

**THE INFLUENCE OF THE LEVEL OF CAPITAL EXPENDITURE, OPERATIONAL EXPENDITURE,  
AND EXPERTISE CAPABILITIES ON THE TECHNICAL AND ENGINEERING EQUIPMENT  
AT THE KUALANAMU AIRPORT**

**Tua M. Lbn. Toruan \*<sup>1</sup>**

Master of Property Management and Valuation Study Program, Graduate School,  
University of North Sumatera, Indonesia  
[tualumbantoruan@gmail.com](mailto:tualumbantoruan@gmail.com)

**Yeni Absah**

Master of Property Management and Valuation Study Program, Graduate School,  
University of North Sumatera, Indonesia  
[yeni.absah@usu.ac.id](mailto:yeni.absah@usu.ac.id)

**Isnen Fitri**

Master of Property Management and Valuation Study Program, Graduate School,  
University of North Sumatera, Indonesia  
[isnen@usu.ac.id](mailto:isnen@usu.ac.id)

**Abstract**

The existence of an airport that serves the need for air transportation modes will have a further effect on the airport as an economic driver and driver, so that the airport is now placed as one of the important parts in the development of an area. Based on a survey of the quality of Kualanamu airport in 2022, unsatisfactory results were obtained for Kualanamu airport. The final score is 4.30 with a standard value of 4.60 where there are low values on several indicators including 3.83 for the free wifi or internet variable, as well as a value of 3.99 for the value of the waiting room air conditioning variable. The purpose of this research is to analyze the level of ability of capital expenditure, operational expenditure and the role of expertise to get the performance of technical and engineering facilities and equipment at Kualanamu airport. This research is a type of quantitative research where quantitative research has the aim of generalizing research findings so that they can be used to predict the same situation in other populations. The instrument used is by distributing questionnaires to 110 respondents and processing data with the SPSS program.

Keywords: performance facility, airport engineering, capital expenditure, operational expenditure, expert qualification.

---

<sup>1</sup> Correspondence author

## INTRODUCTION

In this day of globalization, people must be able to travel quickly over distances of several kilometers in order to accomplish a variety of tasks. Because it takes so long, mobility to different parts of the world via land or sea transportation is undoubtedly insufficient today. Air transportation modes can more easily accommodate this increased mobility by allowing users to mobilize by flying via airports.

An airport that meets the needs of the air transportation industry will also benefit from its status as an economic engine, making it one of the key components in the growth of the surrounding area.

Everything that is kept in place to help achieve specific goals and levels of performance in a business operation is called an airport facility. Anything at the airport that is kept to support the achievement of airport services, functions, and performance in the airport business process is referred to as an airport facility. This includes infrastructure, cars, personnel, and other items. (Banjarnahor et al., 2021)

An airport is a defined area on land or in the water that is used for a variety of purposes, including the landing and takeoff of aircraft, the up and down of passengers, the loading and unloading of cargo, and the movement of people within and between modes of transportation. Airports are also equipped with basic amenities and other supporting facilities, as well as aviation safety and security facilities. (Indonesian Law No.1 Year 2009, n.d.)

Everything that is kept in place to help a business process fulfill specific tasks and functions is called a facility. Anything at the airport that is kept to support the achievement of airport services, functions, and performance in the airport business process is referred to as an airport facility. This includes infrastructure, cars, personnel, and other items. (Banjarnahor et al., 2021)

Capital expenditures are expenditures made in the context of capital formation that are in the nature of adding fixed assets or other assets that provide benefits for more than one accounting period, including expenditures for maintenance costs that maintain or increase the useful life, capacity, and quality of assets (Apriliyanti, 2017). Capital expenditure defined by Government Regulation Number 71 of 2010 (CAPEX) is budgetary spending for the purchase of fixed assets and other assets that yield benefits for more than one accounting period. Among other things, capital expenditures include those for the purchase of equipment, intangible assets, buildings and structures, and land.

Operating expenses are costs related to company operations, which include selling and administrative expenses, advertising expenses, depreciation and amortization expenses, and repairs and maintenance expenses. (Aisah, 2021). Operational Expenditure (OPEX) often referred to as operating expenditure is budgetary expenditure for federal and

regional governments' ongoing operations that yield immediate benefits, as per Government Regulation No. 71/2010. Among other things, operating expenses include salaries, purchases of goods, interest, grants, subsidies, and social assistance.

