



## Signs Facility Optimisation to Improve Services at El Tari Kupang International Airport Terminal

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### ABSTRACT

*This research examines the optimization of signs or instructions at El Tari Kupang International Airport to improve service and safety for passengers, service users, and officers. Although there are various signs such as exit, check-in, and transit counters, the current signs do not meet the standards stipulated in the Decree of the Minister of Transportation Number KM 22 of 2005 concerning the Application of SNI 03-7094-2005 for signs at airport terminals. Using a qualitative descriptive method, this research analyzes and summarizes data from interviews and observations. The purpose of this research is to facilitate and improve the safety of movement at the airport. The results showed that some signs are not up to standard, highlighting the need for improvement to meet the regulations set.*

### INTRODUCTION

According to UU No. 1 Tahun 2009, airports are areas on land and/or water with certain boundaries that are used as places for aircraft to land and take off, up and down passengers, loading and unloading goods, and intra and intermodal transportation movements, which are equipped with aviation safety and security facilities, as well as other basic and supporting facilities. In the context of tourism activities, all of the above are aspects that are very much needed. Signage or signboards are a primary need for tourists. With signage, the activities of tourists are helped, Mardiah, Z., & Maria, U. A. (2013). Every passenger who comes has been facilitated by these facilities, such as signage that is widely found in the airport. According to the Regulation of the Minister of Transportation Number PM 13 Tahun 2014, traffic signs can be in the form of warnings, prohibitions, orders, and instructions.

Airport operation level of service (LOS) and performance management are among the major concerns by any airport authority. Two aspects considered in that kind of measurement: passengers prospective and operators prospective, Gronfula, M. G. (2014). Passengers do not understand the areas within the airport, so clear signs are needed to facilitate the movement of passengers, carriers, and visitors. The provision of signage at the airport is regulated in Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 concerning the Application of SNI 03-7094-2005 concerning Signs at Airport Terminals as a Mandatory Standard. One of the essential services required by passengers is information services, which are crucial for navigating the airport's flow and procedures. This information service includes the availability and ability of information services in the form of audio, visual, and counter, Ginusti, G. N., & Windiyani, S. I. (2023).



Airport signs must be easy to understand and unobstructed. Implementation of this standard is to avoid causing confusion for passengers, especially in the departure area, and then can follow the route after check-in, Noyola, C. (2024). In addition, the no entry sign outside the arrival area is blocked by the flight information screen, so some passengers who have left the arrival area try to re-enter through the arrival gate, even though according to the Peraturan Menteri Perhubungan Nomor 167 Tahun 2015 concerning Amendments to the Peraturan Menteri Perhubungan Nomor PM 33 Tahun 2015 concerning Access Control to Limited Security Areas at Airports, every passenger or officer who has left the limited security area must conduct a screening check at the Passenger Screening Check Point (PSCP) again to prevent carrying dangerous or prohibited items into the airport terminal. Passenger non-compliance in using ground facilities, particularly in the airport drop zone area, often results in operational activities at the airport being hindered, Mardiana, D., Fatmawati, F., & Furyanto, F. A. (2024).

Lack of clarity of signs in the Terminal area of El Tari Kupang International Airport can cause disorientation and endanger passengers at the airport. If the passenger terminal design in terms of infrastructure and operational capacity is not approached correctly, the level of service provided to passengers may decline, Pivac, J., Štimac, I., Vidović, A., & Boc, K. (2022). There are three categories of passengers: those who prioritize traditional services, those who prefer technology-driven services, and those who opt for technology-based services only in specific situations, such as when the environment is less crowded, and the process is quicker, Tyagi, S., & Lodewijks, G. (2022).

Based on the explanation above, the researcher made a Research with the title "Optimization of Signs Facilities for Service Improvement at El Tari Kupang International Airport Terminal". The problem formulations in this study are: (a) Is the implementation of signs facilities at El Tari Kupang International Airport in accordance with Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 concerning the Application of SNI 03-7094-2005 Regarding Signs at Airport Terminals as Mandatory Standards? and (b) How to improve services at El Tari Kupang International Airport Terminal through optimization of signs facilities based on evaluation of the implementation of existing standards?

