestic And amount passenger international in period time 10 year Which started from year 2010 until year 2019 (until the month May) Which leave from port Air Soakernao-Hatta Jakarta amount highest on year 2016 with a total of 27,587,532 passengers, an increase of 4% from the previous year in 2015 which amounted to 25,664,088, which means that the development of 25 means that between 2015 and 2016 it increased by 2%, and the lowest was in 2019 which amounted to 7,214,136 until May which amounted to 7,214,136 or decreased by 21.3% seen from the development per month in 2019 the development was very slow, many factors

influenced the development of the number of passengers, both domestic and international passengers, one of which was the very expensive ticket prices starting at the beginning of the month of 2019.

The ground handling services sector, coupled with the development of the aviation industry and intense competition in the aviation industry, both nationally and internationally, has led to a demand for reliable, high-quality, and professional ground handling services (Faiyetole, 2018). These services include pre-flight services (pre-flight services), in-flight services, and post-flight services (Anggrayni et al., 2020; Raju & Priya, 2019). One form of aviation service is ground handling services, which include the handling of passengers, baggage, cargo, and mail (Kovynyov & Mikut, 2019; Türeli et al., 2019). This service is provided before and after the flight (pre- and post-flight). A company that provides ground-handling services at airports in Jakarta. flight activities in the airport area Good domestic flights both domestic and international. To improve the quality of the best service in providing ground handling services for its customers, Ground handling service company PT. Jasa Angkasa Semesta is also faced with several problems related to its operational activities, especially Human Resources (HR). One of the problems that often occur in an organization or company is human resources. In this case, the workforce or employees play a role in the development of the company, so that employees are given supervision or company attention, especially job satisfaction by providing motivation so that employees work effectively, efficiently, and professionally, guided by the company's operational standards. Employee job satisfaction includes satisfaction with workload, compensation, promotion, supervision (supervisor), and coworkers.

This is in accordance with (Robbins, 2015), who stated that indicators of job satisfaction can be seen from satisfaction with the job itself, satisfaction with the rewards of the job, promotion opportunities, satisfaction with supervision from superiors, and satisfaction with colleagues. Work. Equipment facilities are required for the service. Aircraft ground service support, various types of vehicles/equipment models that operate in the aircraft apron (parking) area. All of this equipment has its own function, which is needed as supporting equipment for aircraft ground services. is also commonly called Ground Support Equipment (GSE). The problem that is most frequently encountered by the service division consists of maintenance, customer service, and documentation staff. Soekarno-Hatta Airport is currently not just an airport, but also an area that can be used for fostering creativity in the digital technology industry. This airport boasts various high-tech and modern facilities, and the ground handling company is developing passenger service facilities. PT. Jasa Angkasa Semesta is demonstrating this commitment by improving its ground support equipment and facilities to ensure effective and efficient service, particularly Ground Support Equipment (GSE). This ensures that ground support equipment can be used effectively.

The occurrence of problems in three parts has the potential to cause dissatisfaction with the services provided by ground handling companies. For example, in terms of capability, if there are errors in data input or adjustments to maintenance scheduling. This can result in additional costs and time. Additional improvements are required. From an attitude perspective, there are often delays in data processing, resulting in reminders from customers and displays of emotion when serving customers, such as when customers complain or submit many requests regarding documents and others. Regarding appearance, employees often do not appear in polite, appropriate clothing and do not smile enough. serve customers. The element of attention is evident, among other things, when employees ignore complaints and additional requests from customers. The minimal aspect of accountability is evident in the attitude of passing the blame when mistakes occur.

PT. Jasa Angkasa Semesta as a ground handling has various types of services, one of which is ramp handling which is a unit to provide services in the Apron section (Apron Service) which includes loading and unloading services , cargo and mail on the plane based on load instructions , recording stock for maintenance of unit load services (ULD) owned by airlines , the objectives to be achieved with this ramp handling include safety , regularity , OTP (on Time Performance). This is because there are many

GSE equipment at PT. Jasa Angkasa Semesta, it requires control and maintenance that is Good In order for the equipment to function optimally and support ground handling operational activities , skills and abilities are required so that the effectiveness of GSE equipment can operate effectively and efficiently. However, many obstacles still occur in GSE equipment, which are in the form of maintenance schedule activities. This is based on audits frequently conducted by all airlines handled by PT. Jasa Angkasa Semesta, Inventory maintenance data plays a very important role in answering every audit conducted by airlines.

