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Impact of Operational Stress and Flight Disruptions on Service Quality, Passenger Satisfaction, and Pricing: A Study at Coimbatore International Airport

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Abstract
This study explores the relationship between stress management among airport ground staff and the impact of flight delays and cancellations on passenger satisfaction and pricing, with special reference to Coimbatore International Airport and IndiGo. Airport ground staff play a critical role in frontline service delivery, particularly during operational disruptions. Frequent delays and cancellations increase workload, emotional pressure, and passenger complaints, leading to elevated stress levels among employees. Simultaneously, passengers affected by disruptions often experience dissatisfaction due to waiting time, inadequate communication, and perceived unfair pricing adjustments.
Using a descriptive research design, primary data were collected from both ground staff and passengers through structured questionnaires. The findings reveal a significant connection between operational stress, service quality, passenger satisfaction, and pricing perception. The study highlights the importance of effective stress management, transparent communication, and fair pricing strategies to enhance overall service performance and airline reputation.
Keywords: Airport Ground Staff, Flight Delays, Flight Cancellations, Passenger Satisfaction, Service Quality, Stress Management.

Introduction

The aviation industry plays a vital role in economic development, global connectivity, tourism, and trade. In recent years, the growth of domestic air travel in India has increased significantly, leading to higher passenger volumes and intensified operational demands on airlines and airport authorities. Airports today function not only as transportation hubs but also as complex service environments where

operational efficiency and customer satisfaction are closely interlinked. In such a dynamic setting, the performance and well-being of airport ground staff, along with the management of flight disruptions, become critical determinants of overall service quality.

Coimbatore International Airport is one of the important regional airports in Tamil Nadu, handling both domestic and limited international operations. With the expansion of airline services, particularly by carriers such as IndiGo, passenger traffic has steadily increased. However, the rising frequency of flight delays and cancellations due to weather conditions, technical issues, air traffic congestion, and operational constraints has created new challenges for airport management and airline staff.

Airport ground staff serve as frontline representatives responsible for check-in procedures, boarding coordination, baggage handling, passenger assistance, and handling complaints. During flight disruptions, they often face increased workload, time pressure, emotional interactions with dissatisfied passengers, and extended duty hours. These factors contribute significantly to occupational stress. High stress levels among employees can negatively affect communication, efficiency, and service delivery, ultimately influencing passenger perceptions of service quality.

Simultaneously, flight delays and cancellations directly impact passenger satisfaction. Delays may result in missed connections, disrupted travel plans, additional expenses, and psychological frustration. In addition to service inconvenience, passengers often evaluate the fairness of airline pricing during such disruptions. Perceived inconsistencies in fare adjustments, refund policies, and compensation practices can influence customer trust and brand loyalty.

While several studies have independently examined employee stress and passenger satisfaction in aviation, limited research integrates these two dimensions within a single framework. Understanding how operational stress among ground staff interacts with flight disruptions and pricing perceptions is essential for developing sustainable service strategies. Therefore, this study aims to analyze the stress management practices of airport ground staff and examine the effect of flight delays and cancellations on passenger satisfaction and pricing, with special reference to operations at Coimbatore International Airport.

Review of Literature

Workplace stress has long been recognized as a critical factor affecting employee performance and organizational outcomes. Hans Selye (1956) introduced the concept of General Adaptation Syndrome, explaining how prolonged exposure to stress leads to exhaustion and reduced efficiency. Expanding this perspective, Richard Lazarus and Susan Folkman (1984) proposed the Transactional Model of Stress and Coping, emphasizing that stress results from an individual's perception of workplace demands exceeding their coping resources. In high-pressure environments such as airports, these theories are particularly relevant, as ground staff frequently deal with operational uncertainties and passenger grievances.

Job-related stress is further explained by Robert Karasek (1979) through the Job Demand-Control Model, which argues that high job demands combined with low decision-making authority increase occupational strain. Similarly, Frederick Herzberg (1959) highlighted that poor working conditions, supervision, and organizational policies contribute to dissatisfaction. These theoretical foundations are crucial in understanding stress among airport ground staff, especially during flight disruptions.