## RESEARCH METHOD

The research method in this research uses a flexible qualitative evaluation approach, allowing researchers to adjust the research steps based on field conditions, Sugiyono. (2017). This approach is used to compare the factual conditions in the field with the standards set, especially related to the placement of signs at the El Tari Kupang International Airport Terminal. Researchers will collect data through field observations, interviews with relevant parties, documentation, and literature studies to understand the effectiveness and compliance of signage with applicable regulations, such as the Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005. Data collection techniques in this study include interviews with operational and facility managers at the airport, direct observation of the use of signage at the terminal, and analysis of relevant

documentation and reports. Researchers also conducted a literature study to review regulations, theories, and literature that support data analysis. The collected data will be analyzed using qualitative descriptive methods, with triangulation techniques to ensure the validity of the research results. The analysis process involves organizing data into relevant categories and drawing conclusions that can provide recommendations for signage improvements at the airport.

This research was conducted at El Tari Kupang International Airport, starting during the implementation of On the Job Training on December 11, 2023 until February 29, 2024. The selection of this location was based on the researcher's experience with the conditions and situation at the airport, which enabled an in-depth understanding of the effectiveness of signage in improving passenger service and safety

## RESULTS AND DISCUSSION

### *Observations*

From December 11, 2023 to February 29, 2024, observations were conducted at El Tari Kupang International Airport in the landside and airside terminal areas. To find out the flow of travel and the utilization of visual information facilities by visitors, researchers conducted field observations of the behavior patterns of prospective passengers from the entrance to their destination. Researchers also looked at strategic and non-strategic information points. Field surveys were conducted on the layout and organization of space, as well as the placement and clarity of information points and signage. Researchers documented the terminal area of El Tari Kupang International Airport and facilities that use signs. The placement of signs at El Tari Kupang International Airport that researchers observed was still found to be less strategic and less optimal placement that could make service users or airport officers experience accidents due to the lack of placement of signs, it made a confusion at the airport and harmed service users and officers because there was no further improvement effort.



**Figure 1.** Exit sign that is covered by a pillar

In Figure 1. which shows signs or instructions (signs) that are still less than optimal. The placement of signs that are less strategic and less optimal which can make service users or airport officials experience accidents due to the lack of placement of signs, it creates confusion at the airport and harms service users and officers because there has been no further improvement effort.



**Figure 2.** Absence of sign or clues (signs)

In Figure 2. shows the absence of sign facilities or instructions (signs) in the drop zone and pick up zone area which includes (only for dropping off passengers, no stopping for more than 3 minutes, and no leaving the vehicle). The drop zone is a place to drop off passengers who will enter the terminal and the pick up zone is a place that facilitates picking up passengers with a drive-thru system. This lack of standards and placement is appropriate based on Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 establishing the Indonesian National Standard (SNI) on Signs at Airport Terminals as a Mandatory Standard in the standard and sign placement section, which will ensure that the quality and placement of signs will not be disturbed by advertisements or other signs in the vicinity.



**Figure 3.** Light fire extinguisher sign (APAR)

In Figure 3. is a light fire extinguisher (APAR) located in the waiting room which has no sign or instructions on how to use it. This causes when in an emergency that requires a fire extinguisher, passengers who do not have experience or knowledge of how to use a light fire extinguisher (APAR) cannot help or handle the incident, so it will take time to wait for passengers or officers who have experience or knowledge of how to use a light fire extinguisher (APAR). This is contrary to Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005, which stipulates the Indonesian National Standard for Signs at Airport Terminals.



**Figure 4.** Placement of evacuation route signs or instructions

Figure 4 shows the evacuation route sign in the waiting room. It is not in accordance with Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 on the Application of Indonesian National Standards Regarding Signs in Airport Terminals, which states that signs should be installed at a minimum height of 240 cm from the floor surface of the terminal building. They can be hung or affixed on one side to a section of wall or pole to customize the installation. The installation of signs will help passengers and staff know the evacuation route in the waiting room in case of an emergency.



**Figure 5.** Fading sign of no entry except officers (staff) (Source: Researcher's Process)

In Figure 5 and Figure 6 are signs of instructions forbidden to enter except officers (staff) in front of the Aviation Security (Avsec) officer's room which already looks faded or becomes unclear, and Figure 4.6 is an exit sign at the check in counter which already looks damaged and faded. In accordance with the Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 concerning the Application of Indonesian National Standards Regarding Signs at Airport Terminals that every sign or instruction (signs) at the airport terminal is required to be in optimal condition, namely the sign or instruction is clearly visible, there is no damage, strategic placement, and easy to read. With this, it can facilitate passengers and officers who are in the airport terminal.



