

ANALYSIS OF SIGNAGE AVAILABILITY AND ITS OPTIMIZATION IN THE DEPARTURE AREA OF SAMS SEPINGGAN INTERNATIONAL AIRPORT

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Abstrak

Kelancaran operasional pada suatu bandar udara ditunjang oleh fasilitas-fasilitas, salah satunya adalah fasilitas layanan informasi berupa signage (penunjuk arah) demi kenyamanan serta kemudahan pengguna jasa bandara. Penelitian ini bertujuan untuk mengetahui ketersediaan signage, proses pengawasan serta penanganan petugas Terminal Service Officer (TSO) sebagai unit yang bertanggung jawab terhadap ketersediaan dan kesiapan fasilitas di terminal bandar udara khususnya terkait signage, dan bagaimana tindak lanjut petugas TSO terkait optimalisasi signage. Penelitian ini menggunakan jenis penelitian deskriptif kualitatif. Teknik pengumpulan data yang digunakan adalah wawancara, observasi dan dokumentasi; teknik analisis data yang digunakan adalah reduksi data, display (penyajian) data, kesimpulan dan verifikasi. Keabsahan data yang digunakan yakni triangulasi sumber dan triangulasi teknik. Hasil penelitian menunjukkan bahwa area keberangkatan Bandara SAMS Sepinggan memiliki papan petunjuk Operasional, Fasilitas Umum, Peringatan, dan Larangan, tetapi kategori Perkantoran tidak ada. Beberapa elemen tidak berfungsi secara optimal karena penempatan atau tata letak yang kurang tepat dan informasi yang memudar. Petugas TSO melakukan penanganan serta pengawasan sudah sesuai prosedur mutu yang berlaku untuk selanjutnya pengajuan berita acara dan apabila disetujui maka akan berlanjut pada pembaruan papan petunjuk dengan ketentuan yang berlaku dan jika belum disetujui maka petugas TSO melakukan mitigasi (pertolongan pertama) pada papan petunjuk yakni pemasangan standing sign serta bantuan dari Unit Customer Service guna mengarahkan pengguna jasa dalam menunjukkan letak dan lokasi di area keberangkatan.

Kata kunci: layanan informasi, signage bandara, area keberangkatan, terminal service officer, optimalisasi

Abstract

The operational efficiency of an airport is supported by facilities, one of which is information service facilities in the form of signage for the convenience and ease of airport service users. This study aims to investigate the availability of signage, the supervision and handling processes of TSO personnel as the ones who are responsible for the availability and readiness of facilities in the airport terminal, and how TSO personnel follow up on signage optimization. This was descriptive qualitative research approach with both primary and secondary data sources. Data collection techniques include interviews, observations, and document analysis, while data analysis techniques involve data reduction, data display, drawing conclusions, and verification. Data validity and reliability were ensured through source triangulation and technique triangulation. The research findings revealed that the departure area of SAMS Sepinggan Airport has Operational, Public Facilities, Warning, and Prohibition, however Office signage is noticeably absent. Several signage elements do not perform their intended functions optimally due to their poor positioning or layout and fading information. TSO personnel have appropriately followed the prevailing quality procedures for supervision and management by initiating the submission of reports, which, if approved, leads to the renewal of signage in accordance with the applicable regulations and if not, TSO personnel will implement mitigation measures by installing standing signs and requesting assistance from the Customer Service Unit to guide service users in locating positions and areas in the departure area.

Keywords: information service, airport signage, departure area, terminal service officer, optimization,

Introduction

Transportation, nowadays, has become the primary means of connecting individuals to their desired destinations. One of the widely adopted modes of transportation is air travel, with aircraft serving as a preferred choice due to its efficiency in terms of time. Airports, in this context, play a pivotal role as essential hubs for air transportation services. Generally, airports must be capable of facilitating air travel activities within their operational hours, ensuring flight safety, smooth operations, and security

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(Bongga, 2009). Airports should provide facilities that support the seamless movement of passengers departing or arriving at the airport, especially in landside areas. According to The Regulation of the Minister of Transportation of the Republic of Indonesia No. PM 178 of 2015 on Service Standards for Airport Service User, the facilities utilized in the passenger departure and arrival processes include passenger and baggage inspections, check-in services, departure immigration, arrival immigration, customs services, arrival lounges, baggage services, as well as facilities designed to enhance passenger comfort, such as temperature control, lighting conditions, baggage transportation convenience, cleanliness, information services, restroom facilities, parking areas, and amenities for passengers with special needs. These facilities are integral to the comfort and convenience experienced by airport service users, as passengers are entitled to these amenities to facilitate their journeys.

