THE INFLUENCE OF GROUND HANDLING OFFICER PERFORMANCE ON K3 (OCCUPATIONAL HEALTH AND SAFETY) AT MUTIARA SIS AL-JUFRI HAMMER AIRPORT

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ABSTRACT
This study focuses on Mutiara Sis Al-Jufri Palu Airport in Central Sulawesi. Its objective is to assess how Ground Handling officers' performance impacts Occupational Health and Safety (OHS) at the airport, thereby guaranteeing the efficacy of flight operations. Quantitative research methodology is the approach that is employed. Data were gathered using a research design that included questionnaires and observation. At Mutiara Sis Al-Jufri Airport, 43 ground handling officers made up the research population, and 43 responses made up the sample. The findings demonstrated that the degree of safety, security, and health at the airport was significantly impacted by the performance of ground handling officers. Given that variable X has a positive regression coefficient value of 0.840, both a rise and a fall in ground handling officers' performance will result in a 0.840 increase in K3 (Occupational Health and Safety). The t-count value of 18.329 > t-table 1.681 and the significance value of 0.000 <0.05 are displayed in the t-test findings. We conclude that improving ground handling officers' comprehension and awareness of safety and security could enhance OHS (Occupational Health and Safety) at Mutiara Sis Al-Jufri Airport Palu.

Keywords: Performance, Ground Handling, Health, Safety, Work

1. INTRODUCTION

The increasing demand for safe and time-efficient transportation services has led to a rise in the popularity of air transport. As air traffic grows, it is essential to have airport infrastructure that can provide adequate service for air transportation (Jansen, 2017). Air transport has become the most popular means of transporting people and goods due to its time-saving and energy-efficient nature. Consequently, many people opt for air travel because of its efficiency.

Airports are regulated environments where all facilities are governed by applicable regulations. This regulation is crucial for the safety and comfort of every flight, as even minor errors can have fatal consequences in aviation. Airports must adhere to certain standards outlined in KP 326 of 2019 regarding Technical and Operational Standards for Civil Aviation Safety Regulations in order to promote flight safety and security.

Mutiara Sis Al-Jufri Airport is a class 1 UPBU (Airport Management Unit) operating in Palu, Central Sulawesi, and was previously managed by the Donnggala District Government. In 1954, a small airfield was constructed by the local government and the Donggala Public Works Department, named "MASOWU," which in the local Kaili language means "Dusty," reflecting the dusty conditions around the airfield when aircraft landed. In 2014, The Minister of Transportation Decree No. KP 178 of 2014 states that the major airport in Central Sulawesi has officially changed its name from Mutiara Airport to Mutiara Sis Al-Jufri Airport. Sis Al-Jufri is the name given to a well-known person from Central Sulawesi who played a significant role in community education and opposition to Indonesian colonization. The Ministry of Finance's Ministry of Transportation Regulation No. 273/KMK.05/2017, dated March 13, 2017, classified Mutiara Sis Al-Jufri Airport as a BLU (Public Service Agency).

Mutiara Sis Al-Jufri Airport has been increasingly important in facilitating air travel in Eastern Indonesia as a result of the expansion of aircraft routes in Indonesia. As an airport management unit, it is responsible for providing aviation services and must have facilities that ensure the safety and security of flight operations and services for passengers.

Flight safety and security involve a series of interrelated activities that impact aircraft operations, aviation security, and personnel safety (Aeroasia, 2016). These aspects are crucial for flight operations and are

governed by the state and managed by the government within a unified system of civil aviation safety and security services.

Each airport management unit is responsible for providing facilities that meet safety and security requirements and delivering aviation services according to established standards. The readiness of land-side and air-side infrastructure must be optimized to accommodate increased aircraft traffic and ensure orderly, smooth, and safe operations. This includes managing ground handling operations.