Competence is something related to skills. In various discussions, the level of ability is a certain skill, for example, mastering skills for a specific purpose. (Salim, 2022). Facilities at the departure terminal. Passengers certainly need to feel comfortable during the process of carrying out activities before departure. This is because the terminal is a place where passengers can spend a long time until boarding time. (Yazid, 2022). Airports are facilities that have an important role in the world of aviation. Airport has facilities that support in order to smooth the flight. one of the airports that has facilities that support airport flight activities. Airports refer to facilities where flight activities include the take-off and landing of aircraft, the movement of passengers up and down, facilities for loading and unloading passenger goods, and building equipment, which is a complete facility within the airport. Large airport facilities have flight service operators, hangars, and terminals, while small airports only have runways. (Azizah, 2022)

Strategic partners can assist PT Angkasa Pura II in developing economic activities and non-aeronautical commercial areas at the airport and its environs by imparting best practice expertise. (Airport, 2021).

The President Director of PT Angkasa Pura II (Persero) gave a speech at the 4th Quarter (Q4) leadership meeting that summarized the reasons behind the decline in passengers in 2019 in Indonesia, particularly at Kualanamu Airport. These included the traffic tsunami, which caused the price of airline tickets to skyrocket compared to normal prices, and the global pandemic phenomenon, which caused the transportation industry to experience a decline. Notably, the government even implemented flight delays. As a result, management was forced to implement cost-effective measures, such as delaying the implementation of investment work, capital expenditure efficiency, reducing routine work, and cutting non-organic employees. Numerous factors, including job safety, environmental concerns, organizational comfort, occupational safety and health (K3), and civil aviation safety, have been taken into account during implementation.

In addition to the previously mentioned conversation, Kualanamu Airport is putting into practice a strategic alliance with private sector or foreign airport operators. Benefits of this deal include the government's ability to use PT Angkasa Pura II, the airport operator, to leverage its private talents and experience with good management and international reach. Additionally, it is anticipated that with this agreement, Kualanamu Airport construction will proceed smoothly and in accordance with PT Angkasa Pura II's Long Term Plan (RJPP), making 2019 the year of global partnership and innovation. PT. Angkasa Pura II may profit from Kualanamu Airport's (KNO) strategic alliance with elite strategic alliances

in terms of enhanced performance and quicker airport growth. In order to establish Kualanamu Airport as a global hub and raise operational quality, strategic partners are expected to build a robust network. The fundamental force behind Kualanamu Airport's manifestation as an aeropolis—where international routes need to be further developed to support North Sumatra's economic and industrial development—is strategic partnership. The objective of Kualanamu Airport's strategic partnership is to create avenues for cooperation with elite strategic partnerships that have the potential to enhance performance and expedite airport growth.

In a strategic partnership, the two cooperating parties support one another in achieving their marketing goals, such as broadening their respective markets or raising awareness among their target audiences. Each partner must provide their advantages in order for this relationship to be formed. As a result, because it takes more time and requires more thorough planning than regular partnerships, strategic partnerships will be more complicated and unique. (Airport 2021)

In order to achieve good facility and equipment performance and ensure that the airport's facilities and equipment can serve customers and business partners, a management discussion of the current facilities and equipment is required. This will allow for an exploration of the problems that arise during the recovery period and the implementation of partnership projects at Kualanamu Airport. Capital spending, operating costs, and expertise to assess the functionality of Kualanamu Airport's facilities and equipment will be the topics of discussion.

Since it opened for business in 2013, Kualanamu Airport Deli Serdang's facilities and equipment have operated in accordance with the company's capacity to maintain them. Nevertheless, following the depiction of tsunami traffic in 2019, a worldwide pandemic struck between 2020 and 2022, and Kualanamu Airport changed operators in 2022 from PT Angkasa Pura II to PT Angkasa Pura Aviation. It appears that Kualanamu airport managers mainly focus on capital and operating expenses and follow the company's short- and long-term objectives, paying little attention to the facilities and equipment's performance year over year. In order to ascertain how well facilities and equipment are performing following the implementation of capital and operating expenditures, a study is required. Additionally, as a preliminary study at Kualanamu Airport, the effectiveness of construction and operating expenditures on the functionality of the airport's infrastructure and equipment was determined.

