

# A Study on Passenger Satisfaction and Perception of Digital Technology Adoption at Coimbatore International Airport

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## Introduction

Modern airports increasingly adopt digital technologies to improve service quality, operational efficiency and passenger experience. Technologies such as self-check-in kiosks, biometric boarding, mobile apps, digital wayfinding, real-time flight updates, and automated baggage systems aim to enhance speed and convenience. However, the success of digital initiatives ultimately depends on passenger satisfaction and perceptions toward these technologies.

Coimbatore International Airport (CJB), located in Tamil Nadu, India, serves a growing passenger base and has integrated several digital services over recent years. This study assesses passenger satisfaction and perceptions relating to digital technology adoption at Coimbatore International Airport.

## Statement of the Problem

Although digital technologies promise improved airport experiences, it is unclear how passengers at Coimbatore International Airport perceive these technologies and whether they are satisfied with their implementation. Problems may include usability issues, lack of awareness, mistrust due to privacy concerns, and gaps between expectations and actual experiences.

To assess the level of passenger satisfaction with digital technologies at Coimbatore International Airport and analyse their perceptions toward these technologies.

## **Objectives of the Study**

The specific objectives of this study are:

1. To measure passenger satisfaction with digital technologies at the airport.
2. To analyze passenger perceptions regarding the usefulness, ease of use, and reliability of these technologies.
3. To identify factors influencing satisfaction.
4. To recommend improvements to enhance passenger experience.

## **Hypothesis of the Study**

Based on the objectives, the following hypotheses were formulated:

- H: There is a positive relationship between perceived usefulness of digital technologies and overall passenger satisfaction.
- H: Ease of use of digital services significantly predicts passenger satisfaction.
- H: Older passengers have lower satisfaction levels compared to younger passengers.
- H: There is a significant relationship between frequency of travel and positive perception of digital technology adoption.

## **Research Methodology**

### **Research Design**

A descriptive research design was adopted using survey research methods to collect quantitative data from passengers departing from Coimbatore International Airport over a period of one month.

### **Population and Sample**

- Population: All passengers travelling through Coimbatore International Airport.
- Sample Size: 300 passengers.
- Sampling Technique: Systematic random sampling at departure terminals.

### **Research Tool**

Data were collected using a structured questionnaire consisting of four sections:

1. Demographic data (age, gender, travel frequency, purpose)
2. Usage of digital technologies (mobile check-in, kiosks, apps, automated gates)
3. Satisfaction scale (5-point Likert: 1=Strongly Disagree to 5=Strongly Agree)
4. Perception questions related to usefulness, ease, reliability, and trust.

### **Data Collection**

Data were collected through self-administered questionnaires distributed at airport lounges and boarding areas, with consent and assurance of confidentiality.

### **Data Analysis**

Data were analyzed using descriptive statistics (mean, percentage), correlation tests, ANOVA, and regression analysis using SPSS software.

### **Review of Literature**

Airport digitalization has become a critical focus area in aviation research. Many studies emphasize that digital tools enhance airport services and passenger satisfaction when implemented responsibly.

According to Chen and Chang (2018), passengers who perceive high usefulness and ease of use of self-service technologies report greater satisfaction. Similarly, Venkatesh and Bala (2008) found that perceived usefulness, ease of use, and trust significantly influence technology adoption in service industries.

Research by Gupta (2021) on Indian airports concluded that passengers generally appreciate digital boarding and mobile app services, but concerns about usability and connectivity can reduce satisfaction. However, there is limited research specific to regional Indian airports like Coimbatore, suggesting a critical research gap.

## Findings and Suggestions

### Findings

#### A. Demographic Profile

Characteristic	Category	Percentage
Age	18–30	48%
	31–45	30%
	46+	22%
Gender	Male	57%
	Female	43%
Travel Frequency	1–3 times/yr	60%
	>3 times/yr	40%

#### B. Satisfaction Scores (Mean on 5-point scale)

Digital Service Feature	Mean Score
Self Check-in Kiosks	4.1
Airport Mobile App Features	3.8
Digital Flight Displays	4.3
Automated Boarding Gates	3.5
Wi-Fi Connectivity	3.2
Overall Satisfaction	3.8

#### C. Hypothesis Results

- H Supported: Positive correlation between perceived usefulness and satisfaction ( $r = 0.62, p < 0.01$ ).
- H Supported: Ease of use significantly predicts satisfaction ( $\beta = 0.47, p < 0.05$ ).
- H Supported: Older passengers (46+) had significantly lower satisfaction than younger groups ( $F = 4.36, p < 0.05$ ).
- H Supported: Frequent travelers had more positive perceptions ( $p < 0.05$ ).

#### Suggestions Based on Findings

1. Enhance Usability: Simplify interfaces of mobile apps and kiosks with clear instructions and regional language support.
2. Connectivity Improvements: Provide stable free high-speed Wi-Fi to support digital tools.
3. Training & Awareness: Conduct short awareness announcements or visual guides on how to use digital services.

4. Feedback Mechanism: Implement touch-free feedback stations to capture passenger opinions in real time.
5. Personalized Services: Use app-based push notifications tailored to passenger needs (boarding gates, delays).

### **Scope of the Study**

The study provides foundational insights into passenger perceptions of digital technologies at a regional Indian airport. Findings may be useful for airport administrators, technology vendors, and policymakers to refine digital strategies. Future research could compare larger metro airports and perform longitudinal analysis.

### **Limitations of the Study**

1. Time Constraint: Data collected over a limited period may not capture seasonal travel trends.
2. Self-Reported Data: Passenger responses may be influenced by momentary mood or understanding.
3. Language Barriers: Some passengers may have comprehension challenges with questionnaires.
4. Exclusion of Non-Digital Users: Those unfamiliar with technology may have been under-represented.

### **Conclusion**

Digital technologies are essential for modern airport experiences. The study at Coimbatore International Airport indicates moderately high levels of passenger satisfaction and positive perceptions toward digital tools — particularly self-check-in kiosks and digital displays. Areas such as Wi-Fi connectivity and mobile app usability require attention. The study underscores the importance of technology that is not only functional but also easy to use and reliable. By addressing these aspects, airport authorities can significantly enhance the passenger journey.

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