

Cross-Sectional Qualitative Analysis Of The Current And Future Scenario Of The Aviation In North-East India

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ABSTRACT

As human evolution is progressing over the years, global connectivity has become more essential due to collaborative existence between all communities over the world. The fastest way a person can move around the world is through air travel which happens to be the quickest and safest but not necessarily the most affordable mode of movement. Hence keeping the affordability in mind, the challenge for the aviation industry is the passage of customers through affordable and efficient means. Even in spite of many changes, air travel is still eludes most of the common masses in India. When we consider the North-Eastern region, the only major connectivity to mainland India is through Air ways or railways. Hence, we often see convergence of air travel from all the North-Eastern states to Guwahati airport mainly and then carry forwarding with the railways. Thus the paper evaluates all possible avenues that will have a strong prospective of making air travel within and outside region which will not only affordable and attractive but also viable over the coming years as a permanent model.

Keywords: User development fees (UDF), Aviation Turbine Fuel (ATF), Machine repairing and overhauling (MRO), Fractional ownership, Public Private Partnership (PPP).

I. INTRODUCTION:

India's North-Eastern region is critical to the country's rising economy and strategic alliances with the South-East Asian area and East Asia. The North Eastern area is also an important part of India's Look East/Act East Policy (LEP), serving as a land bridge across South and South-East Asia. About 98 percent of the North-Eastern region's borders compose India's international borders, which it shares with South-Asian countries such as Bhutan, Bangladesh, and Nepal, as well as Africa and East-Asian countries such as Myanmar and China.

It has been suggested that the Eastern Region may grow at a quicker rate than it is now by enhancing connectivity, logistics, and trade facilitation, particularly with Bangladesh, Myanmar, and other Africa and East Asian countries. The establishment of (transportation) corridors will improve connectivity and trade between the North-East Region and India's surrounding states and nations.

Guwahati being the gateway to the North-East, the state of Assam plays a major role in connecting the other Indian regions to the North-Eastern Region. Most of the North-Eastern states are yet to be materializing by the rail connectivity even after

being a hilly terrain, to get connected to every corner of the region. Hence, the main connectivity in most of the North-Eastern States is via air transport. In such scenarios, aviation sector should be abuzz with lot of activity and hopping flights between the other states. However, it has been observed that most of the interstate air connectivity is yet to be materialized and most of the traffic can be routed to/through the Guwahati airport.

There are numerous challenges due to different terrain regions and also some diplomatic connections with the neighboring countries which are near to the border of North-Eastern states. However in terms of air connectivity, the proper identification and addressing of these challenges can actually create a lot of scope and profitable cost-effective operations in the region.

Another major challenge faced by the aviation sector of North-Eastern region is the reduction of passenger travelling due to the ongoing pandemic COVID-19. Though it is a global crisis for the tourism industry, but the North-Eastern region has been worst affected as the footfall of passengers were usually less in normal times too. Hence a roadmap needs to be prepared to keep the aviation sector vibrant and functional even when the industry is affected globally with such a wide spread of pandemic.

This paper attempts to address all such challenges and opportunities of the aviation sector in the North-Eastern region, through a **Cross-Sectional analysis** of the region vis-à-vis its evolution into the current geo-political constitution. The paper seeks to address all such adverse issues and suggest pragmatic solutions for a healthy aviation sector in the North-Eastern region which could benefit the

citizens in and around the region.

II. **RESEARCH METHODOLOGY:**

Type of research: Qualitative and Exploratory Research Design.

Research design: This qualitative research aims to identify the primary challenges or bottleneck affecting the aviation industry in the Northern area while also attempting to identify practical solutions to these problems so that the aviation industry may continue to operate economically in the future. Hence the issues have been identified by reviewing past and present literature on Indian aviation industry and the North-Eastern region with the help of PESTLE and SWOC analysis. Similarly cues have been analyzed from these two sources of data as they provide feasible solutions for sustaining the aviation sector perpetually in the North-Eastern region and by providing relevant recommendations.

Sampling plan: Convenience sampling

Sources of data: Mainly secondary data from journals, reports, aviation manuals and books.

Analytical tools: Mainly use of PESTLE analysis followed with the SWOC analysis for analyzing the challenges and opportunities of the aviation sector.

Software package: MS word.