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. One form of this information service is signage, as specified in The Regulation of the Minister of Transportation of the Republic of Indonesia No. PM 178 of 2015 on Service Standards for Airport Service User. To be more specific, according to the Airport Signage Standards of PT. Angkasa Pura I, signage or the sign system comprises interconnected elements that collectively form a comprehensive directional guide for service users. The availability of information signs and the ease of orientation have been identified as important factors in passenger satisfaction (Tam & Lam, 2004).

Nevertheless, the effectiveness of signage, especially at the Sultan Aji Muhammad Sulaiman (SAMS) Sepinggan Balikpapan International Airport is not fully realized. Some passengers find it challenging to comprehend the layout of the departure area and frequently need assistance with the check-in locations. This highlights the inadequacy of signage, leading to operational disruptions.

Research related to airport signage remains limited. One of which has been studied by Sa'diyah and Prabaningrum (2023) in Kualanamu Airport. They analyzed descriptively common errors in the usage of words and phrases and the prevalent use of English in the signage within the airport. In previous years, Azalia (2019) conducted a study analyzing the placement of a signage system at Ahmad Yani Semarang International Airport Terminal. The results indicated that improper placement of signage within the terminal of Ahmad Yani Semarang International Airport has led to difficulties for passengers in reaching their desired destinations. This issue resulted in passenger congestion during peak hours. Optimizing signage placement in the terminal can be achieved through airport operational personnel that involve a reassessment of the location, considering the building's structure and spatial dynamics, and evaluating feedback, suggestions, and inquiries from service users.

At SAMS Sepinggan Balikpapan International Airport, information services are assigned to Terminal Service Officers (TSOs). TSOs are units within the airport terminal tasked with supervising all operational support facilities on the landside of the airport and measuring the level of service. Before commencing operations, TSO personnel must ensure the readiness of all landside facilities. In cases where any facility is non-functional, TSO personnel evaluates and initiate requests for repairs or additions. Failing to address these issues can significantly affect airport operations and potentially jeopardize the performance of TSO personnel (Rozi, 2020).

Based on these discussions and identified issues, the present research places a greater emphasis on the availability of signage, TSO personnel supervision, and the subsequent optimization of TSO personnel actions related to signage. Thus, the insights from earlier relevant research serve as valuable references, guiding the researcher in addressing and resolving the issues at hand. In other words, this research will try to answer the following questions: 1). What is the extent of signage availability in the departure area of Sultan Aji Muhammad Sulaiman Sepinggan Balikpapan International Airport?

2). What are the processes involved in handling and supervising signage by TSO personnel to optimize the availability of signage?

Literature Review

Airport Terminal

Under the Decision of the Board of Directors of PT. Angkasa Pura I (Persero) concerning the Manual of Standard Land Side Operation Facility at airports managed by PT. Angkasa Pura I (Persero), an airport terminal can be defined as a transportation infrastructure located within the aerodrome area on the terrestrial and/or aquatic domains, delimited by specific boundaries, which serves as a location for the landing and takeoff of aircraft, as well as for the embarkation and disembarkation of passengers, the loading and unloading of cargo and mail, and as an intermodal transfer point for various modes of transportation. This terminal is equipped with safety and security facilities, as well as essential and ancillary amenities designed to facilitate the intermodal transfer of passengers and cargo between different modes of transportation.

In the Regulation of the Minister of Transportation of the Republic of Indonesia No. PM 178 of 2015 on Service Standards for Airport Service User in Article 4 paragraph 1 explains that the facilities used in the process of departure and arrival of passengers include:

- a. Passenger and Baggage Inspection;
- b. Check-in Service;
- c. Departure Immigration;
- d. Arrival Immigration;
- e. Customs Service;
- f. Arrival Waiting Room;
- g. Baggage Service.