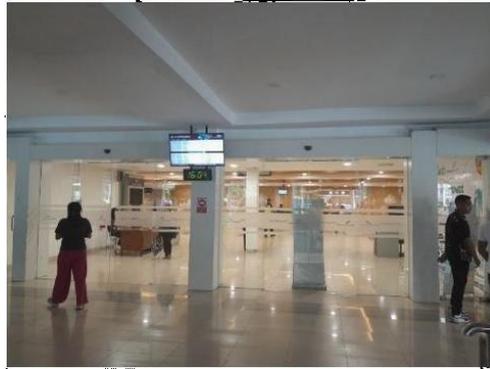
**Figure 6.** Damaged exit sign or instructions (Source: Researcher's Process)

In Figure 5 and Figure 6 are signs of instructions forbidden to enter except officers (staff) in front of the Aviation Security (Avsec) officer's room which already looks faded or becomes unclear, and Figure 4.6 is an exit sign at the check in counter which already looks damaged and faded. In accordance with the Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 concerning the Application of Indonesian National Standards Regarding Signs at Airport Terminals that every sign or instruction (signs) at the airport terminal is required to be in optimal condition, namely the sign or instruction is clearly visible, there is no damage, strategic placement, and easy to read. With this, it can facilitate passengers and officers who are in the airport terminal.



**Figure 7.** Placement of signs prohibiting hitting automatic door construction

Figure 7 shows a sign that says not to hit the automatic door. This is because it is not in accordance with the Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 on the Application of Indonesian National Standards Regarding Signs in Airport Terminals, which states that signs should be installed at a minimum height of 240 cm from the floor surface of the terminal building. They can be hung or affixed one side to a section of wall or pole to customize the installation.



**Figure 8.** Placement of the no entry sign

Figure 8. No entry signs located outside the arrival area, their installation interferes with the flight information screen. This is because the Implementation of Standard Signs at Airport Terminals explains that every sign or instruction (sign) located at the airport terminal must not be obstructed by objects or objects so that the sign cannot be read by passengers or officers.

### *Interview*

The following are the results of interviews that have been conducted with Mr. Christian Peter Dirks as Airport Operation & Service Improvement Manager as resource person 1 and Mrs. Thursina Mistika as Airport Facilities, Equipment, & Technology Manager as resource person 2 from Angkasa Pura I El Tari Kupang International Airport via whatsapp application:

**Table 1.** Interview Questions and Results

No	Question	Answer
1	How do you feel about the facilities, especially the placement of signs available at El Tari Kupang International Airport?	<p>Interviewee 1: I consider the layout of the signs at Kupang El Tari International Airport to be very important. They not only guide passengers and visitors to find directions easily but also reflect the quality of service and the orderliness of the airport.</p> <p>Interviewee 2: As the Manager of Facilities Equipment and Technology at El Tari Kupang International Airport, I pay close attention to the layout of the signs. I believe a good arrangement of signs is very important as they not only help passenger navigation but also reflect professionalism and comfort in the airport experience.</p>



2	Do you think that the signs at El Tari Kupang International Airport are in accordance with the Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 concerning the Application of SNI 03-7094-2005 Regarding Signs at Airport Terminals as Mandatory Standards?	<p>Interviewee 1: It is appropriate, because every facility at the airport must have regulations, so the application of signs or instructions is in accordance with the regulations mentioned.</p> <p>Interviewee 2: To my knowledge it is appropriate, from the beginning of making the airport layout, it will definitely be adjusted to the applicable aviation regulations.</p>
3	If it is appropriate, why are there some signs or clues that are not optimally placed?	<p>Interviewee 1: For signs in the drop zone and pick up zone because there are still improvements and changes in the layout of the vehicle lanes in and out, the signs are still in the process of being added, and for signs that are damaged, faded and placed below, maybe it will be our evaluation of the airport for the future.</p> <p>Interviewee 2: The signs mentioned may be negligence on our part, and we will immediately re-evaluate the shortcomings of the signs or instructions. We welcome criticism and suggestions from both passengers and staff.</p>
4	Have you ever encountered or received reports of passengers getting lost or trying to enter restricted areas due to lack of signs?	<p>Interviewee 1: Often, passengers who try to enter the terminal through the arrival gate, especially lion and garuda flights during the peak hour at 1pm, it is very crowded, passengers who have just landed forgot to take their luggage have already left the terminal and want to re-enter but are prevented by Aviation Security officers (AVSEC), then directed to re-enter through the departure gate.</p> <p>Interviewee 2: We received a report from a passenger, a passenger who wanted to return to the check in counter from the waiting room did not know the way to the check in counter so he had to ask the Aviation Security officer (AVSEC).</p>