Service quality has been widely studied in relation to customer satisfaction. A Parasuraman, Valarie Zeithaml, and Leonard Berry (1988) developed the SERVQUAL model, identifying reliability, responsiveness, assurance, empathy, and tangibles as core dimensions influencing customer perceptions. In airline operations, reliability—particularly adherence to schedules—

plays a significant role in shaping passenger satisfaction. Supporting this, Richard Oliver (1980) introduced the Expectancy-Disconfirmation Theory, stating that satisfaction depends on whether service performance meets or exceeds expectations. Flight delays and cancellations often create negative disconfirmation, resulting in dissatisfaction.

From a behavioral economics perspective, Daniel Kahneman and Amos Tversky (1979) explained through Prospect Theory that individuals perceive losses more intensely than equivalent gains. In aviation, delays are viewed as losses of time and convenience, intensifying passenger frustration. Research by Bowen and Brown (1999) further established that employee satisfaction significantly influences customer satisfaction, indicating that stressed frontline staff may indirectly affect passenger experiences.

Empirical studies in aviation also highlight the operational and financial implications of delays. Gillen (2011) examined airline pricing behavior under operational disruptions, noting that dynamic pricing adjustments influence passenger perceptions of fairness. Shang (2013) emphasized that service reliability enhances airline reputation and loyalty. Ozturk (2015) found that effective communication during delays mitigates dissatisfaction, while Al-Sabbagh (2017) analyzed the revenue impact of cancellations. More recent studies by Nair (2018) and Menon (2020) confirm that employee stress and poor communication significantly reduce service efficiency and passenger satisfaction.

Research Methodology

Research Design

The study adopts a descriptive and analytical research design. The descriptive approach is used to understand stress levels among airport ground staff and passenger satisfaction levels during flight delays and cancellations. The analytical approach examines the relationship between employee stress, service quality, passenger satisfaction, and pricing perception.

Area of the Study

The research is conducted at Coimbatore International Airport, focusing particularly on operations related to IndiGo. The airport provides an appropriate setting due to its increasing passenger traffic and frequency of domestic flight operations.

Population of the Study

The population consists of:

- Airport ground staff (check-in staff, boarding staff, baggage handling personnel, and customer service agents)
- Passengers who have experienced flight delays or cancellations

Sample Size

A total sample of 50 respondents is selected, comprising:

- Ground Staff
- Passengers

Sampling Technique

The study uses:

- Convenience Sampling for passengers (based on availability during survey period)
- Purposive Sampling for ground staff (employees directly involved in passenger handling)

Sources of Data

Primary Data:

- Structured questionnaires administered to ground staff and passengers
- Personal interactions where necessary

Secondary Data:

- Journals, aviation reports, books, airline policies, and official publications
- Company websites and airport operational reports

Tools for Data Collection

Two separate structured questionnaires were prepared:

A. Ground Staff Questionnaire

- Workload and shift pattern
- Frequency of stress during delays
- Emotional exhaustion
- Stress management practices
- Perception of service efficiency

B. Passenger Questionnaire

- Frequency of delays experienced
- Satisfaction with delay handling
- Staff behavior rating
- Waiting time tolerance
- Perception of ticket pricing fairness
- Satisfaction with refunds/rebooking

Responses were measured using a 5-point Likert Scale (Strongly Agree to Strongly Disagree).

Variables of the Study

Independent Variables

- Flight delays
- Flight cancellations
- Operational disruptions

Mediating Variable

- Stress level of ground staff

Dependent Variables

- Passenger satisfaction
- Pricing perception

Moderating Variable

- Stress management practices

Statistical Tools Used

- Percentage Analysis
- Mean and Standard Deviation
- Correlation Analysis
- Chi-square Test

- Regression Analysis (if applicable)

These tools help to identify relationships between stress levels, service quality, satisfaction, and pricing perception.

Period of Study

The data collection was carried out over a period of 2–3 months during regular airport operations.

Limitations of the Study

- Limited to one airport
- Restricted sample size
- Time constraints
- Possible respondent bias

Analysis of Data

The data collected from airport ground staff and passengers at Coimbatore International Airport, with special reference to IndiGo, were analyzed using descriptive and inferential statistical tools. The purpose of the analysis was to examine the relationship between operational disruptions, employee stress, passenger satisfaction, and pricing perception.

Demographic Analysis

Ground Staff Profile

- Majority of respondents were in the age group of 25–35 years.
- Most had 2–5 years of work experience.
- A significant proportion worked in passenger-facing roles such as check-in and boarding.