This study is crucial because the findings can be used to identify the barriers that exist at the capital and operational expenditure levels in order to assess how well the facilities and equipment at Kualanamu Airport perform in terms of technical and engineering functions. Furthermore, given the limits of research like this, it is hoped that future

researchers would take this into mind and be inspired to investigate this topic further using alternative variables.

## **RESEARCH METHOD**

Multiple linear regression analysis was the data analysis method employed in this investigation, and the SPSS computer program was one of the instruments used. The statistical package for social sciences, or SPSS, is a computer application that is used to analyze data using statistical methods. Version 25 of SPSS was utilized in this study.

This study employs a quantitative methodology to elucidate the causal relationship between the variables under investigation. The foundation of quantitative research is theory and hypothesis. To observe causal connections, researchers employ formal instruments and manipulation techniques to control variables. After attempting to organize the data numerically, the researcher examines the variables or study components. (Abdullah, 2015)

This study starts the research idea with theory and applies deductive reasoning to it. Quantitative researchers should propose a hypothesis, gather data to test the theory, then assert confirmation or disconfirmation of the theory depending on the results gathered because the purpose is to test or verify a theory rather than build it. (Creswell, 2017).

Descriptive analysis, which is defined as statistics used to evaluate data by describing or describing the obtained data as it is without aiming to make general inferences or generalizations, is the data analysis technique used in conjunction with data quality testing. (Sugiyono, 2014). The validity test and the reliability test are the two components of the data quality test. The validity test's goal is to determine whether the prepared research instrument is indeed accurate and capable of measuring the important variable under study. When an instrument is considered valid, it can be used to measure things that need to be measured. (Sugiyono, 2014), whereas the reliability test is an index that indicates how trustworthy or dependable a measurement tool is called a reliability test. A measuring tool is considered reliable if it is used again to test the same symptoms and the results are found to be reasonably consistent. (Helmi, 2021)

It is important to test the data in order to see whether the sample set can be examined and whether the prediction model can be applied to a collection of data. This is known as the standard assumption test. Three tests are performed in the classical assumption test, the first of which is the normality test, which determines whether or not the sample has a normal distribution. This assumption is represented by a regularly distributed error value in a linear regression model. Regression models with a normal or nearly normal distribution are considered good since they make statistical testing possible. The multiple regression model's independent variables are tested for multicollinearity, or whether they are not

exactly or nearly completely connected to one another. Using the SPSS software, the magnitude of the tolerance value and VIF (variance inflation factor) can be used to assess whether multicollinearity symptoms are present or absent. The variability of certain variables that cannot be explained by other independent variables is measured by tolerance. There is no multicollinearity when the tolerance value is larger than 0.1 or the VIF value is less than 10. These are the generally accepted general values. (Helmi, 2021). Additionally, the heteroscedasticity test looks for differences in residuals or variance between observations in a regression model. Heteroscedasticity is the state in which the residual variance from one observation to the next is constant. Additionally, the heteroscedasticity test looks for differences in residuals or variance between observations in a regression model. It is referred to as homoscedasticity if the variance between the residuals of one observation and those of other observations is constant, and heteroscedasticity if it differs. A homoscedastic model or one without heteroscedasticity is a good regression model.

The purpose of the Goodness of Fit test is to ascertain whether the capital investment, operating expenditure, and expertise—the independent variables—have a discernible and consistent impact on the dependent variable, which is the performance of technical and engineering facilities and equipment. Multiple regression testing is used in hypothesis testing. A regression equation, or formula that determines the value of the dependent variable based on the known value of the independent variable, is created during a regression analysis. The first of the three tests used in this test is the coefficient of determination test, which gauges how well the model can account for variations in the dependent variable. Assuming that other independent variables are constant, the t-test is used to assess the significance of the partial role between the independent and dependent variables. F test to ascertain the combined or simultaneous impact of all independent variables in the model on the dependent variable.