5	<p>What efforts are made by the airport to improve services at the airport terminal related to signs?</p>	<p>Interviewee 1: For our efforts, of course, by receiving feedback from passengers and officers who find deficiencies in the signs or instructions, then from the airport we will inspect, evaluate, and immediately carry out maintenance on existing signs or instructions.</p> <p>Interviewee 2: Our efforts on the facility side, we will inspect several areas of the terminal that are less than optimal in signage facilities. And also listening to criticism and suggestions is one of our efforts to improve services at the airport terminal.</p>
6	<p>Are there any obstacles to optimizing the signs at the airport terminal?</p>	<p>Interviewee 1: There are definitely administrative obstacles because every additional facility must have permission from the center, so optimization will be delayed or not get the permit.</p> <p>Interviewee 2: When it comes to optimizing small signs or instructions such as no entry signs, evacuation routes, etc., we can fix them immediately. But for large signs or instructions, we need permission from our leadership.</p>

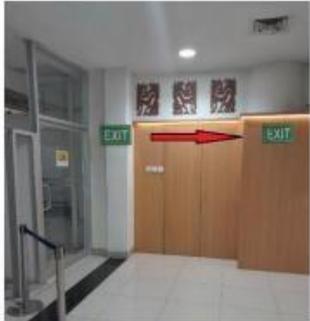
## DISCUSSION

According to observations and interviews, signs or instructions at Kupang's El Tari International Airport Terminal are in accordance with Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 concerning the Application of Indonesian National Standards Regarding Signs at Airport Terminals as Mandatory Standards. However, after observation, there are still signs or instructions that are not in accordance with applicable regulatory standards.

The following are efforts to improve signage facilities at Kupang's El Tari International Airport Terminal:

1. Addition and optimization of the location of signs. The following efforts to add and optimize the location of signs can be seen in table;
2. Routine Evaluation and Maintenance: Conduct regular evaluations of all signs in the terminal to ensure clarity, safety, and compliance with applicable standards. Routine maintenance is carried out to repair or replace damaged or unclear signs;
3. User Feedback: Collect feedback from airport users on the clarity and effectiveness of existing signs and use the feedback to make improvements or adjustments where necessary.

**Table 2.** Improvement of signs or clues (signs)

No.	Field Conditions	Library Condition
1	 Light fire extinguisher sign	 Addition of light fire extinguisher signs
2	 exit sign	 Shifting of exit signs
3	 No signage at pick up zone and drop zone	 Addition of signage at pick up zone and drop zone

## CONCLUSION

After conducting research on the previously mentioned problems and titles, it can be concluded that the signs or instructions at Kupang's El Tari International Airport



Terminal are not in accordance with Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005 concerning the Application of Indonesian National Standards Regarding Signs in Airport Terminals as Mandatory Standards. This discrepancy makes many users and officers unaware of the dangers and warnings that should not be violated in the terminal area. To improve services at the airport, the airport must pay more attention to the application of signage to service users and conditions in the field.

Based on the research results and conclusions that have been stated, it is recommended that the Kupang El Tari International Airport re-evaluate the applicable standards, as stipulated in Keputusan Menteri Perhubungan Nomor KM 22 Tahun 2005. In addition, it is necessary to add and improve signage in terms of placement and condition in accordance with established standards. Some signs that need to be added include in the drop zone and pick up zone areas as well as at the location of the light fire extinguisher (APAR). Meanwhile, signs that require repair include exit signs that are covered by pillars, no entry signs except for staff, faded and damaged exit signs, and evacuation route signs that are in less than optimal positions. These improvements are expected to improve services and safety at Kupang's El Tari Airport Terminal.

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