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# The Rise of Airplane Hotels - A New Business Model for Retired Aircraft

Harshita Bumra, Prof. Dr. Neha Bhatia

Researcher, Department of Management, School of Business, Galgotias University, Greater Noida, U.P., India

Assistant Professor, Department of Management School of Business, Galgotias University, Greater Noida, U.P., India

**ABSTRACT:** This research explores the innovative concept of airplane hotels—boutique accommodations created by repurposing retired commercial planes. These hotels address two major industry challenges: the sustainable disposal of aging aviation assets and the rising demand for experiential, eco-conscious travel. Through an integrated method combining a comprehensive literature review, real-world case studies (such as Jumbo Stay in Sweden), and primary data collected from a survey of 50 respondents across the aviation, hospitality, and travel sectors, the study assesses the viability and consumer belief of this emerging hospitality model. Key findings reveal that while general awareness is still low, consumer interest significantly increases once the concept is introduced. Many participants expressed a willingness to pay a mid-range premium, especially when sustainability and uniqueness are emphasized. The paper concludes with strategic recommendations for tourism entrepreneurs, aviation stakeholders, and policymakers to foster innovation, sustainability, and value creation through adaptive reuse in the hospitality industry.

**KEYWORDS:** Airplane hotels, sustainable tourism, experiential travel, aviation asset reuse, circular economy

## I. INTRODUCTION

The global aviation industry is undergoing a significant transformation as technological advancements, environmental regulations, and economic factors drive the retirement of older plane models. According to projections by Airbus and Boeing, over 15,000 commercial planes are expected to be retired by the year 2040. Traditionally, these planes are dismantled for parts or left in long-term storage facilities, often referred to as “aircraft graveyards.” While some components are recycled, much of the fuselage and interior fittings are discarded, contributing to environmental degradation and wasted material resources. At the same time, the travel and tourism sector are evolving in response to changing consumer preferences—especially in the post-pandemic era. Today’s travellers, particularly Millennials and Gen Z, are increasingly drawn to experiential tourism that offers meaningful, story-rich, and Instagram able moments. The demand for alternative accommodations—such as treehouses, clamping sites, cave hotels, and underwater suites—is rising sharply. Within this shift, airplane hotels have appeared as a compelling niche that combines sustainable innovation with immersive guest experiences.

These hotels involve the creative adaptive reuse of retired planes—transforming them into boutique or themed hospitality spaces. Notable examples include Jumbo Stay in Sweden, a converted Boeing 747 parked near Stockholm Arlanda Airport, and the Hotel Costa Verde in Costa Rica, which features a luxury suite built inside a decommissioned Boeing 727 overlooking the jungle and ocean. These projects not only reduce landfill waste but also capitalize on the nostalgic and emotional appeal of aviation, offering guests a one-of-a-kind stay. This study investigates the viability, consumer feeling, environmental benefits, and economic potential of airplane hotels. It aims to provide insights for tourism innovators, aviation businesses, and policymakers looking to align sustainability with profitability through creative reuse of retired aviation assets.

## II. LITERATURE REVIEW

The emergence of airplane hotels as a sustainable tourism innovation draws upon interdisciplinary themes from aviation, hospitality, and sustainability literature. Prior studies and industry analyses converge around three central concepts: sustainability through adaptive reuse, business model innovation, and the rise of experiential tourism. However, several critical gaps are still in understanding the full viability of this model.

## 2.1 Sustainability and Circular Economy

The aviation industry faces growing scrutiny about the environmental impact of plane disposal. As planes reach the end of their economic life, conventional disposal methods—such as dismantling and scrapping—result in significant material waste, particularly from composite structures, insulation, and interiors that are not easily recyclable. Heyes (2016) emphasizes the need for sustainable consumption practices in aviation-linked services, highlighting that creative reuse aligns with the principles of responsible consumption outlined in the United Nations Sustainable Development Goals (SDG 12).

Ribeiro and Gomes (2015) proposed a structured framework for plane recycling and end-of life reuse, emphasizing the potential of repurposing airframes for commercial, educational, or hospitality use. Airplane hotels are a practical embodiment of circular economy principles, transforming aviation waste into revenue-generating assets.

This shift stands for an eco-conscious alternative that reduces reliance on traditional construction materials and supports low-carbon tourism infrastructure.