The multiple linear regression model is the research approach utilized in the hypothesis test. The goal of multiple linear regression analysis is to forecast the fluctuations in the dependent variable (criterion) when two or more independent variables are modified as mediator factors (value increases and decreases). Thus, if there are two or more independent variables, multiple regression analysis will be performed. (Sugiyono, 2014).

## **ANALYSIS AND DISCUSSION**

The independent variable (X<sub>1</sub>) capital expenditure has multiple indicators. These indicators include significance, which can have up to four statement items; development, which can have up to three statement items; inventory, which can have up to one question item; standardization, which can have up to one question item; and compliance, which can

have up to one question item. The indicators for each variable used in this study were taken from and modified from multiple studies.

There are multiple indicators for the independent variable (X<sub>2</sub>) Operational Expenditure (OPEX). There are four significance indicators, two influence indicators, three (three) technology indicators, one standardization indicator, and two environmental indicators/question items.

The indicators for the independent variable (X<sub>3</sub>) expertise, are as follows: two question items for ability indicators; two question items for communication indicators; two question items for academic indicators; three question items for academic improvement indicators; two procedure indicators; two performance approach indicators; one standardization indicator; and four human resource indicators.

A number of indicators are available for the dependent variable (Y) which is the Performance of Technic and Engineering Facilities and Equipment. These indicators include two quality indicators, one activity indicator, one installation indicator, two compliance indicators, and one supply chain indicator.

A statistic known as "descriptive analysis" is used to assess data by characterizing the obtained data as-is without attempting to draw broad inferences or generalizations. (Sugiyono, 2014). There were 110 respondents in all, with 92 of them being internal technical and engineering function employees and 18 being supporting technical and engineering personnel.

In quantitative research, researchers use theory deductively and put it at the beginning of the research proposal because the goal is to test or verify a theory rather than develop it, so quantitative researchers should propose a theory, collect data to test the theory, and confirm or disprove the theory based on the results obtained. (Creswell, 2017). After processing the data on 110 respondents, the results of all 49 questions obtained show that the mean value is greater than the standard deviation value. It can be concluded that the incoming data does not have data deviations from each question.

The validity test aims to test whether the research instrument that has been prepared is truly accurate so that it is able to measure what should be measured (the key variable being studied). Valid means that the instrument can be used to measure what should be measured. A valid instrument means that the measuring instrument used to obtain data (measure) is valid. (Sugiyono, 2014). After processing the data using the SPSS program through the correlation value table, the results obtained for all 49 questions show that the correlation value is greater than the r table value of 0.1528, and the significance value of all 49 questions is 0.00 less than 0.05. So it can be concluded that each question is valid.

The reliability test is used to determine whether the data collection tool shows the level of accuracy, stability, or consistency in revealing certain symptoms. The reliability test must

be carried out only on statements that have met the validity test and those that do not, so there is no need to continue to test reliability. (Sugiyono, 2014). After processing the data through the Cronbach's alpha table, the reliability statistic value is 0.975. So it can be concluded that all the answers to all 49 questions from respondents are very reliable.

The normality test aims to. A good regression model is one that has a normal distribution to test whether the sample used has a normal distribution or not. In a linear regression model, this assumption is indicated by an error value that is normally distributed or close to normal, so it is feasible to do statistical testing.