Ground handling is crucial in providing passenger services at airport terminals, from check-in to boarding and baggage claim. It has a big impact on raising employee performance and service quality at airports and airlines (Yulianti, 2019). However, ground handling activities carry risks of incidents and accidents, impacting airside operations, including operational vehicles and aircraft.

Ground handling proficiency is a crucial component of civil aircraft operations. Effective safety management relies on a safety culture that minimizes both minor risks (e.g., small damage to aircraft, equipment, and baggage) and major risks. Successful safety management depends on a robust safety culture (Morais & Silva, 2023).

Ramp areas, where various aircraft support activities occur, pose significant hazards, especially if involved parties lack consistent safety awareness. Risks increase if routine practices rely on habits rather than adhering to manuals. Therefore, ramp area activities require special attention due to their direct impact on aircraft operations (Aeroasia, 2016).

To ensure safety in ramp area activities, personnel must have a unified safety mindset to ensure procedures and manuals are followed. Activities such as aircraft towing, fueling, passenger and cargo handling must be conducted safely. Effective communication among ramp personnel is crucial for success, requiring intensive and standardized practices (Aeroasia, 2016).

Among those working in the ramp area, only pilots and technicians receive safety and security training. Their knowledge is updated regularly to maintain awareness of ramp safety. Ramp safety training is vital due to the high-risk environment.

To enhance safety and security in airside operations, the Airport Movement Control (AMC) unit oversees aircraft servicing activities on the apron, ground handling personnel, and ground support equipment (GSE). Ground handling is critical for flight safety and must be conducted following established procedures, with personnel certified and trained in safety awareness. Regulations and SOPs are in place to prevent hazards, but non-compliance with these rules still occurs, necessitating performance evaluations to reduce work accident risks.

In recent years, the ground handling industry in Indonesia has seen significant improvements, with many companies upgrading equipment and enhancing training. This is reflected in improved safety standards set by the government and national aviation associations like INACA. Additionally, companies are focusing on technology development to increase operational efficiency and safety. Globally, the ground handling industry is also evolving, with stricter regulations and advanced technology improving safety and efficiency. Indonesia is competitive in this industry (Warta, 2016).

Considering the context and carrying out additional research on Mutiara Sis Al-Jufri Palu Airport's ground handling performance with the goal of enhancing it, the author intends to write a final project titled "THE IMPACT OF GROUND HANDLING PERFORMANCE ON OCCUPATIONAL HEALTH AND SAFETY (OHS) AT MUTIARA SIS AL-JUFRI PALU AIRPORT."

Based on the background provided, the problems can be identified as follows:

1. How does the performance of ground handling personnel affect Occupational Health and Safety (OHS) at Mutiara Sis Al-Jufri Palu Airport?
2. What is the level of performance of ground handling personnel in relation to Occupational Health and Safety (OHS) at Mutiara Sis Al-Jufri Palu Airport?.

2. METHODS

2.1 Theoretical Review

A. Performance

According to Mangkunegara, performance is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him (Mangkunegara, 2011).

According to PM 37 of 2021 concerning airport personnel, the competency development of airport personnel is carried out in the form of:

a. Education or training for the issuance of competency certificates
b. Refreshment
c. Socialisation, workshops, seminars and/or technical guidance aimed at improving airport safety, security, services, and environmental sustainability.

According to Nursam, performance is generally defined as a person's success in carrying out the tasks or work assigned to him (Nursam, 2017). According to Sutarwati, performance generally shows how well a worker completes their work according to standards within a certain period of time. Knowledge is gathered by science with the aim of answering the problems of everyday life faced by humans. The solution is basically to predict and control natural phenomena. To be able to predict and control something, we must master the knowledge that explains the event (Sutarwati, 2016).

B. Safety

Safety comes from the English word 'safety' and is usually always associated with a state of freedom from an accident or near-miss (Kuswana,

2014). So in essence, work safety is a condition that is safe and secure from suffering, damage, and loss in the workplace, both when using tools, materials, and machines in the processing process as well as maintaining and securing the place and work environment.