And in Article 4 paragraph 2 describes the facilities that provide comfort to passengers, namely:

- a. Temperature Conditioning;
- b. Light Conditioning;
- c. Ease of Baggage Transportation;
- d. Cleanliness;
- e. Information Services;
- f. Restrooms;
- g. Parking Lot;
- h. Facilities for users with special needs.

Airport Operation

Airport Operation is all operational activities at the airport (Resky & Simarmata, 2014). It encompasses activities on the ground and in the air, which are categorized into three primary functions: airport services, airport security, and airport safety. To support these operational activities, various specialized units and personnel are organized within sub-operations, each assigned distinct roles and responsibilities aimed at ensuring the smooth execution of airport operations. For example, in the domain of airport services, there is a dedicated unit known as Customer Service. Within the domain of airport security, there exists the Aviation Security (AVSEC) unit or personnel, and in the context of airport safety, the Aircraft Rescue and Fire Fighting (ARFF) unit is in place.

In conclusion, operational activities at the airport rotate around the assurance of a comfortable and secure travel experience for service users. The presence of personnel is pivotal in achieving operational efficiency, along with other supportive factors such as airport facilities.

Information Service

Referring to The Regulation of the Minister of Transportation of the Republic of Indonesia No. PM 178 of 2015 on Service Standards for Airport Service User., at point 2.5 concerning the availability indicator, compliance with the benchmarks includes:

1. Visual information facilities are available following the established standards.
2. Audio information facilities are available and adhere to the established standards.
3. Central information counter facilities are present, easily locatable, and informative.
4. Advanced transportation information facilities are available following the standards, easily accessible, and visible.

Airport Signage

Based on PT Angkasa Pura I Signage Standard, signage is derived from English which means signage, in this case, signs are auxiliary tools that can be used as directions. In this case, signage refers to airports where signs found at airports have standards. The signs themselves have a standard layout:

- a. The placement location must ensure that passengers do not lose information related to the intended facility.
- b. The size of the signage must adjust to the size of the room where the signage is installed without reducing space for passengers.
- c. The height of the bottom of the signage must be at least 240 cm from the floor if it cannot reach this height, a re-study must be carried out so that the placement of the signage does not interfere with the main function of the signage and the comfort of airport users.
- d. Placement of signage must refer to the farthest standard visibility that has been determined.

Based on PT Angkasa Pura Airport Signage Standards the airport signage has types that are categorized into 4 types, as shown below:

- a. Operational Signage

Operational signage is equipment in airports, in the form of symbols, letters, numbers, sentences and/or combinations of them that function as instructions, warnings or prohibitions, orders or instructions on operational activities for the departure or arrival of passengers.



Figure 1. Operational Signage

(source: PT Angkasa Pura I Signage Standard)

- b. Public and Concessionary Facility Signage

Public and concessionary facility signage is equipment in airports, in the form of symbols, letters, numbers, sentences and / or a combination of them that serve as instructions, warnings or prohibitions, orders or instructions for users of airport facilities that provide instructions on public facilities provided in the airport.



Figure 2. Public Facility Signage

(source: PT Angkasa Pura I Signage Standard)

- c. Office Signage

This signage is airport equipment, in the form of symbols, letters, numbers, sentences and / or a combination of them that serve as instructions, warnings or prohibitions, orders or instructions for users of airport facilities that provide instructions about office facilities located within the airport.



Figure 3. Offices Signage

(source: PT Angkasa Pura I Signage Standard)

d. Warning Signage

Warning signage is a sign that informs about procedures or provisions that must be followed and obeyed by users or users of airport services.



Figure 4. Warning Signage

(source: PT Angkasa Pura I Signage Standard)

e. Prohibition Signage

This signage is a sign that informs about things that should not be implemented or that must be done by all or some users or users of airport services.



Figure 5. Prohibition Signage

(source: PT Angkasa Pura I Signage Standard)

Those five categories of signage are regulated under the Indonesian National Standard (SNI) 03-7094-2005, which has been endorsed by the Ministry of Transportation through Minister Regulation No. 22 of 2005 as a mandatory national standard.