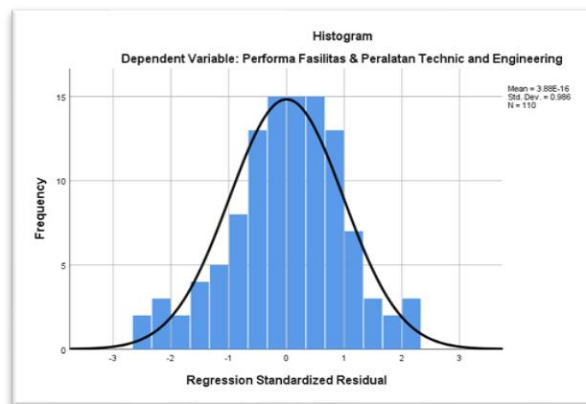


Figure 1: histogram for 110 respondents with a SPSS application

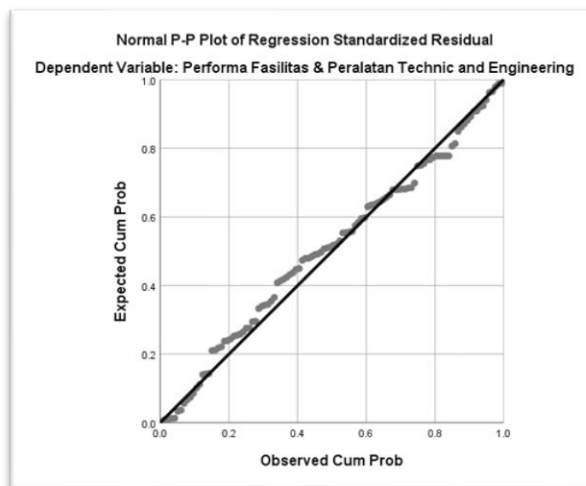


Figure 2: Normal P-P Plot of Regression with SPSS application

From the normal P-plot regression image, it is found that the points follow the diagonal line, so the classical assumption test can be declared normal.

Based on processed data using the SPSS program through the one sample Kolmogorov-Smirnov test table, it was found that the value of the asymptote Since the



significant (2-tailed) value is 0.200, it can be concluded that the overall normality test on the variables of capital expenditure, operational expenditure, expertise, and performance of technical and engineering facilities and equipment is normally distributed.

The multicollinearity test means that the independent variables with one another in the multiple regression model are not perfectly or almost perfectly related. To determine the presence or absence of multicollinearity symptoms, the amount of tolerance and VIF (variance inflation factor) values can be seen through the SPSS program. Tolerance measures the variability of selected variables that are not explained by other independent variables. The commonly used general value is a tolerance value greater than 0.1 or a VIF value smaller than 10, so there is no multicollinearity. (Helmi, 2021). Based on data processing with the SPP program through the coefficients value, it is known that the VIF (variance inflation factor) value of the capital expenditure capability level variable is  $2.637 < 10$ , the VIF value of the operational expenditure capability level variable is  $3.318 < 10$ , and the VIF value of the expertise variable is  $2.337 < 10$ , so it is concluded that there is no multicollinearity. A good VIF value is greater than 0.1 and smaller than 10. While the tolerance value of the capital expenditure variable is  $0.379 > 0.1$ , the tolerance value of the operational expenditure variable is  $0.301 > 0.1$ , and the tolerance value of the expertise variable is  $0.428 > 0.1$ , it is concluded that there is no multicollinearity.

The heteroscedasticity test aims to test whether, in a regression model, there is an inequality of variance or residuals from one observation to another. From the spread of points from the coordinates 0,0, it can be concluded that there is no heteroscedasticity in the data processed and collected. Can be seen in the picture.

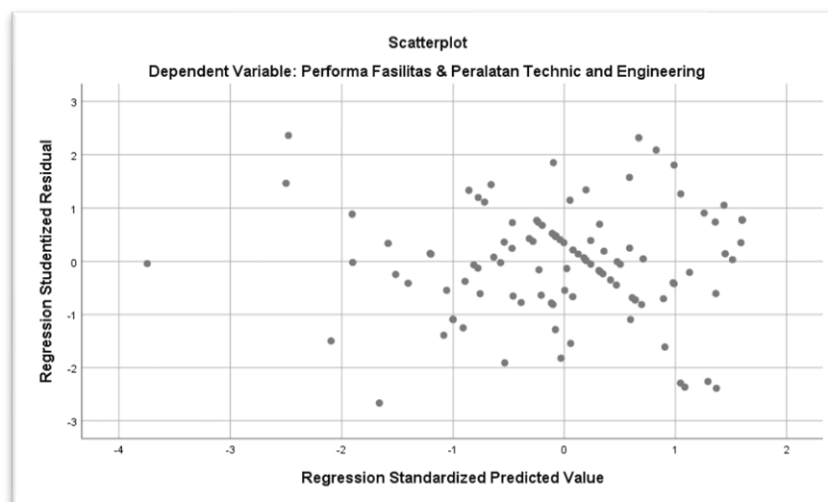


Figure 3: Scatterplot with SPSS application

The coefficient of determination essentially measures the model's ability to explain the variation in the dependent variable. The coefficient of determination is between zero and one. A small  $R^2$  value means that the ability of the independent variables to explain the variation in the dependent variable is very limited. Based on the processed data, the coefficient of determination,  $R^2$ , is found in the R square column of 0.737. This value means that all independent variables, namely the level of capital expenditure capability, the level of operational expenditure capability, and expertise, are 73.7%, while the remaining 26.3% is influenced by other factors not included in the regression model.