The results of the observations in the field show that not all officers understand the function of aircraft ground service support equipment, and the function of the support equipment makes employees choose the wrong tools. Moreover, there is a lack of reliable Ground Support Equipment (aircraft ground service support equipment). Outdated and old equipment, lacking certification, and operational fitness from regulators. Several factors influence the performance of employees in land-handling service companies, including quality, education and training, professionalism, and facilities. and the reliability of Ground Support Equipment, which includes facilities for supporting employee work equipment.

Problem Identification: Based on the background of the problem above, the following problems were identified:

- 1) Competence between employees has not been measured,
- 2) Competence between employees has not been running well
- 3) Company supervision of employee job satisfaction, especially promotions, has not been implemented promotion, allowances, and bonuses weak supervision of the management of PT. Jasa Angkasa Semesta in improving company services
- 4) Limited facilities for supporting equipment for good service
- 5) Weak employee creativity so that GSE equipment cannot be used effectively.

Research Objectives, this research aims to: To determine the influence of employee competence, effectiveness of Ground Support Equipment (Aircraft Ground Service Support Equipment) and job satisfaction. on job satisfaction in PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport Jakarta?, To determine the effect of employee competence and the effectiveness of Ground Support Equipment (Aircraft Ground Service Support Equipment) on job satisfaction at PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport Jakarta? To determine the effect of job satisfaction on service quality at PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport Jakarta, To determine the effect of Job Satisfaction on Service Quality, To determine the effect of Ground Support Equipment Effectiveness on Service Quality Through Job Satisfaction.

## 2. Literature Review

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According to [Wibowo \(2016\)](#), competence is the ability to carry out or perform a job or task based on skills and knowledge and supported by the work attitude required by the job. According to Spencer and Spencer in [Wibowo \(2016\)](#), competence is the basic foundation of a person's characteristics and indicates how to behave or think, adapt to situations, and provide support for a long period of time.

Meanwhile, according to ([Armstrong, 2016](#))), competence refers to the behavioral dimension of a role or behavior that a person needs to carry out his work satisfactorily. [Moeheriono \(2017\)](#) stated that competence is a basic characteristic of a person that identifies how to think, behave and act and draw conclusions that can be carried out and maintained by a person over a certain period of time.

Meanwhile, according to [Rivai and Sagala \(2015\)](#), competence is a fundamental characteristic possessed

by a person that has a direct influence on or can predict excellent performance. Based on several expert opinions that have been discussed, it can be concluded that competence is a basic characteristic possessed by an individual or employee, namely the ability to carry out a job/task based on ability, skills, knowledge, and ways of thinking supported by work attitudes in carrying out and completing a job.

According to Ravianto in [Arikunto \(2015\)](#), effectiveness is how well a job is done and the extent to which people produce output according to expectations. This means that if a job can be completed according to plan, both in terms of time, cost, and quality, then it can be said to be effective. [Andri and Wahyuni \(2016\)](#) defines effectiveness as the relationship between output and objectives, meaning that effectiveness is a measure of how far the level of output, policies, and procedures of an organization achieve stated objectives. If we examine it, effectiveness comes from the root word effective, which means: (1). There is an effect (influence, result, impression) such as effective, efficacious; powerful; (2). The use of methods/ways, means/tools in carrying out activities so that they are effective (achieve optimal results).

[Gunawan \(2014\)](#) stated his opinion that effectiveness is the ability to choose the right goals or the right tools to achieve the goals that have been set. Furthermore, [Arikunto \(2015\)](#) stated that: “Effectiveness is the reach of a program’s efforts as a system with certain resources and means to fulfill the goals and objectives without paralyzing the means and resources and without placing unreasonable pressure on their implementation.”

According to [Hoang et al. \(2016\)](#), effectiveness is an assessment of the performance of individuals, groups, and organizations. The closer their performance is to the expected performance (standard), the more effective the assessment. Based on the above description, work effectiveness can be interpreted as an effort to complete a job on time. The time was in accordance with what was determined, and the results were in accordance with the desired standards. In its implementation, attention is paid to how to complete it and the costs incurred by an organization/agency.