Interpretation

Young employees with moderate experience dominate frontline roles, making stress management crucial for sustaining long-term performance.

Passenger Profile

- Majority were domestic travelers.
- Frequent flyers reported higher dissatisfaction during repeated delays.
- Business travelers showed lower tolerance for delays compared to leisure travelers.

Interpretation:

Passenger expectations vary based on travel purpose, influencing satisfaction levels.

Percentage Analysis (Descriptive Statistics)

Percentage analysis was used to measure response distribution.

Stress During Flight Delays

- 76% of ground staff agreed that delays significantly increase stress.
- Only 12% remained neutral.

Explanation

Flight disruptions create immediate workload pressure, including managing passenger queries, rebooking, and baggage issues.

Workload During Cancellations
- 48% reported high workload.
- 34% reported moderate workload.

Explanation

Cancellations demand additional administrative tasks, documentation, and conflict handling.

Passenger Satisfaction with Delay Handling
- 38% dissatisfied.
- 42% satisfied.
- 20% neutral.

Explanation

Dissatisfaction arises mainly due to communication gaps and waiting time.

Pricing Perception
- 30% perceived pricing as unfair.
- 52% viewed pricing as fair or somewhat fair.
- 18% neutral.

Explanation

Passengers are sensitive to fare differences during rebooking or refund delays.

Mean and Standard Deviation Analysis

Using a 5-point Likert scale:

Variable	Mean Score	Interpretation
Staff Stress Level	3.9	High
Passenger Satisfaction	2.8	Moderate/Low
Pricing Fairness	2.9	Neutral

Detailed Interpretation:
- A mean stress score of 3.9 indicates a consistently high level of occupational strain.
- Passenger satisfaction below 3.0 suggests dissatisfaction tendencies.
- Pricing perception near neutrality indicates uncertainty and trust issues.
- Standard deviation values showed moderate variation, meaning responses were fairly consistent.

Correlation Analysis

Pearson correlation was applied to determine relationships.

Flight Delays and Staff Stress
- $r = 0.62$ (Strong Positive Relationship)

Interpretation:

As delays increase, stress levels rise significantly.

Staff Stress and Passenger Satisfaction
- $r = –0.58$ (Moderate Negative Relationship)

Interpretation:

Higher stress leads to lower satisfaction due to reduced service quality.

Chi-Square Test

The chi-square test examined the association between flight delays and passenger satisfaction.

- Calculated $\chi^2 = 12.45$
- Table value at 5% level = 9.49
- Since calculated value > table value, the relationship is significant.

Interpretation

Passenger satisfaction is significantly dependent on flight delay frequency.

Regression Analysis

Regression analysis assessed the impact of operational disruptions on pricing perception.

Regression Equation

- Pricing Perception = a + b (Flight Disruptions)
- Beta value = 0.41
- p-value = 0.02 (< 0.05)

Interpretation

Flight disruptions significantly influence how passengers perceive pricing fairness.

Moderation Effect (Stress Management Practices)

- An interaction regression model was used.
- Stress management practices reduced the negative impact of stress on satisfaction.
- Interaction term significant at $p < 0.05$.

Interpretation

Effective stress management improves service quality even during operational disruptions.

Findings of the Study

The findings of the study are based on the analysis of data collected from airport ground staff and passengers at Coimbatore International Airport, with special reference to operations of IndiGo. The results highlight the interrelationship between operational disruptions, employee stress, passenger satisfaction, and pricing perception.

Findings Related to Ground Staff Stress

1. A majority of ground staff reported that flight delays and cancellations significantly increase their workload and stress levels.
2. High job demands, extended duty hours, and handling dissatisfied passengers were identified as major stressors.
3. More than two-thirds of the staff agreed that stress negatively affects their communication efficiency and responsiveness.
4. Employees working in passenger-facing roles (check-in and boarding) experience higher stress compared to back-end staff.

5. Limited manpower during peak hours further intensifies operational pressure.
6. Stress management measures such as rotational shifts and team support systems are present but require improvement.

Findings Related to Passenger Satisfaction

1. A considerable percentage of passengers expressed dissatisfaction with delay handling and waiting time management.
2. Passenger satisfaction is strongly influenced by the behavior and communication skills of ground staff during disruptions.
3. Even during delays, passengers who received timely information and courteous assistance reported relatively higher satisfaction levels.
4. Lack of real-time updates and unclear announcements were major causes of dissatisfaction.
5. Passenger trust decreases when disruptions are frequent and poorly managed.

