

A Capstone Project Submitted to Embry-Riddle Aeronautical University in Partial Fulfillment of
the Requirements for the Aviation Management Certificate Program

Title: A Gap Analysis of In-Cabin Pet Transport Procedures in Brazilian Airlines

Rafael Fappiano, Daniel Evo, Possidonio Neto, Aliny Mesquita, Adriano Tunes, Daniel Fresati
Embry-Riddle Aeronautical University.

São Paulo, Brazil

October 20th, 2024

Group's Capstone Project Chair: Dr. Robin Roberts

Group Capstone Coaches, Dr. Stephanie Douglas & Professor Heather Owen-Perry

Abstract

In recent years, the demand for transporting pets in airplane cabins has increased significantly. Given the lack of in-depth regulations governing this mode of transportation, this study highlighted the risks and opportunities in the processes and procedures currently established. The research methodology included a comprehensive literature review and procedure manuals from Brazilian airlines on cabin pet transport. The results of the study were a gap analysis in the travel journey of passengers transporting dogs and cats in airplane cabins, suggesting future changes to make the pet journey safer and more comfortable.

Keywords: pet transportation, air travel, animal welfare, passenger cabin, gap analysis, airline procedures and aviation regulations.

Introduction

The air transportation of pets has emerged as a perceived necessity for passengers and an opportunity for airlines around the world. According to the International Pet and Animal Transportation Association (IPATA), over 4 million animals are transported by airlines globally each year. About 71.9% on domestic flights and 28.1% on international flights in 2023 ("Pet Travel Services Market Size", 2023).

In recent years, the number of pets owned in Brazil, specifically dogs and cats, grew by 27%, reaching 101 million in 2022 (Ozbun, 2022). This increase indicates that the demand for pet travel may become more significant for airlines, which currently have limited and risky guidelines for transporting pets in airplane cabins. In Brazil, the volume of animals transported in the cabin increased by 16% from 2022 to 2023, reaching nearly 150,000 pets (Sabino, 2024). As in much of the world, the demand for pet transportation has become an important market niche, addressing passenger needs and providing an additional source of revenue for airlines. However, airline regulations and internal standards impose limits and prerequisites for this type of transport. Our study highlighted risks and opportunities of transporting pets — especially dogs and cats — in airplane cabins, and a gap analysis of the processes and procedures that support this operation.

Problem Statement

The increasing demand for pet transportation in Brazil has highlighted the need for significant improvements in the current aviation infrastructure and procedures designed to accommodate animals in passenger cabins. Despite the existence of regulations governing animal transport, there are notable deficiencies in key areas that impact operational efficiency and customer satisfaction.

From a business perspective, the lack of clear and consistent information for pet owners regarding travel policies, procedures, and safety measures can lead to dissatisfaction, legal liabilities, and reputational damage. This study identified the critical challenges and opportunities within the pet travel journey and explored potential solutions to enhance the overall experience for both pets and their owners.

Project Goals and Scope

This project identified the challenges of transporting pets in airplane cabins through an analysis of the procedures, policies, and infrastructure for this type of transport. The goal was to identify the existing gaps to ensure a safe, comfortable, and efficient travel experience for both pets and their owners. The research highlighted potential risks in the process by identifying gaps in current regulations and safety protocols. The outcome was a gap analysis of the entire journey for passengers traveling with dogs and cats in aircraft cabins. While the term "pet" can encompass various animals, this research will specifically focus on dogs and cats.

Definition of Terms

The following section provides concise definitions of key terms used in this research.

Airline regulations: A set of rules and policies established by airlines and regulatory bodies that govern the operation of commercial flights. These regulations cover a wide range of areas, including flight safety, passenger and baggage transport, animal transport, and operational requirements that airlines must follow to ensure the safety and efficiency of their operations.

Cabin services: Services provided to passengers within the aircraft cabin during the flight, including customer service, meals, product sales, in-flight entertainment, and, in the case of pet transportation, support related to the well-being of pets traveling in the cabin.

Flight safety: Measures and procedures implemented to ensure the safety of all aspects of a flight, including the safety of the aircraft, passengers, crew, and any animals on board. Flight safety involves compliance with regulations, crew training, aircraft maintenance, and the mitigation of potential risks that could affect the safe operation of the flight.

IPATA (International Pet and Animal Transportation Association): An organization dedicated to ensuring the safe and humane transport of pets and animals globally. IPATA connects pet shippers, airlines, and animal care professionals to uphold high standards in animal transport during air travel. The association also advocates for best practices and improvements within the industry.

PETC: Refers to the transport of small animals, such as cats or dogs, within the passenger cabin of an aircraft, rather than in the cargo hold. PETC is subject to specific regulations that govern the permissible size and weight of the animal, the required specifications for the pet carrier, and limitations on the number of pets permitted per flight.

Pet travel services: A set of services offered by airlines to facilitate the transport of pets, from booking and purchasing tickets to preparing animals for the journey, including proper accommodation and compliance with local and international regulations. These services are designed to ensure the well-being of pets throughout the transportation process.

SSR: In aviation, SSR PETC is a Special Service Request (SSR) code used to book the transportation of pets in the passenger cabin.

Literature Review

The Federal Aviation Administration (FAA) regulations regarding pet transport in the passenger cabin lack specific safety guidelines (Federal Aviation Administration, 2022). While the FAA mandates that pet containers fit under the seat and be stowed properly during takeoff,

landing, and taxiing, it leaves the responsibility for determining pet suitability, container security, and in-flight management to individual airlines (Federal Aviation Administration, 2022). This ambiguity creates potential safety concerns, as airlines may have varying standards for pet temperament, carrier strength, and in-flight care, which could pose risks to passengers, crew, and the pets themselves (Federal Aviation Administration, 2022).

At the same time, the *Agência Nacional de Aviação Civil (ANAC) Portaria 12307/2023*, designed to regulate the transport of pets and emotional support animals on aircraft, establishes guidelines aimed at ensuring their safety and well-being. However, certain provisions within the regulation may unintentionally create potential risks for animal care by the crew. One key area of concern is the significant flexibility granted to carriers in restricting or denying animal transport. This broad discretion could lead to inconsistent treatment of animals across different airlines, potentially compromising their safety and comfort. Additionally, the *portaria* does not mandate specialized training for crew members in handling animals, which may limit their ability to respond effectively to emergencies or behavioral issues (Agência Nacional de Aviação Civil (ANAC), n.d.).