Ground handling comes from the words “ground” and “handling.” “Ground” means land or on land, in this case, at an airport. “Handling” comes from the root word “handle,” which means “handle.” “To handle” means to handle and perform a specific task consciously. “Handling” means to handle or provide services (or to provide services). Therefore, we often encounter the term “Ground Services” (Ground Services or airport services) ([Bahar, 2020; Durmaz et al., 2021](#)).

The term ground handling refers to an airline company’s activity related to handling or providing services to passengers and their luggage, cargo, mail, and equipment to support aircraft movement on the ground and the aircraft itself while at the airport. Air handling for both departures and arrivals. Simply put, ground handling or ground operations are the knowledge and skills involved in handling aircraft on the apron, passengers and their baggage at the terminal, and cargo and mail in the cargo area ([Studic et al., 2017](#)).

The scope and limitations of ground handling work are in the Pre-Flight and Post-Flight stages, namely, handling passengers and aircraft while at the airport. Technically and operationally, ground handling activities... handling started on moment taxi plane (parking stand), machine aircraft Already turned off, wheel Once the aircraft has been blocked, the aircraft door has been opened, and passengers have been allowed to disembark, the ground staff are authorized to take over the duties of the Pilot in Command (PIC) and his crew ([Szabo et al., 2021](#)). This phase is called Arrival Handling. passengers). On the other hand, the activities or work the ground staff’s role ends when the aircraft is ready for takeoff, the aircraft doors are closed, the engines are started, and the wheels are blocked off. The responsibility for this phase (In Flight) rests with the Pilot in Command and his cabin crew. This phase is known as Departure Handling. Objects handled by ground staff essentially include passengers (pax), passenger

luggage (baggage), shipments (cargo), postal items (mail), ramps, and aircraft. The scope or object of the activity must essentially refer to the rules set by the IATA Airport Handling Manual, 810 Annex, which stipulates 14 standard service sections or 14 activity items (“IATA Airport Handling Manual, 810 Annex A”, 2004).

In essence, there are three main components for running an aviation business, especially ground handling. The three components are airlines, their transportation facilities in the form of aircraft, airports, and consumers (passengers and shippers). These three main components are individually related to other subunits. has no small role. Simply put, ground handling activities or tasks can only be carried out if there is an airline, aircraft, airport, and potential passengers. Without these, ground handling activities would not exist at all. The two directly related components are the airline and the airport. In general, an airport must have minimal facilities and infrastructure, namely, an aircraft runway, runways, air traffic control towers, and terminal buildings. Based on area, airports can be grouped into two parts: the land and air sides. Specifically, for terminal buildings, airports can be divided into three areas: public, restricted, and non-public (Rezaei et al., 2018).

The International Water Transport Association (Association Transportation Air International; abbreviated IATA) is an international trade organization consisting of airlines. The IATA is headquartered in Montreal, Canada. Its member airlines are given special leeway to consult prices between fellow members through this organization (Abrantes et al., 2021). The IATA is also responsible for running regulations on the delivery of dangerous goods and publishing guidelines Regulation Goods Dangerous IATA (IATA dangerous goods regulations). Besides That There is Also IATA Airport Handling Manual, 810 Annex A, 2004, which stipulates 8 standard service sections, as follows: Section 1: Representation, Administration & Supervision, Section 2: Passenger Services, Section 3: Ramp Services, Section 4: Load Control, Communication & Flight Operations, Section 5: Cargo & Mail Services, Section 6: Support Services, Section 7: Security, Section 8: Aircraft Maintenance (“IATA Airport Handling Manual, 810 Annex A”, 2004).

Ground Support Equipment is commonly found at airports and is sometimes located in terminal service areas. This equipment is used to serve aircraft before departure and after their arrival at the airport. It is called Ground Support Equipment because this ground handling equipment can support aircraft operations while on the ground. The general functions of this equipment include ground power operations, aircraft mobility, and loading operations (passengers and cargo). The effectiveness of aircraft ground service support equipment (GSE) is the ability to choose the right goal or use of methods/ways, means/tools in carrying out activities so that they are effective (achieving optimal results) that are appropriate for achieving the predetermined goals (Handoko, 2015).