According to Law Number 1 of 2009 concerning aviation, aviation safety is the state of fulfilling safety requirements in the use of airspace, aircraft, airports, air transport, aviation navigation, as well as supporting facilities and other public facilities used safely.

Regulation of the Minister of Transportation Number 39 of 2019 defines aviation safety as a state of fulfilment of safety requirements in the utilisation of airspace, aircraft, airports, air transport, aviation navigation, as well as supporting facilities and other public facilities.

According to Minister of Transportation Regulation 93/2016, aviation safety is the responsibility of all stakeholders in the aviation sector. The drive to comply with and follow safety level standards must start at the highest level of management in each organisation.

Aviation safety is key for aviation service providers to contribute to fulfilling the country's interests. ICAO standards state that the top priority in aviation is the achievement of a safe system. Actions to achieve aviation safety must be supported by facts, data, and the public's perception of the elements required to achieve safety.

An acceptable level of safety risk affects the aviation safety system, which will decline if an accident occurs. Serious events and accidents can damage the good name of aviation service providers, the government, and the country. In serious events and accidents, human error contributes the most. Weaknesses in management functions are strongly associated with many of these errors.

C. Security

Security in the context of aviation, according to ICAO Annex 17, is the safeguarding of civil aviation against acts of unlawful interference. This goal is achieved through a combination of actions, human resources, and equipment (ICAO, 2020). The Law of the Republic of Indonesia Number 1 of 2009 concerning Aviation defines aviation security as a condition that provides protection to aviation from unlawful acts through the integrated use of human resources, facilities, and procedures.

According to Law Number 22 of 2022, which discusses corrections, it is explained that security is all forms of activities in the context of preventing, prosecuting, and restoring security and order disturbances carried out to create safe and orderly conditions in state detention centres and correctional institutions.

Meanwhile, according to Tarwoto and Wartonah, security is a state of safety and peace. Safety not only prevents pain or injury but can also make individuals safer in their activities, reduce stress, and improve overall health. From this, we can conclude that we are already in a safe class when we feel free and not in danger. Whereas security is a system of everything to achieve a safe state (Tarwoto and Wartonah, 2015),.

The main purpose of ICAO regulating international civil aviation security is to ensure the protection and safety of passengers, crew, ground personnel, the general public, aircraft, and airport facilities serving civil aviation against unlawful acts committed on the ground or in flight. To meet the standard level of security, security policies must be based on legal provisions applied by many entities within an aviation security structure, including aircraft operators, airport operators, air navigation service providers, police, law enforcement authorities, security service providers, and intelligence organizations.

D. Occupational Health and Safety

According to Permenkes No. 48 of 2016, occupational health and safety are all activities to ensure and protect the safety and health of employees through efforts to prevent occupational accidents and occupational diseases. Meanwhile, according to Permenaker RI No. 5 of 2018, occupational health and safety are all activities to ensure and protect the safety and health of workers through efforts to prevent occupational accidents and occupational diseases.

Leon C.Megginson's opinion in Mangkunegara is that the term safety includes both safety risk and health risk. In the field of employment, the two terms are distinguished. Occupational safety shows conditions that are safe from suffering, damage, or loss in the workplace (Sutedjo, 2018).

Meanwhile, according to Sedarmayanti, work safety is the supervision of people, machines, materials and methods that include the work environment so that workers do not experience injuries (Sedarmayanti 2018).

2.2 Research Design

This study uses a descriptive quantitative research strategy, which was selected for its applicability in analyzing and measuring the relationship between particular variables in the context of airport ground handling operations. With descriptive study, the existing state of affairs at Mutiara Sis Al-Jufri Airport in Palu can be accurately depicted, as can the relationship between the performance of ground handling staff and the implementation of Occupational Health and Safety

(OHS) measures. The quantitative method facilitates the collection of numerical data that can be statistically analyzed, enabling the researcher to test hypotheses regarding the influence of worker performance on safety practices. This design ensures that the findings are both reliable and valid, providing a solid basis for understanding the dynamics at play in this specific operational environment.

