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AN ANALYSIS OF PASSENGER PERCEPTIONS REGARDING AISLE AVOIDANCE BEHAVIORS ON PELITA AIR FLIGHTS CONCERNING SAFETY, SECURITY, AND COMFORT

ANALISIS PERSEPSI PENUMPANG MENGENAI PERILAKU MENGHINDARI LORONG PADA PENERBANGAN PELITA AIR BERKAITAN DENGAN KESELAMATAN, KEAMANAN, DAN KENYAMANAN

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Abstract

Passenger movement within aircraft aisles is an essential activity during the flight process, particularly inside narrow-body aircraft where mobility remains restricted. Interactions between passengers frequently trigger avoidance behaviors that potentially influence perceptions of safety, security, and comfort during travel. Therefore, this study aims to analyze passenger perceptions of aisle avoidance on Pelita Air flights based on these three specific dimensions. Methodologically, the research utilizes a quantitative descriptive approach involving a five-point Likert scale questionnaire. Data were gathered from 350 respondents who previously utilized Pelita Air flight services. Furthermore, the analysis was conducted by calculating mean values to determine the categorization of respondent perceptions. Findings indicate that all variables fall within the "good" category. Specifically, the mean value for safety reached 4.098, security 4.099, and comfort 4.077. Effectively, these findings demonstrate that the avoidance process in the cabin aisle is perceived as safe, orderly, and sufficiently comfortable despite the limited space for movement. Importantly, this study contributes to the understanding of passenger behavior in confined cabin spaces and becomes valuable input for airlines to enhance the quality of cabin services.

Keywords : Passenger Perception, Cabin Aisle, Safety, Security, Comfort.

Abstrak

Pergerakan penumpang di lorong pesawat merupakan aktivitas penting selama proses penerbangan, terutama di dalam pesawat berbadan sempit di mana mobilitas tetap terbatas. Interaksi antar penumpang sering memicu perilaku menghindari yang berpotensi memengaruhi persepsi keselamatan, keamanan, dan kenyamanan selama perjalanan. Oleh karena itu, penelitian ini bertujuan untuk menganalisis persepsi penumpang tentang penghindaran lorong pada penerbangan Pelita Air berdasarkan tiga dimensi spesifik tersebut. Secara metodologis, penelitian ini menggunakan pendekatan deskriptif kuantitatif yang melibatkan kuesioner skala Likert lima poin. Data dikumpulkan dari 350 responden yang sebelumnya menggunakan layanan penerbangan Pelita Air. Selanjutnya, analisis dilakukan dengan menghitung nilai rata-rata untuk menentukan kategorisasi persepsi responden. Hasil penelitian menunjukkan bahwa semua variabel termasuk dalam kategori "baik". Secara khusus, nilai rata-rata untuk keselamatan mencapai 4,098, keamanan 4,099, dan kenyamanan

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4,077. Secara efektif, temuan ini menunjukkan bahwa proses penghindaran di lorong kabin dianggap aman, tertib, dan cukup nyaman meskipun ruang gerak terbatas. Yang terpenting, studi ini berkontribusi pada pemahaman perilaku penumpang di ruang kabin yang terbatas dan menjadi masukan berharga bagi maskapai penerbangan untuk meningkatkan kualitas layanan kabin.

Kata Kunci : Persepsi Penumpang, Lorong Kabin, Keselamatan, Keamanan, Kenyamanan.

1. INTRODUCTION

Air transportation continues to evolve as a modern mode of mobility that demands high standards of safety, security, and comfort. A critical area within the aircraft cabin is the aisle, which is the primary path for passenger movement during boarding, seat transitions, and various in-flight activities [1].

One of the central zones in the aircraft cabin is the aisle, functioning as the circulation route for passengers during boarding, moving to seats, storing luggage, and general movement throughout the flight. On narrow-body aircraft, such as the Airbus A320 operated by Pelita Air, the aisle has limited dimensions, which frequently necessitates interactions between passengers [2]. Resultantly, these conditions trigger avoidance behaviors, such as giving way, tilting the body, or pausing briefly to prevent physical contact [3]. Such behaviors are not merely related to mobility. Specifically, they also influence passenger perceptions regarding safety, security, and comfort [4].

The aforementioned spatial limitations prompt adaptive avoidance behaviors, including mutual yielding, body angling, or temporary stops to avoid physical touch. These actions relate to more than just movement, as they significantly impact the overall perception of safety, security, and comfort during the flight.