According to Luthans (2011), job satisfaction is a positive or pleasant emotional state resulting from a job or work experience. According to Wibowo (2016), job satisfaction is a person’s perspective, either positive or negative, of their work. According to Robbins (2015), job satisfaction is an individual’s general attitude toward their work. A person with a high level of job satisfaction demonstrates a positive attitude toward their work. Meanwhile, those who are dissatisfied show a negative attitude.

Herzberg states that the factors that bring satisfaction are achievement, recognition, the work itself, responsibility, and progress (Armstrong, 2016 in (Handoko, 2015)). Arifin (2011) define job satisfaction as a positive and pleasurable emotional state resulting from the evaluation of one’s work or work experience. Kothadiya (2016) defined job satisfaction as an affective or emotional response to various aspects of work. From the statements of several experts above regarding the meaning of satisfaction at work, researchers can conclude that job satisfaction is a positive attitude shown by employees towards their work, so that employees can work happily without feeling burdened by the work and provide optimal results for the company.

According to [Tjiptono \(2015\)](#), quality is a dynamic condition related to products, services, people, processes, and environments that meet or exceed expectations. [Sekaran and Bougie \(2016\)](#) states that quality can be viewed from the perspective of both producers and consumers. From the producer's perspective, quality is a product whose production meets the specifications or standards set by the company.

According to [Hardiansyah \(2011\)](#), service is basically an activity or benefit that offered by something party to party other And on in essence No tangible as well as No results in ownership, the production process may not be associated with a physical product.

According to [Hashim and Wok \(2015\)](#), the general definition of public services according to the Decree of the Minister of Administrative and Bureaucratic Reform Number: 63 / KEP / M.PAN/7/2003 is all service activities that implemented by public service providers as an effort to fulfill the needs of service recipients and implementers of statutory provisions. The implementation of public services is based on the general principles of good governance, including legal certainty, transparency, responsiveness, justice, effectiveness and efficiency, responsibility, accountability, and non-abuse of authority.

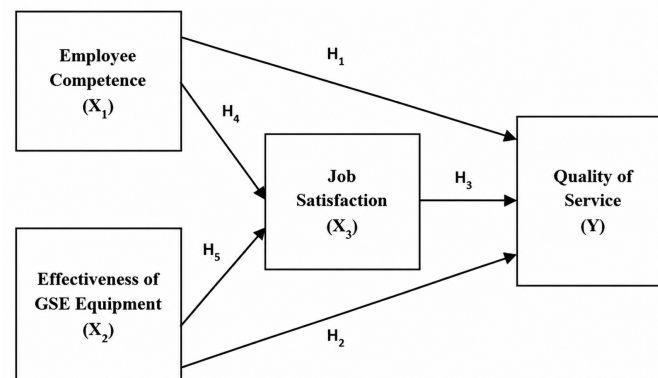


Figure 2. Research Framework

Based on Figure 2, this model illustrates the relationships between employee competence ( $X_1$ ), the effectiveness of GSE equipment ( $X_2$ ), job satisfaction ( $X_3$ ), and the quality of service ( $Y$ ). The arrows indicate the hypothesized paths:  $H_1$  represents the influence of employee competence on job satisfaction,  $H_2$  signifies the effect of GSE equipment effectiveness on job satisfaction,  $H_3$  reflects how job satisfaction impacts the quality of service,  $H_4$  shows the effect of employee competence on the quality of service, and  $H_5$  demonstrates the influence of GSE equipment effectiveness on the quality of service.

### 3. Methodology

This study was designed using a descriptive method with a quantitative approach. Descriptive statistics were used to explain the phenomena in the research data. Quantitative methods were used to explain the influence of the independent variables on the dependent variable. The research method used was a survey, collecting data through research instruments and distributing questionnaires to the customers. The results were processed using a software program. SPSS 24.00 for knowing the relationship between variables exists. This method was used to test the relationship between two independent variables and one dependent variable ([Sugiyono, 2016](#)).