While regulations aim to ensure safe transport, incidents such as the dog bite on an American Airlines employee and passenger in Denver (Casinader, 2024) highlight the potential dangers associated with animal travel. One significant risk is unpredictable behavior. Even well-trained animals can exhibit unexpected reactions in unfamiliar and stressful environments like airplane cabins. Jahn et al. (2023) support this notion, indicating that a significant number of dogs traveling with their owners experienced stress or distress during the journey. This research explored reasons why pets and service animals can pose a risk on board aircraft.

The U.S. Department of Transportation addresses the regulations and responsibilities in the air transport of animals. The regulations require that dogs and cats be at least eight weeks old, that cages meet specific standards, and that animals are not exposed to temperatures below 45°F without a veterinary certificate. Airlines require health certificates, allow transport as accompanied baggage or unaccompanied cargo, and some allow kennels in the cabin. It is recommended to accustom the animal to the kennel, book space in advance, prefer direct flights, inform the crew about the animal in the cargo compartment, and ensure that the kennel and the animal have identification tags. Additionally, it is important to provide water and food as needed, avoid sedatives without veterinary guidance, and plan to meet specific health requirements for international travel (U.S. Department of Transportation, 2022).

The Animal and Plant Health Inspection Service (2021) emphasizes that ensuring the safety of pets during air travel is a critical responsibility for both pet owners and airport personnel. Proper preparation begins with selecting a suitable kennel that meets USDA (United States Department of Agriculture) requirements for size, construction, and cleanliness. The kennel must be secure, well-ventilated, and free from any sharp edges or harmful materials to protect the animal during transport. Additionally, it should be equipped with easily accessible food and water containers and clearly labeled with "Live Animal" signs and upright position indicators.

Beyond the physical kennel, the health and readiness of the pet are also paramount. Pets must be old enough to travel and in good health, with specific attention given to breeds that may be more vulnerable during air travel, such as short-nosed dogs and cats. It's important to ensure that pets have the appropriate temperament for air travel and are not overly aggressive or stressed. Necessary health certifications, including a Health and Acclimation certificate and, if

required, a Rabies Vaccination Certificate, must be obtained and kept up to date to confirm the pet's fitness for travel (“Animal and Plant Health Inspection Service”, 2021).

Finally, thorough documentation is essential to ensure pets reach their destinations safely. This includes owner contact information, detailed feeding and watering schedules, and clear routing information. All documents should be securely attached to the kennel in a visible, easily accessible pouch. By adhering to these guidelines, the risks associated with air travel for pets can be minimized, helping ensure that pets arrive safely and are happily reunited with their owners (“Animal and Plant Health Inspection Service”, 2021).

Studying animal welfare in the context of airline pet transport is essential not only for ensuring the health and comfort of pets but also from an economic perspective. The report on the pet travel services market highlights that "the growing demand for pet travel services underscores the need for higher standards of animal welfare during transport" (“Pet Travel Services Market Size”, 2023). Improving welfare standards can lead to increased consumer satisfaction and loyalty, which are crucial for the economic success of pet transport services. By addressing welfare concerns and implementing best practices, companies can differentiate themselves in a competitive market and reduce potential costs related to health issues and customer complaints (“Pet Travel Services Market Size”, 2023). Thus, investing in welfare improvements not only benefits animals but also supports the financial viability and reputation of pet transport businesses.

According to the text “VistaJet Sees 86% Increase in Pet Travel and Enhances its VistaPet Program with Dedicated Crew Training and More Pet Partners” (2021), there is a growing demand for pet-friendly services, especially in premium settings like private aviation, as reflected in the expansion of VistaJet's VistaPet program. This demand emphasizes the need for

trained personnel who can effectively manage pets in such environments. To meet this need, VistaJet provides specialized training for its Cabin Hostesses, covering areas like pet CPR (cardiopulmonary resuscitation), recognizing distress signals, and understanding pet behavior, ensuring the safety of the animals and peace of mind for their owners. As more people travel with their pets, having staff who can quickly address a pet's needs is crucial in preventing emergencies and enhancing customer satisfaction. This level of care not only safeguards the well-being of pets but also strengthens customer loyalty, as owners appreciate knowing their pets are in capable hands.

With the rise in the presence of animals in passenger cabins, there is also an increase in health risks for passengers with allergies. Approximately 10% of the population is allergic to animals, and with the transport of pets in the cabin, passengers with pet allergies have been exposed to potential allergic reactions in enclosed spaces. Being exposed in confined environments such as airplane cabins can lead to severe allergic reactions, including anaphylaxis and asthma exacerbations (Stanbrook, Kovesi, & Hébert, 2010).

During flights, at high altitudes and without immediate access to medical care, allergies can be very dangerous. Despite efficient air filtration systems, the risk of allergen exposure remains due to uncontrollable air circulation patterns. According to Stanbrook et al. (2010), studies have shown that pet dander persists on airplane seats long after the pet has left, making seating arrangements an ineffective solution. The author also points out that the study found clinically relevant concentrations of cat allergen in 100% of the seats analyzed on domestic flights, while 16% on international flights. The issue underscores the need for airlines to prioritize the health and safety of all passengers over the preferences of pet owners, suggesting that pets should be transported in cargo holds to mitigate health risks.

Methodology

Gap analysis is a structured methodology employed to assess the discrepancy between a current state and a desired future state. It helps identify the differences or "gaps" between your current situation and your goals. By doing this, we could see what needs to be improved or changed to reach the desired outcome. This study conducted a comprehensive assessment using qualitative methods to evaluate the current customer journey, focusing on the pet owner's experience. The analysis identified shortcomings and opportunities for improvement, grounded in a gap analysis framework to align with the research problem, goals, and scope of creating a more customer-centric process.