The T tests the regression coefficient partially. This test is carried out to determine the significance of the partial role between the independent variable and the dependent variable by assuming that the other independent variables are considered constant. The steps in making a decision for the t test are to look at the significant value. If the sig value is  $\alpha < 0.05$ , it can be concluded that the independent variable partially has a significant effect on the dependent variable, or the hypothesis is accepted. Meanwhile, if the sig value  $\alpha > 0.05$ , it can be concluded that the independent variable partially has no significant effect on the dependent variable, or the hypothesis is rejected (Ghozali, 2016). Based on the results of data processing, the t test for the capital expenditure variable is known to be 0.000, and the t value of the capital expenditure variable is 9.484. Because sig. = 0.000  $< 0.05$  and t count 9.484  $> 1.982$  (t table attached), it can be concluded that there is a partial influence of the capital expenditure variable on the performance of technical and engineering facilities and equipment. Then  $H_0$  is rejected, and  $H_a$  is accepted. Based on the results of data processing, the t test variable operational expenditure, known as sig., is 0.000, and the value of the t count variable operational expenditure is 14.883. Because sig. = 0.000  $< 0.05$  and t count 14.883  $> 1.982$  (t table attached), it can be concluded that there is a partial influence of the operational expenditure variable on the performance of technical and engineering facilities and equipment. Then  $H_0$  is rejected, and  $H_a$  is accepted. Based on the results of data processing, the t test variable expertise known sig. is 0.000, and the value of the t count variable expertise is 12.968. Because sig. = 0.000  $< 0.05$  and t count 12.968  $> 1.982$  (t table attached), it can be concluded that there is a partial influence of the expertise variable on the performance of technical and engineering facilities and equipment. So  $H_0$  is rejected, and  $H_a$  is accepted.

The F test is a test of the regression coefficient simultaneously. This test is conducted to determine the effect of all independent variables contained in the model together (simultaneously) on the dependent variable. The steps in making decisions for the F test are to look at the significant value. If the sig value is  $\alpha < 0.05$ , it can be concluded that the independent variables simultaneously or together have a significant effect on the dependent variable, or the hypothesis is accepted. Meanwhile, if the sig value  $\alpha > 0.05$ , it

can be concluded that the independent variables simultaneously or together have no significant effect on the dependent variable, or the hypothesis is rejected (Ghozali, 2016). Based on processed data, it is known that sig. is 0.000 and the calculated F value is 99.043. Because sig. = 0.000 < 0.05 and F count 99.043 > 2.69 (F table attached), it can be concluded that there is a simultaneous influence of all the variables above, namely the level of capital expenditure capability, the level of operational expenditure capability, and significant expertise on the performance of technical and engineering facilities and equipment.

The research method used is the multiple linear regression model. Multiple linear regression analysis intends to predict the state (ups and downs) of the dependent variable (criterion) if two or more independent variables as mediator factors are manipulated (increased and decreased in value). So multiple regression analysis will be carried out if the number of independent variables is at least 2. (Sugiyono, 2014). Based on the processed data, the multiple linear regression equation is obtained as  $Y = 1,605 + 0,007X_1 + 0,285X_2 + 0,150X_3$ . The results shown can be explained as follows: the regression coefficient value of the capital expenditure capability level is 0.007, and the significance value (sig.) is 0.886, greater than 0.05. So that the level of capital expenditure capability has a positive and insignificant effect on the performance of technical and engineering facilities and equipment, it can be concluded that  $H_0$  is accepted. The regression coefficient value of the level of operational expenditure capability is 0.285, and the significance value (sig.) is 0.00, which is smaller than 0.05. So that the level of operational expenditure capability has a positive and significant effect on the performance of technical and engineering facilities and equipment, it can be concluded that  $H_0$  is rejected. The regression coefficient value of expertise is 0.150, and the significance value (sig.) is 0.00, which is smaller than 0.05. So that expertise has a positive and significant effect on the performance of technical and engineering facilities and equipment, and it can be concluded that  $H_0$  is rejected.