## 4. Results and Discussion

All questions in the research instrument in this study are reliable, meaning that the questions in this study produce consistent answers over time, and each question can be used in this study. The Kolmogorov-Smirnov test showed that the significance of all variables was above the  $\alpha$  limit (standard error) of 0.05. The results show that the normality test results for each variable, namely  $X_1$ ,  $X_2$ ,  $X_3$ , and  $Y$ , are 0.549, 0.305, 0.787, and 0.984, respectively, all of which are greater than 0.05 ( $p > 0.05$ ). This proves that the data from the variables studied have a normal distribution and can be used to test other classical assumptions.

Table 2. Test Partial Variables Quality Service

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	.457	1.254		.364	.718
	Competence Employee	.262	.050	.191	5.207	.000
	Effectiveness Equipment GSE	.248	.034	.136	5.428	.002
	Satisfaction Work	.489	.035	.804	19.942	.000
<i>a. Dependent Variable: Quality Service</i>						
Source: Data exercise Questionnaire (SPSS Version 24.00) Year 2020						

Based on Table 2, the  $t$ -test for testing the significance of each independent variable, namely employee competence, GSE equipment effectiveness, and job satisfaction simultaneously (together) affect the quality of service of the Operations Department at PT Jasa Angkasa Semesta Soekarno-Hatta Airport Jakarta. In this case, the basis for decision-making is by comparing the  $t$ -table with the calculated  $t$ .

The data above is known  $dk$  (degrees of freedom) =  $45 - 4 = 41$  with a confidence level of  $\alpha = 0.05$ , then the  $t$ -table is 1.682. The guidelines used to accept or reject the hypothesis are as follows:

- $H_a$  is accepted if  $t_{\text{count}} > t_{\text{table}}$  or the  $p$ -value in the sig. column  $< \alpha = 0.05$ , meaning that the independent variable has an influence on the dependent variable.
- $H_0$  is accepted if  $t_{\text{count}} < t_{\text{table}}$  or the  $p$ -value in the sig. column  $> \alpha = 0.05$ , meaning that the independent variable has no influence on the dependent variable.

Based on the estimation results in the previous table, the results of the statistical  $t$ -test for each independent variable are as follows:

### Competence Employee

The test results using the SPSS\_24.00 program obtained a statistical  $t$ -value for employee competency of 5.207 and a probability of 0.000. The  $t$ -table value for the number of observations of 45 with a significance level of 5% and degrees of freedom ( $dk$ ) =  $45 - 4 = 41$  obtained 1.682. Therefore, it is obtained that the  $t$ -statistic is greater than the  $t$ -table or  $5.207 > 1.682$ , and can also be seen in the probability value is smaller than the significance level ( $\alpha$ ) of 5% or  $0.000 < 0.05$  then it can be concluded that the halal label significantly affects the quality of service with the conclusion  $H_0$  is rejected and accepts  $H_a$ . This indicates that employee competency has a real influence on purchasing decisions with a 95% confidence level or a 5% error rate. The Beta value of employee competency is 0.457, meaning that 45.7% of employee competency affects the quality of service, while the rest is influenced by other factors.

### Effectiveness Equipment GSE

The test results using SPSS 24.00 obtained a statistical  $t$ -value for the effectiveness of the GSE equipment of 5.428 and a probability of 0.002. While the  $t$ -table value for the number of observations of 45 with

a significance level of 5% and degrees of freedom ( $dk$ ) = 45 - 4 = 41 obtained 1.682. Therefore, it is obtained that the  $t$ -statistic is greater than the  $t$ -table or  $5.428 > 1.682$ , and it can also be seen that the probability value is smaller than the significance level ( $\alpha$ ) of 5% or  $0.001 < 0.05$ . It can be concluded that the effectiveness of GSE equipment significantly affects the quality of service, with the conclusion that  $H_0$  is rejected and  $H_a$  is accepted. This indicates that the effectiveness of the GSE equipment has a real influence on the quality of service with a 95% confidence level or a 5% error rate.

The beta value for the GSE equipment effectiveness variable was 0.248, indicating that the GSE equipment effectiveness variable had a 24.8% impact on service quality. The remainder was influenced by factors not examined in this study.

### Satisfaction Work

The test results using the SPSS\_24.00 program obtained a statistical  $t$ -value for job satisfaction of 19.942, and a probability of 0.000. The  $t$ -table value for the number of observations of 45 with a significance level of 5% and degrees of freedom ( $dk$ ) = 45 - 4 = 41 obtained 1.682.