To ensure the gap analysis is thorough and comparable with future scenarios, a solid foundation of reference materials was essential. These materials, selected to align with the research questions and objectives, included current rules, manuals, and processes related to the pet owner's journey in each airline. This material provided a solid understanding of the current operational landscape and its impact on various stakeholders, including pet and non-pet owners, airline staff, and others. This approach ensures that future scenarios prioritize safety while being more customer-centric and adaptable, resulting in a seamless and more inclusive customer journey.

Data Collection

This study employed a qualitative approach to gain insights into in-cabin pet transportation practices in major Brazilian airlines. By analyzing relevant documents from Azul, Gol, and LATAM, we aimed to provide an understanding of the current state of the industry, enabling the identification of areas for improvement. Recommendations for enhancing the safety,

comfort, and overall experience for both pets and their owners can then be developed based on these findings.

Data Analysis

Data Collection

The data analysis for this capstone project was grounded in a combination of student insights, company manuals, and internal process flowcharts provided by Brazilian airlines. These sources offered an important view of current practices for in-cabin pet transport, ensuring a well-rounded understanding of operational standards. This data collection formed the foundation for identifying key gaps and opportunities for process optimization through detailed gap analysis.

Based on these data, each stage of the in-cabin pet transport process was thoroughly examined in the following chapters. Key aspects such as booking, check-in, boarding, in-flight, post-disembarkation, irregular operations and contingency procedures were analyzed, with a focus on the specific practices implemented by each airline. This approach provided a clear understanding of operations and laid the groundwork for the improvement recommendations presented in the final section of the study.

Pet Transport Purchase Processes

The first component of the pet transport processes is purchase, involving the selection of the pet transport option, understanding pricing, and meeting documentation requirements. This process highlights how each airline streamlines or complicates the experience for passengers. By examining the key purchasing steps and associated services, this chapter aims to help travelers make informed decisions based on their needs.

Booking Pet Transport

Passengers intending to transport pets in the cabin have various options across different airlines. It is generally recommended to book pet transport services well in advance due to limited availability, particularly on international routes. Most airlines provide guidelines on the weight and type of carrier required for in-cabin transport, with Azul and Gol having a limit of 10kg, and LATAM without weight restriction, if it meets the size limits of the transport compartment (Azul Airlines, n.d.; Gol Airlines, n.d.; LATAM Airlines, n.d.).

The booking process typically involves selecting the flight and adding the pet transport option. Passengers must specify whether the pet will travel in the cabin or the cargo hold, depending on the size and weight of the pet. It is essential to review specific regulations for the destination, including health certificates and vaccination documentation, which are usually provided during the purchasing process to ensure all paperwork is in order before the flight.

All three airlines require passengers to be at least 12 years old to transport pets, allowing only one pet per passenger. Furthermore, Azul and Gol have additional restrictions, prohibiting passengers traveling with infants or children under 12 from transporting pets as well. These policies help ensure the safety and comfort of both passengers and their pets during travel.

Azul and Gol offer a particularly user-friendly experience through their digital channels, where passengers can easily select pet transport options during the booking process, provided that the limit of allowed pets has not been exceeded. In contrast, LATAM only offers booking options through their customer service call centers. All three airlines also allow passengers to add the service at the airport counter/store with a minimum of four hours before the flight.

Payment, Confirmation and Post-Purchase

For Azul and Gol, payment for pet transport is typically processed concurrently with the flight ticket, streamlining the overall transaction. Upon completion of the payment, passengers receive confirmation emails or notifications containing detailed instructions regarding check-in times, seating requirements, and necessary documentation, including health requirements. In contrast, LATAM determines the number of pets on the flight and confirms boarding at the airport on the day of travel.

Moreover, confirmation emails from Azul and Gol often include specific instructions for transporting pets, such as carrier dimensions and seating restrictions, specifying that pets must be placed under the seat in front of the passenger. This approach ensures that passengers are well-informed of all requirements, allowing them to prepare adequately in advance of their travel date.

Passengers can add pet transport services post-booking, although the process and convenience vary by airline. Azul and Gol facilitate modifications directly through their digital channels, while LATAM necessitates contact with customer service for post-purchase additions. Last-minute additions are generally discouraged due to the risks of unavailability and potentially higher costs.

In addition to analyzing the purchasing flows, opportunities for improvement were identified based on what an ideal experience and process journey should entail. The gap between the current state and the desired future state is highlighted in Table 1 below. This analysis serves as a foundation for recommendations aimed at enhancing the overall pet transport experience for passengers.

Table 1. Purchase Processes Gap Analysis.

Current State	Desired State	Gap Analysis
<u>Booking channel</u> : Not all researched airlines offer a 100% online booking process for pet transport services.	User friendly online booking process for pet travel.	Some airlines still require booking (and subsequent changes) to be made via telephone, slowing down the process and adding inconvenience to the passengers. Others won't even confirm the availability of those seats until the passenger is already at the airport.
<u>Relevant regulatory information</u> : The information about the documentation and regulations is spread out on multiple sources.	Customers receive from the airline, in a clear and concise manner, all the relevant information about the applicable rules and the documentation that will be required during the journey, from the point of origin to the destination.	Airlines currently place the burden of finding and interpreting regulatory requirements on passengers, which can lead to confusion, mistakes, and non-compliance. Providing centralized, easily accessible, and clear information would enhance customer satisfaction and reduce errors.
<u>Seat Assignment</u> : Pets must be placed under the seat in front of the passenger, with restrictions varying by airline. Seat assignment and pet accommodation are not always clearly communicated.	Airlines provide clear, upfront communication during booking regarding which seats are available for pet accommodation, ensuring passengers can choose appropriate seating. Additionally, specific zones for pets are designated within the aircraft to ensure comfort and safety for both pets and passengers.	Current processes do not always make it clear which seats are suitable for pets, leading to potential inconvenience at check-in or boarding. Providing clear seating options during booking would improve the experience and ensure compliance with the airline's rules.

Pet Transport Check-in Processes

The check-in process for pets in the cabin (PETC) involves a series of detailed steps that ensure all legal, sanitary, and operational requirements are met before boarding. Initially, when arriving at the check-in counter, the passenger must inform the PETC service code, previously confirmed during the reservation, and present the required documentation for the pet. If the passenger has not confirmed the service, it may be accepted on an exceptional basis, depending on the availability of space on the flight (Azul Airlines, n.d.; Gol Airlines, n.d.; LATAM Airlines, n.d.).