1. Command signs: clear and authoritative directives that leave no room for discretion, as they are meant to be strictly followed
2. Prohibition signs: clear and unequivocal rules instructing against certain actions
3. Warning signs: information to indicate possible risks or hazards that might arise
4. Recommendation signs: advisory information and compliance with them is optional
5. Information signs: information in the form of directions for message recipients who are navigating to specific destinations, such as maps, directional indicators, symbols, and the like

The primary objective of the SNI certification standards is to enhance the ease of use for air transportation mode users within airport terminal facilities.

Terminal Service Officer Unit

Terminal Service Officer is a unit responsible for supervising and ensuring that facilities at the airport terminal are functioning properly, TSO officers also measure the level of service (Fajarani, 2021). Indirectly, the Terminal Service Officer will always coordinate with other units such as Customer Service and Facility to ensure that the facilities are in prime condition and can be used. Based on the above understanding, it can be concluded that the main task of the Terminal Service Officer unit is supervision at the airport terminal (landside).

Method

This study uses a qualitative research design, which does not use statistical procedures or quantitative ways (Sidiq & Choiri, 2019). This is a descriptive qualitative study to describe a condition or phenomena (Sudaryono, 2017) which was conducted to figure out the signage availability in the departure area of SAMS Sepinggang Balikpapan International Airport and the processes involved in handling and supervising the signage by TSO personnel to optimize the availability. The data of this research was collected using interview, observation, and documentation carried out from 1 February to 31 March 2023.

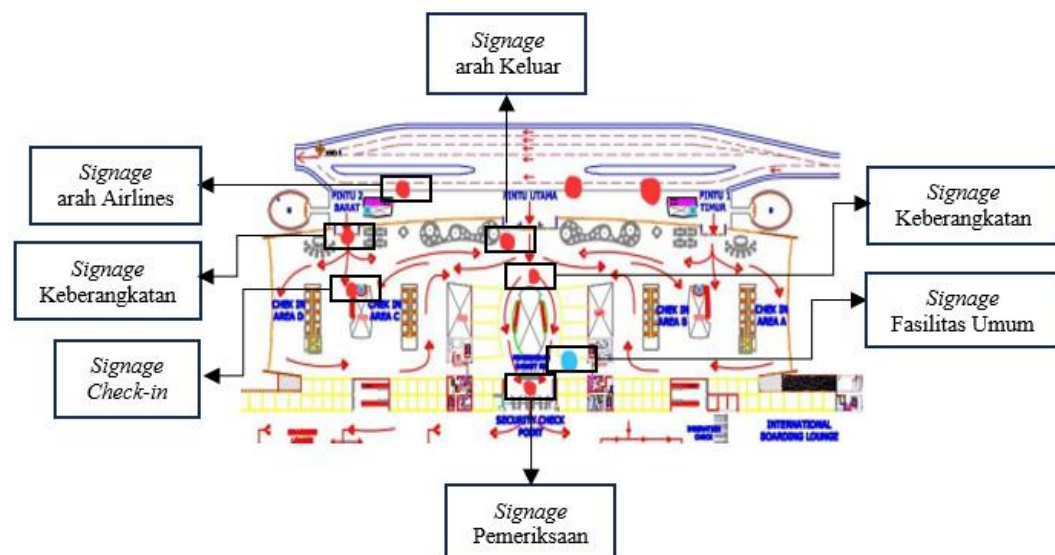
The researchers employed in-dept interview (Sugiyono, 2018) with semi-structured questions to TSO personnel and passengers. Besides, observation was done to get an overview of the availability of signage and passengers' experience in using the signage to guide or direct them in the departure area. Several documents used in this research are the Regulation of Minister of Transportation No. PM 178 of 2015, *Prosedur Mutu BPN-OP-OL-09* on Tindak Lanjut Permasalahan di Terminal, *Prosedur Mutu BPN-OB-PL-06* on Pengawasan Kesiapan Pelayanan Landside, PT Angkasa Pura I Signage Standard, Board of Director Decision PT. Angkasa Pura I on Manual of Standard Land Side Operation Facility.

Triangulation techniques were used to improve validity measurement and strengthen the credibility of research findings by comparing them with different approaches (Rahardjo, 2010) by comparing several data sources and data collection techniques. The data were analyzed qualitatively: data reduction, display, and conclusion/verification (Miles & Huberman in Sugiyono, 2018).