## 2.2 Business Model Innovation in Hospitality and Aviation

The conversion of planes into hotels exemplifies a disruptive business model that merges aviation legacy with modern hospitality. Santos and Spector (2009) argue that legacy industries can reinvent their value propositions through strategic business model innovation, particularly by embracing sustainability and customer-centric design.

Airplane hotels also address asset underutilization in the aviation sector. Repurposing decommissioned planes extends their functional life, converting a liability (retired planes) into a differentiated service offering. This model allows aviation companies to diversify into tourism markets, while hospitality players gain a distinctive product that appeals to niche traveller segments.

## 2.3 Experiential and Niche Tourism

The rise of experiential tourism is a defining trend in the global travel market. Li (2024) and Balakrishnan & Christopher (2023) emphasize that Millennials and Gen Z consumers increasingly seek personalized, story-rich, and Instagram able stays. Their preferences are driven more by emotional engagement and authenticity than traditional luxury metrics.

Airplane hotels cater directly to these preferences by offering a novel and immersive experience, combining aviation nostalgia, eco-conscious values, and thematic aesthetics. The unique setting—such as sleeping in a cockpit suite or dining in a plane galley—transforms accommodation from a necessity into a memorable highlight of the travel journey. In line with the “Experience Economy” theory by Pine and Gilmore, travelers today value immersive experiences over products or services. Airplane hotels capitalize on this shift by delivering a stay that blends adventure, comfort, and visual storytelling.

## 2.4 Research Gaps

Despite the conceptual and theoretical support for airplane hotels, several research gaps persist:

- **Consumer Behavior:** Limited studies explore actual willingness to pay for airplane hotel stays or how factors such as location, amenities, and design influence customer decision-making.
- **Operational Feasibility:** There is insufficient data on the long-term costs, maintenance challenges, and compliance issues associated with converting planes into hotels.
- **Scalability and Standardization:** Few global benchmarks or regulatory frameworks exist for such conversions, creating uncertainties around legal, safety, and zoning considerations.



- Economic Impact: Detailed ROI analysis, lifecycle cost comparisons with conventional hotels, and sustainability metrics are still under-explored.

While the literature shows a compelling foundation for airplane hotels as a sustainable and innovative business model, deeper empirical research is needed to assess market readiness, financial viability, and operational challenges. This study aims to bridge some of these gaps through primary data collection and analysis.

### **III. RESEARCH OBJECTIVES AND METHODOLOGY**

This research aims to explore the potential of airplane hotels as an innovative, sustainable, and commercially workable hospitality model. By combining theoretical frameworks, market insights, and empirical data, the study looks to evaluate the multidimensional feasibility of converting retired planes into boutique hotel spaces. The research is structured around five core goals, followed by a well-defined method to address them systematically.

#### **Research Objectives**

##### **To assess the financial viability of airplane hotels:**

The study investigates the economic potential of airplane hotels by examining customer willingness to pay, price sensitivity, and projected return on investment (ROI). It also explores the cost implications of plane acquisition, retrofitting, and operations compared to traditional hotel infrastructure.

##### **To examine the environmental and social sustainability benefits:**

This goal evaluates how airplane hotels align with sustainability goals, particularly in reducing aviation waste, promoting adaptive reuse, and contributing to eco-tourism. It also considers their potential to support local economies and create employment opportunities through tourism diversification.

##### **To evaluate consumer preferences and demand:**

The study analyses travel behaviors, motivations, and psychographic preferences, especially among Millennials and Gen Z travelers who prioritize novelty and sustainability. It examines which features (e.g., design, location, eco-certification) influence guest interest and booking decisions.

##### **To find operational and regulatory challenges:**

The research explores practical considerations such as site selection, retrofitting difficulties, building code compliance, aviation safety standards, and zoning laws. It also assesses risk management, insurance, and long-term maintenance demands.

##### **To provide strategic insights for market entrants:**

Based on findings, the study aims to offer actionable recommendations for aviation stakeholders, tourism entrepreneurs, and hospitality investors looking to innovate through airplane hotels. Strategic insights include pricing models, marketing approaches, and sustainability integration.

#### **Research Methodology**

A descriptive research design was adopted to provide a structured understanding of consumer beliefs, market trends, and operational feasibility of airplane hotels. This approach allowed for both quantitative and qualitative exploration, combining empirical data with real-world case studies.