Once the PETC service is confirmed, staff will verify compliance with mandatory documents, including a health certificate issued by a veterinarian within 10 days of travel, as well as the information entered in the SSR PETC, detailing the type of animal (dog or cat), weight, breed, age, and the specifications of the kennel. The kennel must adhere strictly to the airline's size and safety requirements, ensuring that the pet can move comfortably within it. The subsequent step in the check-in process involves verifying payment, ensuring that the PETC service has been paid; if payment was made through the Call Center, it is associated with the ticket number to the PETC service.

The PETC checklist must be fully completed to confirm compliance with all regulations. Failure to meet any of the requirements results in denial of boarding for the pet, even if the service was previously confirmed. Once the documentation, payment, and compliance requirements are verified, the passenger and pet are cleared to proceed to the boarding area, where they are informed of the need to keep the pet inside the kennel throughout the flight, with no allowance for feeding or letting the pet out during the journey (Azul Airlines, n.d.; Gol Airlines, n.d.; LATAM Airlines, n.d.).

In addition to evaluating the check-in processes and procedures, opportunities for improvement have been identified. These opportunities are grounded in the vision of an ideal experience and process journey for passengers and their pets. The gap between the current state and the desired future state is also illustrated in Table 2 below.

Table 2. Check-in Processes Gap Analysis.

Current State	Desired State	Gap Analysis
<u>Regulatory differences among aviation authorities</u> : The rules for pet transportation vary by aviation authority, meaning that a passenger may comply with the regulations of the country of departure but encounter issues upon return.	A harmonized framework for pet transportation regulations across aviation authorities to ensure seamless compliance for travelers.	Current regulatory disparities create confusion and non-compliance risks for pet owners, necessitating the development of standardized guidelines and a centralized information platform to bridge the existing knowledge and coordination gaps among authorities.
<u>Inconsistent Regulations</u> : strictly following the companies' rules makes transportation unworkable.	A set of coherent and practical regulations for pet transportation that balances safety with feasibility for implementation.	Existing regulations impose impractical requirements, such as strict maneuverability restrictions, which hinder effective transportation; thus, there is a critical need to align safety standards with realistic operational capabilities for pet carriers.
<u>Unclear policy</u> : policy doesn't include criteria, procedures, and travel conditions.	A comprehensive policy framework that clearly outlines criteria, procedures, and travel conditions for pet transportation.	The current lack of clarity in policy leads to confusion and inconsistent practices among stakeholders, highlighting the need for explicit guidelines to ensure effective implementation and compliance.
<u>IATA Live Animals Regulations (LAR)</u> : doesn't contain PETC recommendations.	An inclusive revision of the IATA Live Animals Regulations (LAR) that integrates PETC	The absence of PETC recommendations in the current LAR indicates a disconnect between industry

	recommendations to enhance the welfare of transported pets.	standards and best practices for pet welfare, necessitating the incorporation of these recommendations to ensure comprehensive and humane transportation guidelines.
<u>Lack of transparency</u> : airport agents don't act due to unclear policies.	A transparent policy framework that ensures equitable treatment of pet owners by airport agents during the transportation process.	The current lack of clear policies leads to inconsistent practices and perceived unfairness by airport agents, underscoring the need for well-defined guidelines to promote fairness and accountability in pet transportation.
<u>Extended Check-in Queues</u> : Prolonged wait times at the check-in counter, attributed to pet verification processes or other delays, resulting in heightened frustration and anxiety.	A streamlined check-in process for pet transportation that significantly reduces wait times and enhances the overall travel experience for pet owners.	Current extended check-in queues caused by inefficient pet verification processes contribute to increased frustration and anxiety among travelers, indicating an urgent need for improved operational efficiency and resource allocation at check-in counters.

Pet Transport Pre-Boarding and Boarding Processes

Before entering the boarding area, pets must undergo security procedures at the X-ray checkpoint. During this process, the pet needs to be removed from the kennel and guided by the owner through the metal detector, while the kennel is scanned separately (Agência Nacional de Aviação Civil [ANAC], 2023). It is crucial to adhere to the instructions provided by airport security agents to ensure that the procedure is conducted smoothly and efficiently; once completed, the pet must be placed back in the kennel to continue to the boarding area.

Within the boarding area, the movement of pets is highly restricted. Animals must remain either inside their kennel or on the owner's lap, in accordance with terminal regulations.

Allowing pets to roam freely, even on a leash, is prohibited, and in dining areas, pets must remain in their carriers and should not be placed on tables or chairs (Agência Nacional de Aviação Civil [ANAC], 2023).

Upon boarding, passengers traveling with pets undergo an additional document verification process at the gate, where the checklist validated during check-in is re-examined. To enhance the passenger experience and minimize wait times, pet owners are typically allocated to the first boarding groups. There are no specific recommendations regarding boarding in the remote area or at the gate finger.

In addition to the procedures of the pre-boarding and boarding process, opportunities for improvement were identified. These are based on what an ideal experience and process journey should be. The gap between the current state and the future state was also highlighted in Table 3 below.

Table 3. Pre-Boarding Process Gap Analysis.

Current State	Desired State	Gap Analysis
<u>Ambiguous Documentation Obligations</u> : confusion regarding the necessary documentation, such as health certificates and vaccination records, particularly when requirements vary between airlines or destinations.	A clear and standardized documentation framework for pet travel that specifies required health certificates and vaccination records across all airlines and destinations.	The current ambiguity in documentation obligations, exacerbated by varying requirements among airlines and destinations, leads to confusion and compliance challenges for pet owners, highlighting the need for a unified approach to streamline and clarify these requirements.
<u>Lack of Pet-Friendly Waiting Area</u> : The limited availability of adequate space at waiting areas for pets and their	Adequate and designated space at waiting areas specifically designed to comfortably accommodate pets and their owners before the boarding process.	The current lack of sufficient space for pets at the airport results in discomfort and logistical challenges, indicating a need for improved infrastructure and

owners.		design to enhance the overall travel experience for pet owners.
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Pet Transport In-Flight Processes

Passengers traveling with pets face specific seating restrictions across all airlines. In all Brazilian airlines, passengers with pets are prohibited from sitting in emergency exit rows or the first row of the cabin. LATAM mandates that passengers occupy aisle seats, while Azul and Gol require the use of window seats, with Azul imposing additional restrictions based on the aircraft model. Regardless of the airline, pets must remain in their kennel for the duration of the flight, securely stowed under the seat in front of the passenger.