Results and Discussions

Availability of Signage in the Departure Area of Sultan Aji Muhammad Sulaiman Sepinggang International Airport Balikpapan

There are several signages at the departure area of Sultan Aji Muhammad Sulaiman Sepinggang Balikpapan International Airport:









Note:


Red: Operational Facility, Blue: Public Facility

Figure 6. The layout of Departure Area of SAMS Sepinggang Balikpapan International Airport

In accordance with the Airport Signage Standards of PT. Angkasa Pura I and the Indonesian National Standard SNI 03-7094-2005, airports are ideally equipped with signage categorized into five distinct categories. Upon conducting observations, it was noted that within the departure area of SAMS Sepinggan Airport, there are signage categories corresponding to Operational, Public Facilities, Warning, and Prohibition, while the category of Office signage is noticeably absent (see Figure 6 and Table 1.)

Table 1. Signage at Departure Area of SAMS Sepinggan Balikpapan International Airport

No	Availability	Standards		Description
		Accessible	Visible	
1.		√	x	The airline signage is located next to the departure lobby pillar. The airline logo is fading and needs to be updated.
2.		√	√	The departure signage is located in front of the east entrance and opposite the elevator so that it is in accordance with the standards, easily seen by service users, and visible in good condition.
3.		√	√	Security checkpoint signage is easy to find and visible.
4.		√	√	The exit direction signage is located in front of the exit door according to the standard easy to find and visible. This signage makes it easy for passengers to find the exit in the departure area.
5.		√	√	The departure signage is located in front of the center entrance so that it is visible to service users. However, passengers are often mistaken and think this signage leads to check-in where check-in is the initial flow for departure so in this case it is necessary to have check-in signage in the middle entrance area.
6.		x	x	This check-in signage is not suitable because the location and access to see it is covered by the elevator. The location of this check-in signage needs to be repositioned to make it easier for passengers to access the check-in counter. Besides, with a distance of approximately 100 meters, this signage is not clearly visible due to the small size of the written information so it can be said that it does not function properly.

No	Availability	Standards		Description
		Accessible	Visible	
7.		√	√	The signage for public facilities, warnings, and prohibitions has been consolidated onto a single board, conforming to standardized specifications. Nevertheless, service users frequently inquire about the location of public facilities, particularly restrooms, due to the placement of general facilities signage high above the ceiling and their relatively small size, rendering them occasionally difficult for service users to locate.

Notably, for Office signage, only placards positioned above doors were found, which are considered insufficiently effective for facilitating user access. As an example, there have been instances where passengers, particularly those with disabilities, experienced confusion while navigating the premises in search of the Clinic for confirmation purposes. The availability of information signs and the ease of orientation have been identified as important factors in passenger satisfaction (Tam & Lam, 2004). Besides, the design and placement of airport signage also require careful consideration. Principles such as visibility, legibility, and effective communication should be taken into account (Cunningham & King, 2021). As presented in the table above, however, it is evident that several signage elements do not fulfill their intended functions optimally. This deficiency can be attributed to their suboptimal positioning or layout and, in some cases, fading information. This observation is further substantiated by the following excerpts from interviews:

"The lack of check-in signage in the departure area is a notable shortcoming." (Interview 2, TSO3)

"Not all airline counters have their respective signage... Passengers often inquire due to the absence of check-in signage, causing significant confusion." (Interview 2, TSO4)

The accounts provided by airport staff are in alignment with the outcomes of interviews conducted by the researcher with passengers.

"I was somewhat perplexed because, typically, airports have clear directions, but here, signs are pointing towards departures, which I initially thought directed me to the check-in counter, but it leads directly to the security check. So, it's not very clear, in my opinion." (Interview 3, Passenger)

Based on feedback from both airport staff and passengers, it becomes evident that operational challenges persist within the departure area. Even operational signage, especially pertaining to the check-in area, does not function effectively. Consequently, passengers may incorrectly assume that these signs are absent, and complaints regarding the lack of clear signage persist within the departure area. The availability and effectiveness of signage remain deficient, leading to a lack of passenger understanding regarding the departure process. Particularly, the absence of clear check-in directional signage leads to passenger dissatisfaction and confusion. It can be concluded that an upgrade or repositioning of signage at SAMS Sepinggan International Airport in Balikpapan is necessary, with adherence to applicable standards.