Research concerning avoidance behavior has been extensively conducted within the context of pedestrian movement and crowd dynamics [5], [6]. Nevertheless, studies specifically addressing passenger perceptions of avoidance experiences in aircraft aisles, particularly within Indonesian domestic flights, remain scarce [7]. Accordingly, this study was undertaken to analyze how passengers evaluate the avoidance experience within the cabin aisles of Pelita Air aircraft.

Objectives

This study seeks to analyze passenger perceptions of avoidance behaviors occurring within Pelita Air cabin aisles comprehensively by reviewing the dimensions of safety, security, and comfort during the movement process. Additionally, the research aims to identify how the limited dimensions of the aisle space influence passenger interactions concerning movement adjustments, avoidance strategies, and behavioral adaptations when meeting or crossing paths. Ultimately, these findings are expected to provide an empirical overview of movement effectiveness within confined aircraft spaces while serving as a foundational consideration for cabin design development, flight service quality improvements, and the formulation of recommendations based on human behavior to support a safer, more orderly, and more comfortable flight experience.

Scope

The focus of this research remains on analyzing passenger perceptions of avoidance behaviors within Pelita Air cabin aisles during the flight process, with the study restricted to safety, security, and comfort as the primary variables. Respondents consist of passengers who have utilized Pelita Air services. For this reason, the gathered data stems from subjective experiences regarding cabin interactions and mobility. Specifically, the object of research is limited to avoidance activities occurring when passengers pass one another, yield the right of way, or adjust body positions within the restricted movement area of the aisle. Furthermore, the study does not address the technical aspects of aircraft design, structural cabin dimensions, or airline operational standards in depth. The methodology employed is descriptive-quantitative, utilizing a survey approach with a Likert scale questionnaire. Consequently, the analysis is limited to measuring respondent perception levels through mean value calculations and evaluation categorizations. This approach does not involve causal

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relationship analysis or advanced statistical model testing. Broadly speaking, this research concentrates on the general overview of passenger perceptions regarding movement dynamics in cabin aisles as part of the flight experience and does not include a total technical evaluation of aviation safety or a comprehensive analysis of airline operational policies.

2. RESEARCH METHOD

This research utilizes a quantitative approach with a descriptive survey method to obtain an empirical overview of passenger perceptions regarding avoidance behaviors in Pelita Air cabin aisles. Fundamentally, a quantitative approach was selected due to its capacity to explain research phenomena objectively through numerical measurement based on systematically structured responses. Furthermore, the survey method facilitates the collection of perception data derived from the direct experiences of passengers during air travel.

Data collection was conducted by distributing structured questionnaires featuring a five-point Likert scale, ranging from strongly disagree to strongly agree. Specifically, the respondents consist of individuals who have utilized Pelita Air flight services and possess firsthand experience moving through aircraft aisles. The sampling technique employed is non-probability sampling via a purposive sampling method. This selection is based on specific criteria, namely, individuals who have completed air travel and engaged in mobility within the cabin aisle.

The sample size was determined using the Slovin formula approach to obtain a minimum size with a 5% margin of error. Mathematically, the formula is expressed as follows.

$$n = \frac{N}{1 + (N \cdot e^2)}$$

In this equation, n represents the sample size, N is the population size, and e is the margin of error. Consequently, this formula serves as the basis for determining the number of respondents to ensure the gathered data possesses an adequate level of confidence in representing the research population.

Because the total number of aircraft passengers cannot be known with absolute certainty and remains dynamic due to constant fluctuations in traveler numbers, this study adopts an infinite population approach. Assuming a large population size, the sample size determination was performed by establishing a representative population estimate while maintaining a 5% margin of error. Subsequently, the minimum sample size was calculated using the following formula.

$$n = \frac{Z^2 \times p \times q}{e^2}$$

Furthermore, the sample size calculation is performed as follows.

$$\begin{aligned} n &= \frac{Z^2 \times p \times q}{e^2} \\ &= \frac{1.645^2 \times 0.5 \times 0.5}{0.05^2} \\ &= \frac{0.6765}{0.0025} \\ &= 270.6 \end{aligned}$$

Based on the Slovin formula calculation for an unknown population, the study identified a requirement of 271 respondents. Nevertheless, to enhance the reliability and precision of the research data, the final number of respondents used in this study was set at 350.