##### **Primary Data Collection: -**

###### **• Survey Instrument:**

A structured questionnaire was designed with a combination of multiple-choice, Likert scale, and closed-ended questions. The survey covered topics such as awareness of airplane hotels, perceived appeal, willingness to stay, price expectations, environmental considerations, and preferred features.

**• Sample Size and Population:**

A total of 50 respondents taken part in the study. The sample was selected using purposive sampling to include individuals with relevant experience or interest in aviation, hospitality, and frequent travel. This included aviation professionals, hotel staff, travel bloggers, and leisure tourists.

**• Sampling Method:**

The non-probability purposive sampling method was chosen to ensure that data came from informed participants who could offer insights into feasibility, sustainability, and consumer behavior.

**• Mode of Distribution:**

The questionnaire was distributed both online (via Google Forms) and offline (in person) over a span of two weeks. Respondents were briefed on the research purpose, and participation was voluntary and anonymous.

**Secondary Data Collection: -****• Case Study – Jumbo Stay (Sweden):**

An in-depth case analysis of the Jumbo Stay airplane hotel was conducted to understand real-world implementation. Key aspects studied included design adaptation, operational challenges, market reception, and profitability indicators.

**• Literature Review:**

Existing academic papers, industry reports, sustainability frameworks, and tourism market analyses were reviewed to contextualize primary findings and find theoretical foundations.

**Rationale for Methodology**

This mixed-method approach ensures comprehensive insight:

- Quantitative data enables measurement of consumer trends, preferences, and market potential.
- The case study offers qualitative depth, helping to show critical success factors and barriers in real-world settings.
- Literature synthesis supports triangulation, enhancing the credibility and relevance of conclusions.

By integrating survey responses with secondary research and case analysis, the study produces a balanced and practical understanding of airplane hotels as a workable business model.

**IV. DATA ANALYSIS AND KEY FINDINGS**

This section presents the results derived from the primary survey of 50 respondents and interprets them considering the research aims. The data highlights consumer awareness, interest, pricing preferences, and sustainability perspectives regarding airplane hotels.

**Awareness and Interest**

The survey revealed that only 32% of respondents had heard of the airplane hotel concept prior to participation. However, after a brief explanation of the idea, 71% reported finding the concept either “very appealing” or “somewhat appealing.” This dramatic increase in interest underscores a strong latent demand—suggesting that while current market awareness is limited, the potential for interest and adoption is high with effective education and marketing. This insight is particularly important for entrepreneurs, as it reflects a clear opportunity to capture early adopters and build brand affinity through innovative storytelling and digital outreach.

**Willingness to Stay and Pay**

A significant 69.4% of respondents expressed a willingness to stay in an airplane hotel if given the opportunity, showing robust market receptivity to the concept.

When asked about preferred pricing:

- 51.1% showed comfort with a moderate nightly rate between INR 2,000 and 4,000, placing airplane hotels in the affordable boutique segment.
- 34% said they would still consider choosing the airplane hotel even if it were priced higher than a conventional hotel—implying a willingness to pay a premium for the novelty and experience.

This pricing sensitivity suggests that while consumers value the uniqueness, they also expect value-for-money experiences, especially in emerging markets like India.

#### **Sustainability Appeal**

The survey responses also emphasized a growing environmental consciousness among travelers:

- 66% of participants found sustainability as a crucial factor when selecting accommodations.
- 60.8% specifically favored the concept of airplane hotels due to their environmentally responsible reuse of retired planes.

These findings show that airplane hotels can position themselves as eco-conscious alternatives in the hospitality sector, especially when supported by certifications like “Green Building,” the use of recycled materials, and sustainable operations.

#### **Key Motivators**

Participants were also asked to select features that would most influence their decision to book an airplane hotel. The results highlighted the following top motivators:

- **Unique aviation-themed interiors – 65%**

Guests were highly drawn to the concept of staying in a creatively refurbished plane with aviation aesthetics, such as cockpit suites and plane cabin layouts.

- **Scenic location – 41%**

Location played a crucial role, with preferences for airplane hotels situated in natural or panoramic settings that offer memorable views and tranquil environments.

- **Sustainability credentials – 41%**

Eco-labels and the use of green building practices were also key decision-making factors, reinforcing the link between eco-consciousness and travel decisions.