2.3 Research Variables

The independent variable and the dependent variable are the two primary variables examined in this study in order to investigate their relationship. The performance of ground handling employees, which includes a range of job-related activities and task-handling efficiency, is the independent variable in this study. The degree to which Occupational Health and Safety (OHS) protocols are being implemented at Mutiara Sis Al-Jufri Airport is the dependent variable. These variables are operationalized through indicators that are carefully selected to reflect both the performance levels of the personnel and the extent of OHS compliance. The aim of the research is to assess whether the personnel's has a significant impact. performance on the effective implementation of OHS protocols within the airport environment.

2.4 Population, Sample, and Research Object

The population under investigation consists of all 43 ground handling employees of Mutiara Sis Al-Jufri Airport in Palu. To ensure comprehensive coverage and representativeness, the study adopts a census approach, where the entire population is included as the research sample. This approach is particularly effective in a relatively small population, where each individual's input is critical to understanding the broader trends. The research object, which is the focal point of the investigation, is the influence of ground handling personnel's performance on the adherence to and implementation of OHS measures at the airport. By focusing on this relationship, the study aims to uncover critical insights that can inform strategies to enhance safety practices in the aviation sector.

2.5 Data Collection Techniques and Research Instruments

The data for this research was collected using a combination of observation and structured questionnaires. The observation technique involved direct monitoring of the ground handling personnel's activities to assess their performance in real-time, particularly in tasks related to safety and efficiency. The structured questionnaire, administered to all personnel, was designed to gather detailed information on their perceptions of their own performance and the implementation of OHS protocols. The questionnaire included a series of Likert-scale items to quantify responses, allowing for a detailed analysis of attitudes and behaviors. Prior to its use, the questionnaire underwent validity and reliability testing, with a Cronbach's Alpha coefficient of 0.85 indicating a high level of reliability, thereby ensuring the accuracy of the data collected.

2.6 Data Analysis Techniques

The information gathered was examined. To make sure the data satisfied the requirements for parametric analysis, a normality test (Kolmogorov-Smirnov) was carried out prior to the regression analysis. The regression analysis then offered insights into the strength and direction of the relationship between the performance of ground handling personnel and the effectiveness of OHS implementation at the airport. This statistical approach allowed the researcher to quantify the impact of performance on safety compliance, offering valuable implications for operational improvements. All statistical processing and analysis were conducted using SPSS software, known for its robust capabilities in handling complex data sets.

2.7 Research Location and Time

This study was conducted at Mutiara Sis Al-Jufri Airport in Palu, a strategic location given its significant role in regional air transportation and the critical importance of OHS in its operations. The research took place during a three-month period, from December 2023 to February 2024, coinciding with the airport's peak operational periods. This timing was chosen to capture the most relevant data regarding the performance and safety practices of the ground handling personnel under typical working conditions. By aligning the research period with the operational schedule, the study ensures the collection of data that accurately reflects the realities of the airport's daily operations.

3. RESULT AND DISCUSSION

Based on direct observations in the field, it was noted that the activities of loading and unloading are very congested. Additionally, due to insufficient compliance, many ground handling personnel place Ground Support Equipment (GSE) around the service road to prevent delays in aircraft servicing. As a result, there are still instances where ground handling personnel violate procedures in operating GSE.

The observation reveals that there is a significant lack of discipline and self-awareness among ground handling personnel in adhering to airport regulations. This shortcoming is concerning given the critical role that ground handling personnel play in maintaining order and cleanliness, this is necessary to guarantee flight safety on the apron or airside.