To further increase the consistency and accuracy of the results, the respondent count was expanded beyond the minimum threshold. Meanwhile, the collected data underwent processing through stages of editing, coding, tabulation, and descriptive statistical analysis. This analysis involves calculating mean values, frequency distributions, and Likert scale category classifications to interpret passenger perceptions regarding safety, security, and comfort during aisle avoidance behaviors. Ultimately, these interpretations serve as the foundation for the research discussion and conclusions.

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3. RESULT AND DISCCUSSION

The research findings were obtained by distributing questionnaires to 350 respondents with experience in air travel. These collected data points were subsequently analyzed using descriptive statistics to identify trends in passenger perceptions regarding avoidance behavior within aircraft aisles. Specifically, the evaluation focuses on three primary variables, namely safety, security, and comfort. To provide a systematic interpretation, the analysis involves calculating the mean value for each variable, which is then classified into specific assessment categories according to a five-point Likert scale.

Table 1. The Respondent Identification Recapitulation

Respondent Characteristics	Category	Frequency	Percentage (%)
Gender	Male	182	52
	Female	168	48
	Total	**350**	**100**
Age	17–25 years	101	28.9
	26–35 years	166	47.4
	36–45 years	77	22
	>45 years	6	1.7
	Total	**350**	**100**
Pekerjaan	Civil Servant	77	22
	Private Sector Employee	158	45.1
	Military/Police		
	Student	2	0.6
	Farmer	37	10.6
	Others	0	0
	Total	76	21.7
	1 time	**350**	**100**
Flight Frequency	2 times	99	28.3
	3 times	83	23.7
	More than 3 times	83	23.7
	Total	85	24.3
Seating Position	Aisle seat	**350**	**100**
	Middle seat	91	26
	Window seat	100	28.6
	Total	159	45.4
		350	**100**

Source: Results of Analysis, 2026

According to the data in Table 1, the characteristics of the research respondents exhibit a diverse distribution across gender, age, occupation, flight frequency, and seating preference. This variation in characteristics confirms that the research data originated from a heterogeneous background. Effectively, such diversity allows for a representative overview of passenger perceptions concerning aisle avoidance behaviors.

Perceptions of the Safety Aspect

To determine the level of respondent perception regarding safety during aisle avoidance behaviors, the mean value was calculated based on responses to each indicator statement. Correspondingly, the summary of these calculations is presented in Table 2.

Table 2. Mean Scores for the Safety Aspect

Safety Items	Item Mean
Item 1	4.18
Item 2	4.05

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Item 3	4.07
Item 4	4.14
Item 5	4.05

Calculation:

$$Mean = \frac{4.18 + 4.05 + 4.07 + 4.14 + 4.05}{5}$$
$$= 4.098$$

Source: Results of Analysis, 2026

The mean value of 4.098 for the safety aspect indicates that, broadly speaking, respondents hold a positive perception of safety conditions when navigating avoidance maneuvers in Pelita Air cabin aisles. Specifically, the majority of passengers evaluate movements within the aisle as sufficiently safe, noting that the risks of collision or mobility disruptions remain relatively low. Furthermore, interactions between passengers are perceived to stay within non-hazardous limits. Ultimately, the avoidance process is viewed as effective and well-executed, even within the restricted physical confines of the aircraft cabin.

Perceptions of the Security Aspect

To identify respondent levels regarding the security aspect during the avoidance process in the cabin aisle, a descriptive statistical analysis was conducted. This involved calculating the mean value based on respondents' answers to every indicator statement structured within the questionnaire. Consequently, these calculation results are presented in tabular form to facilitate easier interpretation and to highlight the overall trends in respondent assessments.

Table 3. Mean Scores for the Security Aspect

Security Items	Item Mean
Item 1	3.99
Item 2	4.11
Item 3	4.09
Item 4	4.23
Item 5	4.08

Calculation:

$$Mean = \frac{3.99 + 4.11 + 4.09 + 4.23 + 4.08}{5}$$
$$= 4.099$$

Source: Results of Analysis, 2026

The mean score of 4.099 for the security aspect indicates that, in general, respondents maintain a positive perception of security conditions during avoidance maneuvers in Pelita Air cabin aisles. Specifically, interactions between passengers are evaluated as orderly and characterized by minimal disruptions. Furthermore, these movements do not trigger anxiety or potential conflicts that might diminish the sense of security throughout the flight. Ultimately, it can be concluded that the management of passenger movement within restricted cabin spaces successfully fosters a conducive environment, providing passengers with physical and psychological security.