So it is obtained that the  $t$ -statistic is greater than the  $t$ -table or  $19.942 > 1.682$ , and this can also be seen in the probability value is smaller than the significance level ( $\alpha$ ) 5% or  $0.000 < 0.05$  so can it was concluded that price significantly affects service quality, and  $H_0$  is rejected and  $H_a$  is accepted. This indicates that price has a real influence on service quality with a 95% confidence level or a 5% error rate.

The beta value for job satisfaction is 0.489, meaning that job satisfaction contributes 48.9% to service quality. The remainder was influenced by factors not examined in this study.

### Analysis Stage Two

In analysis stage one, this effect moderation with equation is tested as follows:

$$Y = a + b_1X_1 + b_2X_2 + e_2$$

#### a. Test Determination Variables Satisfaction Work

Table 3. Test Determination Variables Satisfaction Work

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.866	0.751	0.739	4.45169

From Table 3 seen that on model regression linear multiple for equality first, that is:

$$Y = a + b_1X_1 + b_2X_2 + e_2$$

shows the coefficient of determination value of 0.751 or 75.1%, which means that the contribution of the employee competency variable and the effectiveness of GSE equipment to the job satisfaction of the Operations Department at PT Jasa Angkasa Semesta Soekarno-Hatta Airport, Jakarta is as big as 75.1%, whereas the remaining 24.9% is influenced by other factors such as motivation, professionalism, reliability, and so on.

#### b. Test ANOVA Variables Satisfaction Work

Table 4. Test ANOVA Variables Satisfaction Work

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2506.462	2	1253.231	63.238	0.000
Residual	832.338	42	19.818		
Total	3338.800	44			

Based on Table 4, it can be seen that the  $F$ -count value is 63.238 with a significance value of 0.000000. The  $F$ -table value for the number of observations is 45 with an alpha level of 5% and  $k$  or the total number of variables (independent and dependent) is 4, so  $N_1 = k - 1 = 4 - 1 = 3$ ,  $N_2 = n - k = 45 - 4 = 41$  is 2.83. So it is obtained that the  $F$ -count is greater than the  $F$ -table or  $63.238 > 2.83$  and can also be seen in the probability value is smaller than the significance level ( $\alpha$ ) of 5% or  $0.000000 < 0.05$ , then it can be concluded that the variables of employee competence and effectiveness of GSE equipment simultaneously (together) affect job satisfaction of the Operations Section at PT Jasa Angkasa Semesta Soekarno-Hatta Airport Jakarta with the conclusion that  $H_0$  is rejected and  $H_a$  is accepted.

### c. Partial Test Variables Quality Service

Table 5. Test Partial Variables Quality of Service

Model	B	Std. Error	Beta	$t$	Sig.
(Constant)	4.630	3.473		1.394	0.171
Competence Employee	0.330	0.142	0.707	7.962	0.000
Effectiveness Equipment GSE	0.406	0.138	0.261	3.945	0.005

Based on the Table 5, it can be seen that the  $t$ -test for testing the significance of each independent variable, namely employee competence and GSE effectiveness, simultaneously (together) affect the job satisfaction of the Operations Department at PT Jasa Angkasa Semesta Soekarno-Hatta Airport Jakarta. In this case, the basis for decision-making is by comparing the  $t$ -table with the calculated  $t$ .

The data above is known  $dk$  (degrees of freedom) =  $45 - 4 = 41$  with a confidence level of  $\alpha = 0.05$ , so the  $t$ -table is 1.682. The guidelines used to accept or reject the hypothesis are as follows:

- $H_a$  is accepted if  $t_{\text{count}} > t_{\text{table}}$  or the  $p$ -value in the sig. column  $< \alpha = 0.05$ , means that the independent variable has an influence on the dependent variable.
- $H_0$  is accepted if  $t_{\text{count}} < t_{\text{table}}$  or the  $p$ -value in the sig. column  $> \alpha = 0.05$ , means that the independent variable has no effect on the dependent variable.