Flight attendants play a crucial role in ensuring that pets are properly accommodated throughout the flight while adhering to safety protocols. On Gol flights, a cabin crew member conducts an additional verification of the pet's documentation to ensure compliance with all requirements. This includes confirming that animals do not obstruct emergency exits or escape routes, which is vital for the safety of all passengers onboard.

When necessary, flight attendants are required to re-seat passengers and their pets to uphold safety protocols and minimize potential risks during emergency situations. Re-seating may also occur at the request of other passengers who have allergies or other restrictions on being near animals. However, it is important to note that passengers may still be exposed to pet dander during flights, even when no pets are present in the cabin, as most allergens are carried into the cabin on the clothing of other passengers (Federal Aviation Administration [FAA], 2022).

Pet owners are responsible for bringing adequate food and water for their animals, ensuring their needs are met throughout the flight. Feeding pets must be conducted without

removing them from their kennels. While not an official airline procedure, some promotional actions may occasionally offer treats for pets.

In addition to examining the in-flight procedures, opportunities for improvement have been identified. These opportunities primarily focus on enhancing safety and emergency procedures. The gap between the current state and the desired future state is illustrated in Table 4 below.

Table 4. In Flight Processes Gap Analysis.

Current State	Desired State	Gap Analysis
<u>Seating Restrictions:</u> Airlines adopt different seat restrictions for passengers with pets.	Standard and uniform policies across all airlines on which seats are allowed and which are restricted for pet transport.	The current seating policies vary by airline, causing confusion and inconsistency. Standardizing these policies across airlines would simplify the process and improve clarity for passengers.
<u>Pet Feeding and Hydrating:</u> There is a lack of clear guidelines for owners on how to feed and hydrate their pets during the flight.	Airlines offer a realistic policy on pet feeding and hydrating on-board, depending on flight time. On longer flights, opening the kennel to feed and hydrate the pet is allowed.	The current lack of clear procedures on feeding and hydrating pets during the flight can lead to discomfort for the animals, particularly on longer flights. Implementing safe, regulated procedures for feeding and hydrating pets could improve their well-being while maintaining safety protocols.
<u>Pet First Aid:</u> Airlines do not provide any specific first aid procedures or kits for pets during flights. Pet owners are solely responsible for addressing any health concerns their pets may face during the journey.	Airlines equip flight attendants with basic pet first aid training and provide pet first aid kits onboard to handle minor health issues during the flight.	The lack of pet first aid measures onboard can pose risks to the health and safety of pets during long flights. Implementing basic first aid procedures and kits for pets could prevent minor issues from escalating and offer peace of mind to pet owners.

<p><u>Pet Risks to Passengers:</u> Passengers are exposed to potential pet allergens during flights, even if there are no pets in the cabin, as allergens can be carried on clothing. Airlines do not have clear procedures to mitigate these risks.</p>	<p>Airlines implement clear guidelines to minimize allergen exposure, including designated pet-free zones and proactive communication to passengers about potential risks during booking.</p>	<p>Currently, there are limited measures to address the risk of allergens from pets. Introducing designated pet-free seating areas and providing clear communication regarding allergen exposure could reduce discomfort and health risks for sensitive passengers.</p>
<p><u>Turbulence:</u> During turbulence, pets must remain in their kennels, stowed under the seat. However, there are no specific protocols for ensuring the pet's well-being, and stress conditions after the turbulence.</p>	<p>Airlines provide specific guidance to passengers on how to ensure the well-being of the pet after the turbulence.</p>	<p>The lack of clear protocols for handling pets after turbulence may lead to unsafe conditions for the pet. Implementing clearer procedures and safety measures would reduce the impact of severe turbulence.</p>
<p><u>Depressurization:</u> There are no specific procedures for pets during cabin depressurization events. Oxygen masks are provided for passengers, but no similar provisions are available for pets.</p>	<p>Airlines implement clear procedures for pet safety during depressurization events, including dedicated oxygen masks for pets or alternative solutions to ensure their well-being.</p>	<p>The absence of specific depressurization protocols for pets creates a significant safety risk during emergencies. Providing pet-specific safety measures, like oxygen masks, would improve their chances of surviving such incidents and reassure pet owners.</p>

Pet Transport Post-Flight Processes

After air travel with a pet in the cabin, it is essential to adopt special care and attention to ensure the safety, comfort, and well-being of the animal. At the start of disembarkation, passengers traveling with pets on Azul and Gol are advised to disembark last, allowing for a calm removal of the kennel from under the seat and ensuring a smooth transition out of the aircraft. It is important to emphasize that, even during the disembarkation process, pets should not be removed from their transport compartments.

Once in the airport lobby, it is necessary to observe the animal's behavior and take it to specific areas for feeding, hydration, and relief of physiological needs. Few airports have adequate structures to meet this demand; otherwise, it is necessary to request information on which areas can be used for this purpose.

Post-Disembarkation Procedures: Passengers Arriving at the Destination

Procedures vary for passengers arriving at the destination and those making a connection. In the case of disembarkation at the destination, especially on international trips, documents may be requested for customs processes. Documents certifying health, vaccinations, and sanitary checks will be required for presentation to immigration officers.

Post-Disembarkation Procedures: Passengers in Connection

For passengers making a connection, a health check of the animal is required before proceeding to the connecting flight. It is essential to assess for signs of stress or health problems resulting from the trip. If any abnormal behavior is noticed, a veterinarian should be contacted before continuing the journey.