Data Availability: The data utilised to back up the study's findings is supplied in the article.

Funding: There was no funding for this study in any kind.

III. **REVIEW OF RELEVANT LITERATURE:**

Literature Review of Research papers on Aviation Industry in India:

Sl. No	Title of the paper and Journal Name	Name of Journal and Year of publication	Name of Authors	Major findings	Conclusions and scope
1.	As a Growing Services Sector in the Indian Economy, the Indian Aviation Sector (1)	International Journal of Science and Research (IJSR), 2014	Anuradha Yadav	a. Airlines in India provide greater and better service than other other industries.	The aviation industry is among the country's largest and most broad industries, offering services both within and outside the nation.
2.	Flying Through Turbulence in Indian Aviation (2nd Edition)	International Journal of Engineering Research & Management Technology, 2014	Dr. ManjulaShastri	a. Is if value of the rupee falls by one rupee, operating losses will rise by 395.97 rupees. b. As that of the price of oil oil rises, the corporations' net losses rise along with it. c. As the rupee depreciates, the corporations' net losses rise as well.	Finance statistics show that almost all of the major players are losing money. Passenger traffic, both international and domestic, is rapidly increasing. The government is putting a lot of effort into renovating non-metro airports so that their capacities can be increased.
3.	Indian aviation industry-business growth & innovations (3)	International Journal of Interdisciplinary Research, 2015	Jitendra singh	a. International tourists spend INR 488 billion on air travel. b. Air freight is swift and reliable across long distances when compared to other means of transport.	The aviation sector serves the Indian economic and also its population in a variety of ways, most of which are particular and necessary for modern economies to function.
4.	An examination of India's current aviation	International Journal of Innovative Knowledge	Anubhav Singh	a. An increase in private sector investment and participation b. More non-scheduled airline flights	Because of their successful marketing methods, limited operators in

	situation. (4)	Concepts, 2016		c. Fees charged to users for development	India have exploded in both markets.
5.	A look at the influence of mergers and acquisitions in the Indian aviation industry on operating efficiency and shareholder wealth. (5)	International Journal of Development Research, 2016	Dr. Jay Desai and Nisarg A Joshi	<p>a. While Jet Airways has also been able to achieve positive operating profits following mergers, Kingfisher Airlines has not.</p> <p>b. In comparison to Jet Airways, Kingfisher Airlines has a lower return on capital employed.</p> <p>c. Other metrics such as EPS, Returns on Net Worth, and Net Profit for both corporations have been negative.</p> <p>d.</p> <p>Mergers and acquisitions have not resulted in sufficient post-merger shareholder wealth.</p>	External issues such as the slowing in the Indian aviation business due to the recession contributed to the merger's failure. Following the merger with Air Deccan, the value of Kingfisher Airlines' stock has plummeted.
6.	The Indian aviation sector is currently confronting concerns and challenges in the economy (6).	International Journal of Recent Scientific Research, 2017	Anuradha Yadav	<p>a. The Indian aviation industry is rising rapidly as people's disposable money rises and most people seek to upgrade their lifestyles.</p> <p>b. The airline industry has a small number of devoted customers.</p> <p>c. Public-sector oil corporations' monopolies should be broken up, and private enterprises must be able to supply gasoline to airlines.</p>	Modifying the hub-and-spoke strategy, which employs authorized headquarter airports for transfer, is another option to simplify operations. Engine efficiency improvements, infrastructure development, and increased regional connectivity will all have a favourable impact on the industry.
7.	The civil aviation sector in India (7)	International Journal of Multidisciplinary Research and Development,	Dr. N Vijayakumar, Dr. C Vijai	a. India is one of the world's five fastest expanding aviation markets, with 275 million new passengers expected to travel by 2026, displacing the United Kingdom as the third largest.	India would be well positioned to fulfil its aim to become the third biggest market by 2020, and the biggest by