## CONCLUSIONS

Based on the results of this study, the variables used—capital expenditure, operational expenditure, and expertise—have a positive impact. Thus, the company can make considerations in implementing the work program contained in the company's annual work plan.

As research that is still not popularly carried out, namely to determine the level of ability to improve the performance of facilities and equipment at Kualanamu airport, this research is the beginning for further research to be carried out with other variables. With the development of science about the performance of facilities and equipment at airports, this research can be a reference or guide to carry out further research.

Data on facilities and equipment, which in fact are relatively confidential for a company to publish because researchers are part of the company in the technical and engineering functions, along with answers from respondents that are internal technical and engineering, is an advantage of this research.

In this study, it was found that the variables of capital expenditure, operational expenditure, and experience affect the performance of facilities and equipment. The recommendation for future, it is hoped that more in-depth research will be obtained to examine the performance of facilities and equipment with variables other than the variables of this study. It is also expected that future research in measuring the performance of facilities and equipment for the long term can provide returns commensurate with the risk of capital expenditure and operational expenditure. The recommendation for academics and further researchers, it is recommended that they develop research related to the performance of Kualanamu airport facilities and equipment using other variables not examined in this study, with the aim of obtaining results from other indicators to improve the performance of facilities and equipment at Kualanamu Deli Serdang airport.

## REFERENCE

- Anis Siti Aisah, 2021, pengaruh Biaya Operasional dan Jumlah Penjualan Jasa terhadap Laba Bersih, Jurnal Mahasiswa Akuntansi, Sukabumi
- Astri Rumondang Banjarnahor et al, 2021, Manajemen Transportasi Udara, Yayasan Kita Menulis, Jakarta
- Azizah, 2022, Analisis Pengaruh Fasilitas pada Terminal 1 terhadap Kepuasan Penumpang di Bandar Udara Juanda Surabaya, Surabaya
- Devi Apriliyanti, 2017, Pengaruh Belanja Modal terhadap Pendapatan Asli Daerah dan Dampaknya pada Kinerja Keuangan pada badan Pengelolaan Keuangan Daerah Pemerintah, Makassar
- Ghozali Imam, 2021, Analisis Multivariate dengan Program IBM SPSS 21 Update PLS Regresi, Penerbit Widina, Universitas Diponegoro, Semarang
- John W. Cresswell, 2017, Research Design Pendekatan Kualitatif, Kuantitatif, dan Mixed, belbuk.com, Yogyakarta
- Kementerian Perhubungan Republik Indonesia, 2009, Undang-Undang Republik Indonesia Nomor 1 Tahun 2009 tentang Penerbangan, Jakarta
- Ma'ruf Abdullah, 2015, Metode Penelitian Kuantitatif, Aswaja Pressindo, Yogyakarta
- Peraturan Pemerintah Republik Indonesia Nomor 71 Tahun 2010, Standar Akuntansi Pemerintah, Presiden Republik Indonesia, Indonesia
- PT. Angkasa Pura Aviast, 2021, Strategic Partnership Kualanamu International Airport, Deli Serdang

- PT. Angkasa Pura II, 2019, Profil Jabatan Unit Kerja Kantor Cabang PT. Angkasa Pura II (Persero) Bandar Udara Internasional Kualanamu, Peraturan Direksi PT. Angkasa Pura II (Persero), Tangerang
- Pudyas, Mabruri Salim, 2022. Kompetensi adalah Tingkat Kemampuan, Ketahui Artinya di Berbagai Konteks, Jurnal Liputan 6.com, Jakarta
- Situmorang Helmi Syafrizal, 2014, Analisis Data untuk Riset Manajemen dan Bisnis, USU Press, Universitas Sumatera Utara, Medan
- Sugiyono, 2013, Metode Penelitian Kuantitatif, Kualitatif, dan R&D, Penerbit Alfabeta, Bandung
- Yazid I, 2022, Analisis Pengaruh Fasilitas Terminal Keberangkatan terhadap Kepuasan Penumpang di Bandar Udara Internasional Lombok Praya, Sekolah Tinggi Teknologi Kedirgantaraan Yogyakarta, Indonesia