Before the next flight, it is important that the animal is adequately fed, hydrated, and comfortable to continue the journey. The boarding procedure for the second flight follows the same standards and norms as the first boarding. The kennels, the physical condition of the animal, and the travel documentation may be reviewed again. The passengers should also clean the kennel to ensure the compartment is adequately sanitized for the next leg of the journey.

In addition to examining the post-flight procedures, opportunities for improvement have been identified. These opportunities primarily focus on enhancing safety and emergency procedures. These are based on what an ideal experience and process journey should be. The gap between the current state and the future state was also highlighted in Table 5 below.

Table 5. Post-Flight Processes Gap Analysis.

Current State	Desired State	Gap Analysis
<u>Disembarkation</u> : Brazilian airlines adopt different disembarkation models for passengers with pets. While some flights reallocate to disembark last, other flights instruct passengers with pets to disembark first due to their seating positions.	Once seat restrictions are standardized with a focus on operational safety and emergency evacuations, the disembarkation model for passengers with pets should be standardized.	The models for seat restrictions and disembarkation instructions are contradictory. It is important that these definitions are standardized and regulated according to what makes the most sense from a safety and operational efficiency perspective.
<u>Connection</u> : Few airports have widespread pet-friendly areas.	Designated pet-friendly areas with amenities like seating, relief areas, water stations, and pet-friendly amenities.	The primary gap is the lack of these areas, which can inconvenience pet owners.
<u>Documentation</u> : Passengers with international connections will be subject to document validation on boarding for the next flight.	The verification of documentation and compliance with entry criteria with pets in other countries must be thorough, aiming to validate the restrictions and conditions of the connecting and destination countries.	If the document verification is not complete considering the final destination's restrictions at the first boarding, the passenger may be prevented from completing their journey during the connection.
<u>Connection time</u> : Passengers traveling with pets may have access to flights with extremely short connections, preventing sufficient time for feeding, hydration, and cleaning the kennel.	Passengers traveling with pets should be advised on the ideal connection time between flights to ensure enough time on the ground for care and preparation for the next flight.	In many situations, animals cannot be fed, hydrated, and cleaned due to the short connection time.

The Pet Transport Irregular Operations and Contingency Processes

According to ANAC Ordinance No. 12.307/SAS, in the event of an irregular operation such as a flight delay or cancellation, airlines are obligated to assist passengers and their pets if boarding is denied due to these circumstances. This assistance may include providing alternative

transportation arrangements, accommodations, or other necessary support (Agência Nacional de Aviação Civil [ANAC], n.d.).

Irregular Operations and Contingencies Causing Boarding Delays

When a flight is delayed, canceled or diverted, passengers are typically re-accommodated on the next available flights or with other airlines operating the same route. If the wait time for the next flight is excessively long, airlines must provide assistance to passengers and extend it to pets whenever possible (Benevides, 2022). However, not all airports and airlines have the resources to assist affected animals, which can significantly impact the passenger experience and compliance with regulations.

Another point of concern arises when a flight is canceled, and re-accommodation is arranged with partner airlines. The partner airline may not accept or have availability for pet transport in the cabin. Consequently, the passengers may become ineligible for re-accommodation and will have to wait for the next flight of the original airline, which could be the following day.

Irregular Operations and Contingencies Requiring Hotel Accommodation

Airlines typically maintain a network of pet-friendly hotels to accommodate passengers and their animals in the event of flight disruptions. The booking systems can identify reservations requiring pet-friendly accommodation and inform which hotels are prepared for this. If no pet-friendly hotel is available, especially in smaller cities, the airline's accommodation partners may attempt to secure non-partner hotels. As a last resource, passengers may independently find suitable accommodation and subsequently request reimbursement from the airline.

Irregular Operations and Contingencies Involving Emergencies

The onboard manuals of Azul, Gol and LATAM do not provide specific procedures for handling emergencies, evacuations or other contingencies involving animals, such as health or hygiene issues. In the event that a pet becomes ill during the flight, the captain must be informed immediately, and appropriate actions should be taken to address the situation. However, those appropriate actions are not detailed in the manuals.

In 2023, Azul and Gol conducted evacuation simulations for passengers with disabilities on an Airbus A320 and a Boeing 737, respectively. These simulations, which specifically focused on individuals with disabilities, also included two passengers traveling with animals. The behaviors of both the animals and passengers, as well as associated risks, were analyzed during the evacuations, with one animal inside a kennel and the other outside. Nevertheless, the samples did not yield definitive results.

In addition to the procedures of the irregular operations and contingency processes, opportunities for improvement were identified. These are based on what an ideal experience and process journey should be. The gap between the current state and the future state was also highlighted in Table 6 below.

Table 6. Irregular Operations and Contingency Processes Gap Analysis.

Current State	Desired State	Gap Analysis
<u>Assistance to Pets:</u> Pets on contingency flights do not receive full assistance from airlines as required by regulations.	All pets on flights that have experienced an irregular operation or contingency need to be cared for with proper food, hydration, and adequate spaces to wait for the next flight.	Airlines do not have food services for pets, and airports do not have adequate waiting spaces for pets to be comfortably assisted in cases of long delays or cancellations.
<u>Rebooking:</u> In situations where passengers need to be	Passengers with pets should not face more difficulties	In cases of rebooking on partner airline flights,

rebooked, passengers with pets face more difficulties and have more restricted rebooking options.	when being rebooked with their pets. Partner airlines should have agreements to accept passengers who need to transport pets.	passengers with pets are often not accepted due to partnership restrictions.
<u>Hotel Accommodations:</u> Although passenger accommodation in hotel systems offer pet-friendly options, these options are limited and may not be available. In some cities, there are no hotels that accept passengers with pets.	Airlines should have partner hotels in all operating cities to accommodate passengers with pets. In cases of unavailability, it should be the airline's responsibility to find another viable solution.	When there is no availability of pet-friendly hotel accommodation, passengers are advised to look for alternatives and then request reimbursement from the companies. This experience is not good and requires the passengers to solve a problem that should be resolved by the airlines.
<u>Evacuation Process:</u> No specific regulations or standardized procedures exist for pet evacuation during airline emergencies. Passengers with pets likely do not know how to act in such situations.	Implement clear guidelines for pet prioritization, passenger orientation, and training for staff and flight attendants to act appropriately in cases of evacuation on flights with passengers with pets.	The significant gap is the lack of standardized procedures for pet evacuation, which can lead to inconsistencies and safety risks. In simulations conducted by Azul and Gol, the evacuation of passengers with pets did not occur as expected.
<u>Emergencies:</u> There is no clarity on how emergency procedures should be adopted for pets. The cabin crew is not adequately trained and prepared to care for pets in unconventional situations.	Emergency procedures should include considerations and standardization of procedures for caring for pets in adverse and emergency situations.	The lack of training and procedures puts the health and life of animals at risk, as well as the safety of other passengers.