A comparison of current and desired conditions shows several discrepancies. For instance, ground handling personnel were observed sitting on moving carts, which are intended solely for cargo and baggage, and this practice should not occur. Evidence from February 23, 2024, indicates this violation, as per KP 635 of 2015. Additionally, there were incidents where the wheels of baggage carts detached during passenger loading activities. To address this, ground handling personnel are expected to check GSE equipment before performing loading and unloading activities, supported by regulations such as PP No. 3 of 2001, KP 326 of 2019, and PM 37 of 2021. Furthermore, carts placed on the

Service Road have the potential to disrupt service activities for users of the Service Road. Carts should be positioned according to Equipment Staging Area (ESA) markings while on standby to service aircraft, as outlined in PM 33 of 2015.

To address these issues, a proposed solution is to implement a Ramp Safety Campaign aimed at increasing awareness among ground handling personnel regarding the proper use of GSE. This initiative is expected to improve compliance and enhance overall operational efficiency.

The validity test for this research was conducted using SPSS 25 with the Bivariate Pearson Correlation (Pearson Product-Moment Correlation) technique. Correlating item scores with the total score at a significance level of 0.05 is one way to test the validity of the research tool. In a two-tailed test with a significance threshold of 0.05, the items are deemed to have a significant relationship with the overall score if the calculated r value is greater than the table r value.

Table 1. Validity Test Results for Ground Handling Performance (X)

Statement Item	Person Correlation	*Sig.*	Description
X1	0,809	0,000	Valid
X2	0,809	0,000	Valid
X3	0,783	0,000	Valid
X4	0,692	0,000	Valid
X5	0,675	0,000	Valid
X6	0,781	0,000	Valid
X7	0,781	0,000	Valid
X8	0,563	0,000	Valid

For example, considering the data for "X1":

Calculated r = 0.809

r table = 0.308

Since 0.809 > 0.308, it indicates validity. Similarly, for the other statements (X2 through X8), the results show that their correlation values are all greater than 0.308, confirming their validity.

As a result, it can be said that the following results for statement X1: 0.809 > 0.308; for statement X2: 0.809 > 0.308; for statement X3: 0.783 > 0.308; for statement X4: 0.692 > 0.308; for statement X5: 0.675 > 0.308; for statement X6: 0.781 > 0.308; for statement X7: 0.781 > 0.308; and for statement X8: 0.563 > 0.308 can all be thought to be valid.

Table 2. Validity Test Results for Safety, Security, and Health (Y)

Statement Item	Person Correlation	*Sig.*	Description
Y1	0.815	0,000	Valid
Y2	0.805	0,000	Valid
Y3	0.740	0,000	Valid
Y4	0.712	0,000	Valid
Y5	0.738	0,000	Valid
Y6	0.795	0,000	Valid
Y7	0.577	0,000	Valid

One example of data used for validation is "Y1":

- r calculated = 0.815
- r table = 0.308

0.815 > 0.308 indicates Valid.

Based on the results for variable Y, it can be concluded that the results of statement Y1 with a value of 0.815 > 0.308 can be considered valid, statement Y2 with a value of 0.805 > 0.308 can be considered valid, statement Y3 with a value of 0.740 > 0.308 can be considered valid, statement Y4 with a value of 0.712 > 0.308 can be considered valid, statement Y5 with a value of 0.738 > 0.308 can be considered valid, statement Y6 with a value of 0.795 > 0.308 can be considered valid, and statement Y7 with a value of 0.577 > 0.308 can be considered valid.

Testing an instrument's accuracy, stability, or consistency over time in measuring a certain phenomenon is known as reliability testing. The reliability test results for this research, obtained using SPSS 25, are as follows:

Table 3. Reliability of Variable X

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0,868	0,869	8

The ground handling performance variable's dependability value is 0.868 according to the Cronbach's Alpha reliability test, indicating a good level of reliability.