Such conditions suggest that the handling of passenger mobility in confined cabin areas creates a supportive environment physically and psychologically during the flight.

Perceptions of the Comfort Aspect

The summary of data processing results for the comfort aspect indicators, derived from respondent answers, was calculated using mean values. These results are presented in tabular form to facilitate a clear interpretation of the research findings.

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Table 4. Mean Scores for the Comfort Aspect

Comfort Items	Item Mean
Item 1	4.06
Item 2	3.99
Item 3	4.06
Item 4	4.11
Item 5	4.16

Calculation:

$$Mean = \frac{4.06 + 3.99 + 4.06 + 4.11 + 4.16}{5}$$
$$= 4.077$$

Source: Results of Analysis, 2026

A mean value of 4.077 for the comfort aspect indicates that passengers generally perceive the avoidance process in the cabin aisle to occur under sufficiently comfortable conditions. Specifically, the spatial limitations within the aisle are effectively managed by passengers through cooperative behaviors such as yielding the right of way and adjusting body positions. Furthermore, the smooth interaction during movement ensures that the travel experience remains positive, despite the confined environment typical of narrow-body aircraft.

Notably, passengers tend to adjust their physical posture and provide personal space to prevent physical contact. Consequently, the travel experience maintains a positive trajectory even during peak movement periods.

Based on the data processing results, respondents generally provide a positive assessment of avoidance behaviors within aircraft aisles. Such findings indicate that movement interactions between passengers in confined spaces occur adaptively through mechanisms of motion adjustment, body repositioning, and the provision of personal space to prevent collisions. Accordingly, these conditions contribute to heightened perceptions of safety and comfort during boarding, in-flight movement, and deboarding. Adaptive passenger behavior, therefore, emerges as a critical factor alongside the physical dimensions of the cabin aisle in determining movement effectiveness.

Table 5. Summary of Mean Values for All Research Variables

Variables	Mean Value	Category
Safety	4.098	Good
Security	4.099	Good
Comfort	4.077	Good

Source: Results of Analysis, 2026

As demonstrated in Table 5, every variable falls within the “good” category. Specifically, the security variable achieved the highest average value of 4.099, suggesting that respondents feel that avoidance movements between passengers successfully minimize the risk of physical impact or disruption while walking in the aisle. Meanwhile, the safety variable obtained a mean score of 4.098, indicating that the behavior of mutually providing space and coordinating movement is perceived as effective in maintaining stability within narrow spaces. Conversely, the comfort variable holds a mean value of 4.077. Although this remains in the “good” category, the relatively lower score compared to other variables highlights that passenger density continues to influence comfort perceptions during aircraft mobility.

These results illustrate that avoidance behavior represents a form of socio-spatial adaptation occurring naturally when individuals navigate high-density, confined spaces. Passengers indirectly apply strategies such as slowing their pace, rotating their torsos, or granting priority to others as a form of informal coordination. Effectively, this mechanism functions to maintain a smooth flow of movement. These findings reinforce the concept that mobility effectiveness in narrow environments is determined not only by physical dimensions but also by human behavioral responses to environmental conditions.

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Furthermore, the positive perceptions across all three variables indicate a link between aircraft cabin design and the adaptive capacity of space users. Restricted cabin aisles can still function optimally if users demonstrate cooperative behavior and strong situational awareness. From a practical standpoint, this research emphasizes the importance of considering human behavior in evaluating cabin interior designs and managing boarding or deboarding processes. Ultimately, focusing on these behavioral aspects can enhance overall movement efficiency and passenger satisfaction.

4. CONCLUSION

Based on the research findings, passenger perceptions regarding avoidance behaviors in Pelita Air cabin aisles fall within the "good" category across the dimensions of safety, security, and comfort. The highest mean value was recorded for the security aspect, followed by safety and comfort. Specifically, these results demonstrate that movement interactions between passengers within restricted cabin spaces proceed safely, orderly, and comfortably due to adaptive behaviors and social awareness among space users. Collectively, avoidance behavior is deemed effective in supporting smooth passenger mobility despite the limitations of the physical environment.

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