Based on the estimation results in the previous table, the results of the statistical  $t$ -test for each independent variable are as follows:

1. Competence Employee Based on Table 6, the test results using the SPSS\_24.00 program obtained a statistical  $t$ -value for employee competency of 7.962 and a probability of 0.000. The  $t$ -table value for the number of observations of 45 with a significance level of 5% and degrees of freedom ( $dk$ ) =  $45 - 4 = 41$  obtained 1.682. Therefore, it is obtained that the  $t$ -statistic is greater than the  $t$ -table or  $7.962 > 1.682$ , and can also be seen in the probability value is smaller than the significance level ( $\alpha$ ) of 5% or  $0.000 < 0.05$  then it can be concluded that the halal label significantly affects the quality of service with the conclusion  $H_0$  is rejected and accepts  $H_a$ . This indicates that employee competency has a real influence on purchasing decisions with a 95% confidence level or a 5% error rate. The Beta value of employee competency is 0.330, meaning that 23.0% of employee competency affects the quality of service, while the rest is influenced by other factors.

2. Effectiveness Equipment GSE Based on Table 6, the test results using SPSS 24.00 obtained a statistical  $t$ -value for the effectiveness of the GSE equipment of 3.945 and a probability of 0.002. While the  $t$ -table value for the number of observations of 45 with a significance level of 5% and degrees of freedom ( $dk$ ) = 45 - 4 = 41 obtained 1.682. Therefore, it is obtained that the  $t$ -statistic is greater than the  $t$ -table or 3.945 > 1.682, and it can also be seen that the probability value is smaller than the significance level ( $\alpha$ ) of 5% or 0.001 < 0.05. It can be concluded that the effectiveness of GSE equipment significantly affects the quality of service, with the conclusion that  $H_0$  is rejected and  $H_a$  is accepted. This indicates that the effectiveness of GSE equipment has a significant impact on service quality, with a 95% confidence level or a 5% margin of error. The Beta value of the GSE equipment effectiveness variable is 0.406, meaning that the GSE equipment effectiveness variable has an impact on service quality of 40.6%. The remainder was influenced by other factors not examined in this study.

Table 6. Results Test Significance Influence Direct And No Direct

Indirect Effect	Path Coefficient ( $p_{ij}$ )	Error Standard (SBI)	Z count	t count	Conclusion
$X_1$ to $Y$ through $X_3$	0.262	0.050	2.257	1.682	Significant
$X_2$ to $Y$ through $X_3$	0.248	0.034	28.804	1.682	Significant

### Analysis Stage I ( $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e_1$ )

#### 1. Influence Competence Employee to Quality Service

The results of this study show the influence of employee competence on the quality of service of the Operational Section of PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport, Jakarta is 0.262 with a standard error of 0.000 and the influence is significant with a calculated  $t$  value of 5.207 which is greater than the  $t$  table, then  $H_0$  is rejected and  $H_1$  is accepted, meaning that there is an influence between employee competence and the quality of service of the Operational Section at PT Jasa Angkasa Semesta Soekarno-Hatta Airport, Jakarta.

#### 2. Influence Effectiveness Equipment GSE to Quality Service

The results of this study show the effectiveness of GSE equipment on the quality of service of the Operational Section of PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport, Jakarta is 0.248 with a standard error of 0.002 and its influence is significant with a calculated  $t$  value of 5.428 which is greater than the  $t$  table, then  $H_0$  is rejected and  $H_1$  is accepted, meaning that there is an influence between the effectiveness of GSE equipment on the quality of service of the Operational Section of PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport, Jakarta.

#### 3. Influence Satisfaction Work to Quality Service

Based on the research results, the influence of job satisfaction on the service quality of the Operational Section of PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport, Jakarta, is 0.489 with a standard error of 0.000 and the influence is significant with a  $t$ -value of 19.942. If is greater than the  $t$  table, then  $H_0$  is rejected and  $H_1$  is accepted, meaning that job satisfaction influences the quality of service of the Operational Section of PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport, Jakarta.

From the above explanation of the direct influence between the variables of employee competence, effectiveness of GSE equipment, and job satisfaction on the quality of service, it can be concluded that the quality of service of the Operational Section of PT. Jasa Angkasa Semesta at Soekarno-Hatta Airport Jakarta, has the following order: job satisfaction of 0.489 or 48.9%, employee competence of 0.262 or 26.2% and effectiveness of GSES equipment of 0.262 or 26.2%. The results of the study that when the quality of employee service can be seen first because of job

satisfaction, second can be seen from employee competence which reliable in do his duties and third by looking effectiveness equipment GSE in providing services to aircraft, passengers and cargo.