Handling and Supervision Processes of TSO Officers Regarding Signage to Optimize Signage Availability

To address this research question, data from interviews and documentation were utilized. In this section, the researchers examined the processes involved in the handling and supervision of TSO officers concerning signage, as specified in the PM/BPN-OB-PL-06 document, which outlines the quality procedures for overseeing landside services readiness. This procedure serves as a reference for TSO officers in their duties regarding the management and oversight of the facilities within the terminal. Figure 2 below provides insights into the supervision and the workflow for handling signage by TSO officers.

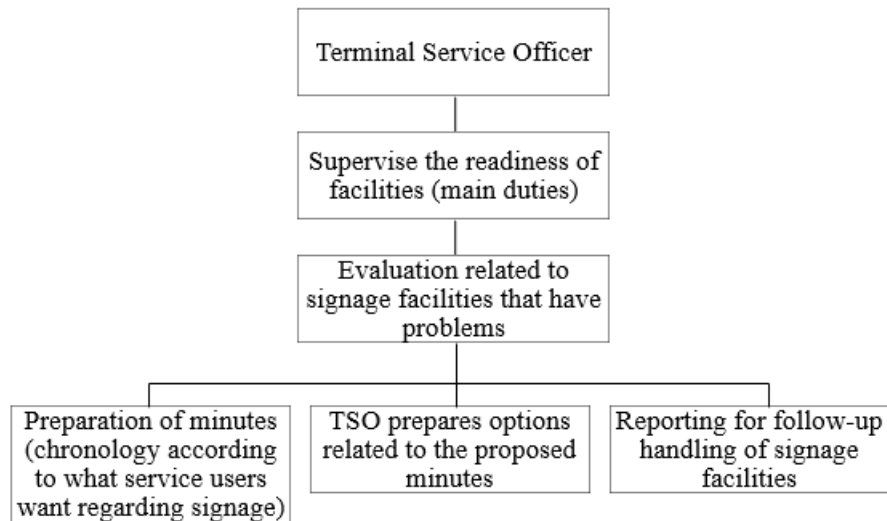


Figure 2. Flowchart of Signage Handling and Supervision

This chart explains that TSO officers carry out their duties in monitoring the readiness of facilities and if there are facilities that are not up to standard or even hamper operational activities. An evaluation will be conducted, and the results will be used by the TSO officers to make a report comprising a chronology related to the facility constraints, which will be subsequently be submitted for follow-up. Next, the TSO officer will make an official report in the form of a chronology according to the evaluation, in which the officer will suggest choices for handling the signage and then submit it for further follow-up to the official report that has been made. Therefore, it can be concluded that the handling and monitoring process carried out by TSO officers follows the applicable quality procedures.

The procedures correspond to the quality standards of PM/BPN-OP-PL-09 concerning issue resolution at the terminal (Appendix 13). The process consists of several stages aimed at enhancing signage availability. Building upon the discussion presented in the second section, the sequence begins with the submission of a report by TSO personnel. Subsequently, confirmation of follow-up actions is undertaken by TSO. Within the follow-up process, two possibilities are considered: optimization follow-up if the report is authorized and optimization follow-up if the report remains unapproved. This discussion also involves an analysis of the data concerning the follow-up actions performed during the optimization process.

From the evaluation results conducted by the TSO, an official report will be generated, subject to review by supervisors, managers, senior managers, and eventually the general manager. If, following this assessment process, the report receives approval, the operational unit will issue an official minute, which will then be forwarded to the facility unit responsible for installation. Subsequently, the TSO will monitor the situation by identifying specific locations where signage is needed in order to optimize the functionality of signage.

In cases where optimization is not approved due to various factors and considerations made by the relevant authorities, TSO personnel will resort to mitigation measures to enhance signage by employing temporary signage (standing signs). As depicted in the accompanying illustration, standing signs are positioned at points where permanent signage is currently lacking. In addition to temporary signage, the optimization of signage by TSO personnel is also carried out with the assistance of the Customer Service unit located in the departure area. Improving wayfinding signage can lead to a better passenger experience and reduce the stress and anxiety associated with navigating through airports (Jamshidi et al., 2020).