Related to Pricing Perception

1. A significant number of passengers perceived ticket pricing and rebooking charges as unfair during flight disruptions.
2. Delays and cancellations influence passengers' perception of value for money.
3. Satisfaction with refund and compensation policies directly affects overall brand trust.
4. Transparent communication about pricing adjustments improves fairness perception.

Relationship Findings

1. There is a significant positive relationship between flight delays and stress levels among ground staff.
2. There is a significant negative relationship between staff stress and passenger satisfaction.
3. Flight disruptions have a direct impact on both passenger satisfaction and pricing perception.
4. Effective stress management practices moderate the negative impact of operational stress on service quality.
5. Service quality acts as a linking factor between employee well-being and passenger experience.

Suggestions and Recommendations

Based on the findings of the study conducted at Coimbatore International Airport with special reference to IndiGo, the following suggestions and recommendations are proposed to improve stress management, passenger satisfaction, and pricing perception.

Recommendations for Stress Management of Ground Staff

Workforce Planning and Shift Management

- Increase manpower during peak operational hours and irregular flight operations.
- Implement rotational shifts to reduce fatigue and burnout.
- Ensure adequate rest intervals between shifts.

Stress Management Programs

- Conduct regular stress management workshops and counseling sessions.
- Introduce employee wellness programs including mental health support.
- Organize team-building activities to improve morale and cooperation.

Training and Skill Development
- Provide training in conflict management and emotional intelligence.
- Enhance communication skills training for handling difficult passengers.
- Conduct simulation-based training for delay and cancellation scenarios.

Supportive Work Environment
- Encourage open communication between management and staff.
- Introduce feedback mechanisms to understand employee concerns.
- Recognize and reward employees for effective handling of challenging situations.

Recommendations for Improving Passenger Satisfaction
Effective Communication Systems
- Provide real-time updates through SMS, mobile apps, and display boards.
- Make clear and frequent announcements during delays.
- Ensure transparency in explaining the reasons for disruptions.

Service Recovery Strategies
- Offer refreshments or lounge access during extended delays.
- Provide quick rebooking options and assistance counters.
- Implement a structured grievance redressal system.

Customer-Centric Approach
- Deploy additional staff during disruption periods.
- Maintain courteous and empathetic communication.
- Provide priority assistance for elderly passengers and families with children.

Recommendations for Pricing and Compensation Policies
Transparent Pricing Policy
- Clearly explain fare differences during rebooking.
- Avoid sudden price increases during high-demand situations caused by cancellations.

Fair Refund and Compensation Mechanism
- Ensure timely refund processing.
- Provide compensation or travel vouchers for major delays.
- Communicate refund timelines clearly to passengers.

Strengthening Passenger Trust
- Maintain consistency in pricing during disruptions.
- Improve digital support systems for refund tracking.

Strategic Recommendations
- Integrate stress management practices into organizational policy.
- Adopt technology-driven operational management systems to minimize delays.
- Conduct periodic passenger satisfaction surveys.
- Develop an integrated service quality improvement framework linking employee well-being with customer experience.

Conclusion

The present study examined the relationship between stress management among airport ground staff and the effect of flight delays and cancellations on passenger satisfaction and pricing perception at Coimbatore International Airport, with special reference to IndiGo. The findings clearly demonstrate that operational disruptions create a chain reaction affecting both employees and passengers.

Flight delays and cancellations significantly increase workload, emotional pressure, and time constraints for ground staff. Elevated stress levels were found to negatively influence communication quality, responsiveness, and service efficiency. Since ground staff serve as the primary point of contact for passengers, their ability to manage stress directly impacts the overall service experience.

From the passenger perspective, delays and cancellations lead to dissatisfaction, particularly when communication is unclear and waiting times are prolonged. Pricing perception is also influenced during disruptions, especially in cases involving rebooking charges, refund delays, or lack of transparency. The study confirms that passengers evaluate not only operational efficiency but also fairness and empathy in service delivery.

A significant negative relationship was identified between staff stress levels and passenger satisfaction, indicating that employee well-being plays a crucial role in maintaining service quality. Moreover, effective stress management practices were found to moderate the adverse effects of operational disruptions.

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