## Analysis Stage II

### 1. Indirect Effect Competence Employee Through Job Satisfaction

Based on the results of the study that influence no direct employee competence to the quality of service Part Operational PT. The Service Space Universe in Soekarno-Hatta International Airport, Jakarta, through job satisfaction, is 0.330, with a standard error of 0.000, and its influence is significant, with  $t_{\text{count}} = 2.257$ , more big compared to with  $t_{\text{table}} = 1.682$ , so  $H_0$  rejected and  $H_4$  is accepted, meaning there is an indirect influence on employee competence quality of service through job satisfaction.

### 2. Indirect Effect GSE Equipment Effectiveness Through Job Satisfaction

Based on the results, the influence of the effectiveness of GSE equipment on service quality through job satisfaction is as large as 0.248, and its influence is significant with a calculated  $t$  value of 28.804, which is greater than the  $t$  table value of 1.682; therefore,  $H_0$  is rejected and  $H_5$  accepted, meaning that there is an indirect influence of the effectiveness of GSE equipment on service quality through job satisfaction.

From the explanation above, the indirect influence of employee competency variables on service quality through job satisfaction and GSE equipment effectiveness variables on service quality through job satisfaction can be concluded that employee competency contributes to job satisfaction due to the abilities that employees have in completing work because they can meet the company's targets and objectives that have been determined by employees. This will ensure that all GSE equipment can be used effectively and time efficiently, thereby improving the quality of service of the Operations Department at PT Jasa Angkasa Semesta Soekarno-Hatta Airport, Jakarta.

## 5. Conclusions

Direct influence employee competency, GSE equipment effectiveness and satisfaction work on service quality as following: regression results show that employee competence influences service quality by 0.262 with a standard error of 0.000, and the effect is significant with a calculated  $t$  value of 5.207 which is greater than the  $t$  table, so  $H_0$  is rejected and  $H_1$  is accepted. Furthermore, the effectiveness of GSE equipment has an influence of 0.248 with a significant effect indicated by a calculated  $t$  value of 5.428 which is greater than the  $t$  table, so  $H_0$  is rejected and  $H_1$  is accepted. Meanwhile, job satisfaction has the largest influence on service quality, namely 0.489 with a standard error of 0.000 and a significant  $t$ -value of 19.942, so  $H_0$  is rejected and  $H_1$  is accepted. Thus, the order of influence on service quality is job satisfaction at 48.9%, employee competence at 26.2%, and effectiveness of GSE equipment at 26.2%.

The indirect influence shows that employee competence affects service quality through job satisfaction by 0.330 with a standard error of 0.000 and a calculated  $t$  value of 2.257 which is greater than the  $t$  table value of 1.682, so  $H_0$  is rejected and  $H_4$  is accepted. In addition, the effectiveness of GSE equipment affects service quality through job satisfaction by 0.248 with a significant calculated  $t$  value of 28.804 which is greater than the  $t$  table value of 1.682, so  $H_0$  is rejected and  $H_5$  is accepted. These results indicate that employee competency and the effectiveness of GSE equipment contribute to improving job satisfaction, which in turn enhances service quality in the Operations Department at PT Jasa Angkasa Semesta Soekarno-Hatta Airport, Jakarta.

## **Acknowledgements**

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The authors would like to extend their sincere gratitude to the Institute of Transportation and Logistics Trisakti, Jakarta, Indonesia, for their continuous support throughout this research. The authors also thank the Garuda Indonesia pilots for their participation and willingness to share their experiences through the survey. Additionally, the authors appreciate the team behind SPSS software for assisting in the data analysis process.

## **Author Contributions**

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HK conceptualized the study, conducted the data analysis, and wrote the manuscript. VH assisted with data collection, provided expertise in safety culture, and reviewed the manuscript. Both authors collaborated in interpreting the results and ensuring the accuracy and integrity of the research findings.

## **Conflicts of Interest**

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The authors declare that there is no conflict of interest regarding the publication of this study. This research was conducted independently, and no financial or personal relationships influenced the results or interpretation of the findings.

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