These motivators show that for airplane hotels to thrive, they must not only be visually and thematically unique but also responsibly positioned and environmentally branded.

#### **Summary Insight:**

The data suggests that airplane hotels are highly appealing to modern travelers when the right combination of novelty, pricing, design, and sustainability is offered. Awareness campaigns, immersive interiors, eco-certifications, and competitive pricing strategies will be vital in attracting and keeping guests in this niche hospitality model.

### **V. DISCUSSION**

The results show strong market receptivity to airplane hotels, particularly among modern, experience-driven, and eco-conscious travelers. The appeal lies in the novelty of the concept, aviation-themed aesthetics, and the opportunity to engage in a unique, Instagram-worthy stay. These features significantly influence booking decisions and align well with the growing trend of experiential tourism.

Beyond profitability, airplane hotels contribute to sustainable tourism by promoting the reuse of retired planes and drawing travelers to less traditional destinations. This supports both environmental goals and local community development, helping to address issues like overtourism and economic concentration.

Airplane hotels stand at the intersection of innovation, sustainability, and market appeal. Their success will rely on thoughtful design, effective marketing, and regulatory readiness.

## **VI. LIMITATIONS**

While this study offers valuable insights into the emerging concept of airplane hotels, several limitations must be acknowledged:

- **Sample Size:** The study was based on a small sample of 50 respondents, which limits the ability to generalize findings to a broader population. A larger, more diverse sample could yield more statistically significant and representative results.
- **Hypothetical Responses:** The survey relied on self-reported, hypothetical scenarios (e.g., willingness to stay or pay), which may not accurately reflect actual consumer behavior in real booking situations. Without behavioral data, intentions may be overestimated.
- **Geographic and Cultural Constraints:** Most participants were from similar cultural and regional backgrounds, which may have introduced bias or limited the scope of perspectives. Global traveller preferences may differ significantly across markets.

Given these limitations, future research should consider larger, cross-cultural samples and use longitudinal or experimental designs to track consumer behavior over time. Real-world pilot projects or pricing simulations could also provide more exact assessments of economic feasibility and customer response.

## **VII. CONCLUSION**

Airplane hotels present a unique and forward-thinking solution at the intersection of aviation asset reuse, sustainable tourism, and hospitality innovation. As the aviation industry faces mounting pressure to dispose of retired planes responsibly, and as tourism shifts toward immersive and eco-conscious experiences, airplane hotels appear as a concept that addresses both challenges simultaneously.

This study shows that despite limited awareness, consumer interest in airplane hotels is strong—especially when the experience is themed, sustainably managed, and affordably priced. The willingness of travelers to pay a premium for novelty-based stays, combined with a growing preference for sustainable practices, supports the economic and environmental viability of this business model.

If designed creatively, marketed strategically, and implemented with regulatory foresight, airplane hotels have the potential to redefine niche tourism experiences, diversify local economies, and inspire new forms of responsible travel.

## **VIII. RECOMMENDATIONS**

To successfully develop and scale airplane hotels, stakeholders should consider the following strategic action.

### **Marketing Strategy**

Leverage the power of social media, influencer collaborations, and immersive storytelling to generate curiosity and engagement. Highlight the uniqueness of the experience, behind-the-scenes transformation stories, and guest testimonials to build emotional connection and brand recognition.

### **Partnerships**

Form collaborations with airlines, tourism boards, eco-resorts, and local governments. These partnerships can enhance legitimacy, reduce startup costs, and free access to target markets, aviation assets, and regulatory support.

### **Design Innovation**

Focus on creating thematic, aviation-inspired interiors that offer both comfort and novelty. Features like cockpit suites, jet-themed lounges, and original plane controls can enhance guest experience and drive word-of-mouth appeal.

### **Flexible Pricing Models**

Introduce tiered pricing options (e.g., economy, business, first-class room categories) to cater to various customer segments. Offer promotional packages for short stays, special occasions, or group bookings to increase occupancy and reach.

### **Sustainability Integration**

Integrate eco-friendly materials, renewable energy sources, and water-saving systems, and pursue certifications such as LEED or Green Globe. Transparent communication of these efforts builds credibility among environmentally conscious travelers and aligns the business with global sustainability goals (SDGs).

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