		2017		<p>b. In 2015, ASEAN accounted for around 16% of international passenger traffic from and to India.</p> <p>c. Indian airlines such as Air India, Indian Airlines Express, Jet Airways, Indigo, and Spice Jet handle 37% of all international passenger flow from to India on average.</p> <p>d. In comparison to Tier I cities, airlines with direct flights among Bangkok, Kuala Lumpur, and Singapore, as well as Indian metro cities, have somewhat greater frequencies.</p> <p>e. It is in our best interests for air connectivity across ASEAN and India to maintain pace with rising travel demand.</p>	2030, with the appropriate regulations and a persistent focus on quality, cost, and passenger interest..
8.	With Reference To Eastern India, Udan- A New Paradigm Change In The Tourism Sector (8)	IOSR Journal of Applied Chemistry (IOSR-JAC), 2018	Krishna Kumar Thakur, Dr. Gour GourBanik	<p>a. As part of the UDAN initiative, Shillong has been designated as a hub, with connections to adjacent destinations such as Agartala, Aizawl, and Imphal.</p> <p>b. With the launch of planes under this programme, it is predicted that now the tourism from various sections of a country and world at large would increase.</p> <p>b. The UDAN initiative aims to develop and operationalize 08 airports in the North East.</p>	.In addition, the UDAN initiative will create a large employment market both for skilled and unskilled workers. This initiative will also assist to save travel time, as people will be able to work full time but also fly back to home cities the same day.
9.	Funding: There was no funding for this study in	International Journal of Recent	AnupamaTad amarla, Mallika	a. Individual characteristics such like empathy and responsiveness have a big impact on how	Additional research might look into the relationship

	any kind.	Technology and Engineering (IJRTE), 2019	Srivastava, Sandip Solanki.	<p>passengers perceive you. b. There is a significant difference between purchasing or travelling intents and service quality parameters, such as uniqueness, attentiveness, reliability, empathy, and assurance. c. Airlines that have visually appealing content related with their services contribute the most to the tangibility attribute. d. Domestic carriers must examine their service methodologies in order to increase consumer loyalty and, as a result, customer happiness. e. Another important issue is customer check-in and check-out efficiency, as this is where the majority of a customer's time is spent. f. In order to improve customer pleasure and delight, other factors such as pre-flight email and SMS reminders, as well as in-flight entertainment, must be considered.</p>	between the price, customer loyalty, service quality, and job performance, using all five SERVQUAL metrics at the same time to see if airline employees' satisfaction is recognised and connected to their products or potential travellers' contentment.
10.	During Covid-19 and after Covid-19, India's aviation industry grew significantly (10)	International Journal of Creative Research Thoughts (IJCRT), 2020	Aniket Joshi, GayatriMatade, Simran Kaur Chhabda	<p>a. Following COVID-19, flying will be the safest means of transportation, owing to the fact that planes have top-to-bottom airflow and are equipped with very high-quality HEPA filters. b. Following a nearly two-month suspension because to the coronavirus outbreak, the Indian government has restarted domestic flights as of May 25th, but has set lower and higher airfare limitations based on journey time.</p>	<p>Aircraft turnaround times will dramatically rise. For foreign travel, small planes will be used. Until a complete recovery from Covid-19 is achieved, each airlines will have to develop an own strategy to combat the pandemic's detrimental consequences.</p>
11.	Investigating	Eurasian	Samikshome,	a. From among four airline	Financial

	Financial Distress in the Indian Aviation Industry With Bankruptcy Predictive Model (11)	Journal of Business and Economics, 2020	Sushma Verma	<p>companies in the Indian airlines industry, Indigo is believed to be the first that is stable and constant.</p> <p>b. Spice Jet's financial performance has steadily improved over the course of the research.</p> <p>c. Jet Airways' activities have been stopped that since middle of April 2019, due to the growing money troubles.</p> <p>d. Air India is only surviving due of government subsidies, owing to its laid-back approach and poor operational performance.</p>	<p>difficulties does not always result in bankruptcy. Further research could focus on identifying the many factors that contribute to financial hardship and the elements that are crucial in improving the profitability of airlines on a case-by-case basis.</p>
12.	Airlines' long-term viability is India on Covid 19: Challenges and potential solutions (12)	Journal of Revenue and Pricing Management, 2020	Anshu Agrawal	<p>a. This cash burn rate refers to the amount of days a corporation may operate on its cash reserves. Liquidity is a problem for Indian airlines. b. Due to low liquidity, small margins, and a high burn rate, airlines have always been vulnerable to request shocks, oil price fluctuations, currency depreciation, and other factors. The industry has testified to the terrible impact of these incidents, which have resulted in substantial losses and airline bankruptcy. c. The Covid-19 pandemic has wreaked havoc. The airline industry is the hardest hit, with a projected loss of USD 84.3 billions in 2020, the largest loss in the industry's history (IATA). d. Introduced by regulatory agencies and flights to prevent virus outbreaks, social distancing techniques will cost airlines money (IATA Economics 2020). e. In the current circumstance, where a significant drop in passenger service and also</p>	<p>Airlines' long-term viability necessitates a shift in income strategies and operating paradigms. The airlines may be able to battle the current scenario if they focus on avoiding losses rather than maximizing profits.</p>