This section concludes the exploration of the pet transportation process in airline cabins, where each stage was thoroughly mapped and examined. From this analysis, relevant insights emerged, highlighting key gaps that should be addressed to improve both customer experience and airline operations. In the next section, the project outcomes will be presented, focusing on these gaps and providing recommendations to enhance the current transportation procedures.

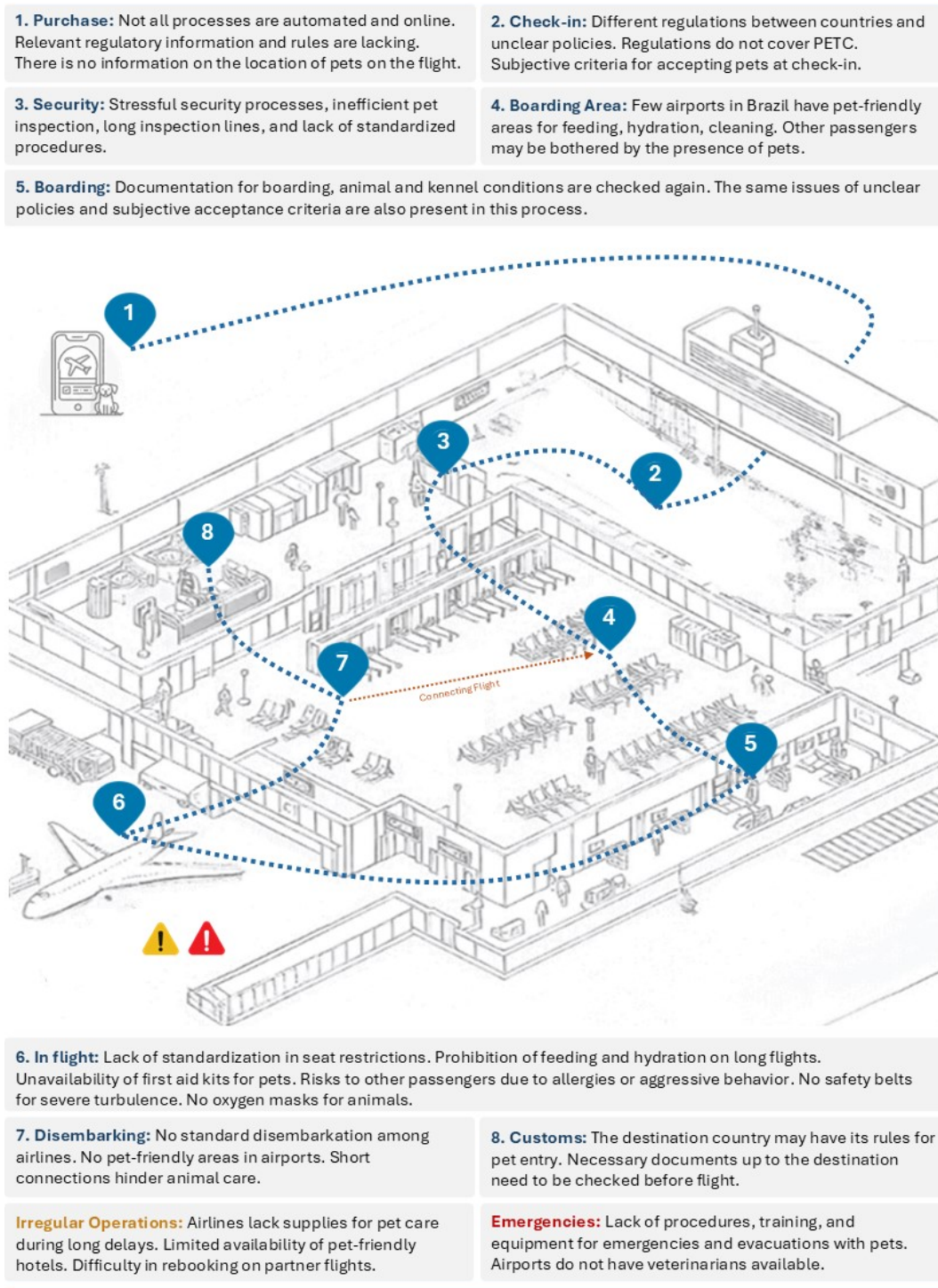
Project Outcome

To begin our analysis, we consulted experts from major Brazilian airlines. These specialists provided valuable insights, combining regulatory foundations with practical experience gained over years in the industry. Their perspectives were crucial for understanding the current landscape of airline operations in Brazil, particularly in relation to the evolving demands of pet transport. Through in-depth discussions, we explored the nuances of operational challenges, customer expectations, and the regulatory environment, which helped us frame our approach to the subject matter.

In addition to expert consultations, we conducted a thorough examination of the relevant policies, procedures, and regulations governing the pet transport process. This comprehensive review ensured that our analysis was grounded in the latest legal frameworks and industry standards. By scrutinizing these guidelines, we were able to identify the best practices that could enhance service quality and operational efficiency. This understanding also allowed us to pinpoint potential areas for improvement, ensuring that our recommendations would be both practical and aligned with regulatory requirements.

After synthesizing the gathered information, we compiled it into this document. This consolidation aims to clearly define the current state of pet transport services, outline the desired outcomes, and identify existing gaps in the process. By organizing this information effectively in Image 1, we facilitated the understanding of the issues at hand, paving the way for informed decision-making and strategic improvements. This structured approach not only clarifies the challenges but also serves as a foundation for developing actionable strategies that can enhance the overall travel experience for pet owners.