Conclusion

This research leads to the conclusion that the availability of signage at SAMS Sepinggan Balikpapan International Airport is not yet optimal according to the standards. It is primarily due to signage positioning issues that necessitate a process of renewal (repositioning) and improvement to ensure operational smoothness in the departure area. In this context, supervision and handling of signage involve a phased evaluation process conducted by TSO personnel. Their surveillance and management procedures have aligned with the applicable quality standards. However, it is evident, based on passenger feedback and the findings of this study, that the optimization process has thus far only involved mitigation measures. These measures include the assistance of Customer Service personnel and the placement of standing signs to support information services (signage). As a result, the full potential of signage functionality has not been achieved. An upgrade or repositioning of signage at SAMS Sepinggan International Airport in Balikpapan is necessary, with adherence to applicable standards.

Daftar Pustaka

- Azalia, G. (2019) Analisis Lokasi Penempatan Papan Petunjuk (*Signage System*) di Terminal Bandar Udara Internasional Ahmad Yani Semarang. *Prosiding SNITP (Seminar Nasional Inovasi Teknologi Penerbangan)*, 3(3), 1–6. <https://doi.org/10.46491/snitp.v3i3.370>
- Cunningham, U. & King, J. (2021). Information, Education and Language Policy in the Linguistic Landscape of an International Airport in New Zealand. In: Greg Niedt, Corinne A. Seals (Ed.), *Linguistic Landscapes beyond the Language Classroom*. Bloomsbury Academic
- Fajariyani, Y. A. (2021). Terminal Service Officer (TSO) dalam Memonitoring Area Terminal Bandar Udara Internasional Zainuddin Abdul Majid Praya - Lombok. *Tugas Akhir*. Yogyakarta: Sekolah Tinggi Teknologi Kedirgantaraan.
- Jamshidi S, Ensafi M and Pati D. (2020). Wayfinding in Interior Environments: An Integrative Review. *Frontiers in Psychology* 11, 1-24. <https://doi.org/10.3389/fpsyg.2020.549628>
- Ministry of Transportation. (2015). *The Regulation of the Minister of Transportation of the Republic of Indonesia No. PM 178 of 2015 on Service Standards for Airport Service User*. Jakarta: Ministry of Transportation of the Republic of Indonesia
- PT. Angkasa Pura I. (2019). *Standar Signage Bandar Udara*. PT. Angkasa Pura I (Persero)
- Rahardjo, M. (2010). *Triangulasi dalam Penelitian Kualitatif*. <https://uin-malang.ac.id/blog/post/read/101001/triangulasi-dalam-penelitian-kualitatif.html>
- Resky, M. & Simarmata, J. (2014) Fungsi dan Kelemahan Unit Operasi Pelayanan di Bandara. *Jurnal Manajemen Bisnis Transportasi dan Logistik*, 1 (1), 1-8.
- Rozi, I. F. (2020). Analisis Kinerja Petugas Terminal Service Officer (TSO) Dalam Menunjang Kegiatan Operasional Bandar Udara Internasional Zainuddin Abdul Madjid Lombok. *Skripsi*. Yogyakarta: Sekolah Tinggi Teknologi Kedirgantaraan.
- Sa'diyah, I., & Prabaningrum, B. I. (2023). Penulisan Bahasa pada Petunjuk Arah dan Lokasi di Bandara Internasional Kualanamu. *Narasi: Jurnal Kajian Bahasa, Sastra Indonesia, Dan Pengajarannya*, 1(1), 67–80. <https://doi.org/10.30762/narasi.v1i1.878>
- Sidiq, U., & Choiri, M. M. (2019). *Metode Penelitian Kualitatif di bidang pendidikan*. Ponorogo: Nata Karya.
- Sudaryono (2017) *Metode Penelitian*. Depok: Rajawali Press.
- Sugiyono. (2018). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Yogyakarta: Alfabeta.
- Tam, Mei-ling & Lam, William H.K. (2004) Determination of service levels for passenger orientation in Hong Kong International Airport. *Journal of Air Transport Management*, 10 (3), 181-189. <https://doi.org/10.1016/j.jairtraman.2003.10.011>