Table 4. Reliability of Variable Y

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0,859	0,863	7

According to the Cronbach's Alpha reliability test results, the reliability value for K3 (Occupational Health and Safety) is 0.859, indicating that the reliability is classified as high. From these results, it can be concluded that both variable X (ground handling performance) and variable Y (K3 - Occupational Health and Safety) possess high reliability values

The purpose of the normality test is to determine if the regression model's residuals have a normal distribution. The Kolmogorov-Smirnov test is utilized to assess the normality of the residual data. The following are the findings of the normalcy test for this study:

Table 5. Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		43
Normal Parameters[a,b]	Mean	0,0000000
	Std. Deviation	1,11847151
Most Extreme Differences	Absolute	0,192
	Positive	0,140
	Negative	-0,192
Test Statistic		0,192
Asymp. Sig. (2-tailed)		.000[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

The significant value for the ground handling performance and K3 (Occupational Health and Safety) variables is 0.000, which suggests that the data is normally distributed because the significance value > 0.05, according to the results of the Kolmogorov-Smirnov normality test.

Determining the extent to which independent variables influence dependent variables is done using simple linear regression analysis. The study's simple linear regression analysis yielded the following findings:

Table 6. Simple Regression Results

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1,159	1,599		0,724	0,473
	KINERJA	0,840	0,046	0,944	18,329	0,000

a. Dependent Variable: KESELAMATAN

Based on the results of the regression test, the equation can be written as follows:

Y=a+bX

Y=1.159+0.3840X

Given that the dependent variable's constant, aaa, is 1.159, its value will be 1.159. According to the hypothesis, if ground handling people perform better, the dependent variable—safety, security, and health—would rise by 0.3840. Conversely, if there is a drop, it will fall by 0.3840.

based on the less than 0.05 regression results. Consequently, it can be said that airport safety, security, and health are influenced by the work of ground handling staff.

Table 7. t-Test Results

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1,159	1,599		0,724	0,473
	KINERJA	0,840	0,046	0,944	18,329	0,000

a. Dependent Variable: KESELAMATAN

As a result of the table's significant value (18.329 > 1.68107), it can be said that at Mutiara Sis Al-Jufri Palu Airport, ground handling staff performance has a favorable impact on occupational health and safety (K3)..

CONCLUSION

Based on the research findings presented in Chapters 1 through 4, Conclusion: Palu Airport's safety, security, and health standards are greatly influenced by the work of its ground handling employees. All of the statement items utilized in this study are valid and reliable, according to the validity and reliability tests. For example, the validity test for statement X1 yielded a calculated r value of 0.809, which exceeds the table r value of 0.308, thus validating it. Additionally, reliability tests using Cronbach's Alpha indicate that all variables have values above 0.6, demonstrating that the research instruments are both consistent and dependable. The simple linear regression analysis produces the equation Y=1.159+0.840XY = 1.159 + 0.840XY= 1.159+0.840X, where the constant value is 1.159. This means that the dependent variable will be 1.159 if the independent variable stays the sameThe regression of variable X is 0.840, meaning that an increase of 0.840 will result in safety, security, and health from ground handling personnel performance; on the other hand, a drop will have an equivalent effect in the other direction. Therefore, it is concluded that increasing the understanding and awareness of safety and security among ground handling staff has the potential to enhance safety, security, and health at Mutiara Sis Al-Jufri Palu Airport. This study provides valuable insights for further developments aimed at improving awareness and understanding of these critical aspects at the airport.

Based on the discussions and conclusions drawn from the above chapters, the following recommendations are suggested: Firstly, it is advisable to conduct regular Ramp Safety Campaigns and training sessions for both personnel and service providers on the apron to elevate awareness about the importance of adhering to established procedures, thereby enhancing overall safety and security. Secondly, stricter supervision by the Apron Movement Control (AMC) unit should be implemented during ground handling operations. Such supervision would not only ensure that safety procedures are adhered to but also offer a visual record of incidents, facilitating quicker and more accurate identification of their causes and solutions. By putting these suggestions into practice, Mutiara Sis Al-Jufri Palu Airport's ground handling employees should have better health and safety and be less vulnerable to mishaps and equipment damage.. These measures are integral to the continuous efforts to enhance operational standards and safety at the airport.

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