Image 1. Gaps by Stages of the Passenger Journey.



The research conducted throughout this project enabled the creation of a gap analysis of the processes, procedures, and journeys of passengers traveling by plane with their pets in the

cabin. The challenges related to these gaps involve airlines, airports, and governmental and regulatory aviation bodies in Brazil. Addressing the identified gaps will enhance passenger experience, improve the safety of pet transportation operations, and ensure better safety and emergency procedures on flights with animals on board.

As the demand for pet transportation in the cabin increases in Brazil, a complete regulation of this type of transport becomes increasingly important. The subjectivity of airline rules and limitations, the absence of PETC transportation standards, and the lack of regulatory oversight pose serious risks to the health and lives of transported animals. For instance, there is still no clear procedure for cabin depressurization or emergency evacuation in flights with pets on board. Considering recent incidents and accidents involving animal transportation, the government has given more attention to this issue and has formulated some regulatory proposals. However, the primary focus of these regulations is on the transportation of animals in the cargo hold. The transportation of animals in the cabin alongside passengers remains undefined and urgently needs to be addressed.

Limitations in the data and future study considerations

The current study, while comprehensive, has certain limitations. The focus on major Brazilian airlines may not fully capture the diversity of practices across smaller regional carriers and airlines from other countries. Additionally, the reliance on existing regulations and airline policies may not reveal all potential gaps or challenges in pet transportation.

To comprehensively understand pet transportation in Brazil, future research should explore multiple dimensions. A broader comparative analysis of airline practices, coupled with direct feedback from pet owners and case studies of specific incidents, can provide valuable

insights. Additionally, international benchmarking can reveal the best practices and potential areas for improvement.

To enhance safety and preparedness, future research should prioritize developing standardized procedures for pet evacuation. Regular simulations and drills can refine these procedures, identifying bottlenecks and ensuring a coordinated response during emergencies. This will contribute to a safer and more efficient pet transportation experience.

For instance, a wider comparative analysis could involve surveying a larger number of airlines, including regional carriers, to identify variations in practices and identify emerging trends. Additionally, conducting surveys with pet owners would provide direct insights into their experiences and concerns. Case studies of specific incidents could help to identify root causes and potential solutions. Finally, international benchmarking could reveal the best practices and innovative approaches implemented in other countries.

Conclusions and Recommendations

Conclusion

This study identified critical gaps in the cabin transportation of pets on Brazilian airlines, emphasizing the need for improvements in purchase processes, check-in, pre-boarding and boarding, in-flight, post-flight, irregular operations and emergencies. The lack of standardization and clarity impacts both the passenger experience and pet safety. Through this research, we highlighted failures in communication, regulatory adherence, airlines procedures and airport infrastructure. The findings underscore the importance of addressing these gaps to enhance customer satisfaction and operational efficiency, while also ensuring the safety of pets in transit. Additionally, this study suggests the need for future research to further enhance practices related to animal transportation in commercial flights.

This research is significant for the aviation sector as it fills critical knowledge gaps regarding the growing demand for pet transportation in cabins. The findings are essential not only for improving customer experience but also for ensuring compliance with international regulations and minimizing safety risks. Airlines must develop clear emergency protocols for pets, including scenarios such as cabin depressurization and evacuation procedures, to guarantee animal safety in unforeseen circumstances. Aligning these practices with international standards, such as enhancing the IATA Live Animal Regulations (LAR) to include specific guidelines for pets in cabin (PETC), presents a key opportunity for the global aviation industry to standardize processes. By adopting recommendations from this study, airlines can mitigate risks and enhance the overall travel experience for pet owners worldwide.

Recommendations

For the purchase process, it is recommended to modernize booking platforms, allowing the entire process to be conducted digitally with centralized information on regulations and availability of seats for pets. This would not only reduce the burden on passengers but also minimize errors and frustrations caused by a lack of clarity and transparency in the requirements. Offering these improvements would enhance customer satisfaction and optimize airline operational efficiency.

In the check-in process, it is critical to implement standardized and easily accessible guidelines for passengers and airport agents. The current lack of clarity in practices can be mitigated with a centralized information system, ensuring that all stakeholders follow the same rules. Additionally, the standardization of safety requirements, such as the size and characteristics of pet carriers, would bring greater predictability and compliance. This alignment

can be further expanded by incorporating recommendations from the IATA LAR, adapted to the specific needs of in-cabin pet transportation.

In the pre-boarding process, the creation of exclusive check-in lines for passengers with pets, along with improved infrastructure in waiting areas, would help reduce stress and anxiety for both animals and their owners. Moreover, greater clarity in the documentation required and verification processes would prevent unnecessary confusion and delays. Investing in dedicated infrastructure, such as appropriate spaces for pets at airports, would also increase comfort and facilitate the logistical management of animals.

During in-flight operations, it is essential to standardize policies among airlines to allow the safe feeding and hydration of pets, particularly on long flights. This should be regulated through secure procedures. Furthermore, the introduction of pet-specific first aid kits onboard and the training of the crew for emergency situations, such as turbulence or depressurization, would ensure safer travel for animals. The standardization of policies across all airlines regarding which seats are allowed and which are restricted for pet transport should be regulated according to what makes the most sense from a safety and operational efficiency perspective. The creation of pet-exclusive zones could address this matter.

For post-flight processes, standardizing seat restrictions and disembarkation instructions would avoid conflicts and increase operational efficiency. Additionally, ensuring that document verification considers all destination requirements would prevent passengers from being denied entry during connections. Airlines should also formalize procedures for feeding and hydrating pets on long flights, facilitating a smooth and safe journey for animals.

In irregular and contingency operations, airlines should develop appropriate services and infrastructure for pets, such as waiting areas and feeding stations at airports. In case of delays or

cancellations, it is important that airlines provide pet-friendly accommodation, and the reallocation of passengers with pets on partner flights should be simplified. Clear evacuation protocols for pets during emergencies must also be established, with proper crew training to ensure the safety of animals and other passengers.

Finally, this study emphasizes the importance of continuing research and development in improving in-cabin pet transportation, with a focus on adapting international regulations and leveraging new technologies to optimize passenger experience and animal safety.

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