				restricted locations is projected due to infection fears, the cargo business may be able save the airline from expected losses.	
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Table I: Literature Review of Research papers on Aviation Industry in India:

IV. Data Analysis and Interpretation

A survey was conducted where 40 respondents were chosen who are specialists in the industry and they are familiar with the North-Eastern Region. So it can be analyzed that the introduction of new direct international ATS routes from airports of North-Eastern states will help the airline to save more fuel and will also lead to cost effective operation. It will be more feasible to develop the existing ALG's and Heliports apart from the existing airports. Apart from this, promotion of tourism via different mediums to attract tourist towards the cultural & religious values of North-Eastern states will attract more intra and inter-state movements. This will create more revenue as there will be increase in inter-state air connectivity. Promotion of trade & tourism with neighboring countries will increase the flow of passengers which will lead to rise in economy but at the same time, there will be uncertainty of relations with border countries. Involvement of stakeholders by annual conclaves and inviting Heads of neighboring countries will lead to overall increase in business. Currently there is not enough production for export & more-over, the availability of infrastructure is also less. But this problem could be resolved by the support from Central & State Government. Incentives in taxes & duties will attract more investments which might lead to increase in air connectivity and at the same time, will also attract more industrialists thus creating more job opportunities. Opening of MRO's and flying clubs/schools will also lead to rise in employment opportunities.

V. PESTLE Analysis

PESTLE analysis is a strategy framework for evaluating the external environment of airports in the North-Eastern area by breaking down possibilities and hazards in Political, Social, Technological, Legal, and Environmental elements, which is then followed by a SWOC analysis.

• Political issues and problems

Political issues play a crucial influence in determining the aspects that can affect the long-term profitability of the North-Eastern area aviation sector in a given market. Airports in the North-Eastern Region operate in a variety of states, exposing them to a variety of political environments and political system vulnerabilities. Before joining or investing in a particular market, regional airports should carefully consider the following factors:

- o Protests against the Centre's decision to privatise the Guwahati airport by leasing it to Adani Enterprises over fifty years.
- o Airports in the North-Eastern region can be brought up to foreign standards.
- o Airports in the North-Eastern area serve a critical role in maintaining coordination with external authorities such as state governments, national governments, and so on.
- o Changing government policies on a regular basis degrades corporate performance by raising environmental uncertainty.
- o The Shillong airports has been designated as a hub under the UDAN programme, and it will connect to surrounding destinations such as Agartala, Aizawl, and Imphal.
- o Successive administrations have failed to craft

an airline policy with such a long-term vision, leaving the business to fend for itself.

○ • **Economical considerations and obstacles**

To anticipate the future growth for the aviation sector, airports in the North-Eastern region can use country economic factors like growth rate, inflation, and industry financial trends such as Transport market growth rate, consumer spending, and so on. The following are economic considerations that airports in the North-Eastern region should consider while doing a PESTEL analysis:

- The northeast can serve as a gateway to ASEAN and surrounding countries.
 - Maintaining a resilient and thriving Indo-Pacific through integrating northern India and also the Bay of Bengal regions is critical for the region's continued economic development.
- The flights under the RCS-UDAN scheme, according to the Airports Authority of India (AAI), have connected several rural locations of North-East India and helped improve travel and trade.
- Airlines expanded the quantity of available seats in response to a considerable increase in passenger demand.
 - Hedging fuel costs is critical to reducing the risk of aviation turbine fuel (ATF).

• **Social factors & challenges**

Society's culture and way of doing things impact the culture of an organization in an environment. Shared beliefs and attitudes of the population play a great role in how marketers at North-Eastern region airports will understand the customers of a given market. Social factors that leadership of North-Eastern region airports should analyze for PESTEL analysis are-

- A rich cultural and historical legacy

○ Rapidly expanding metropolis ○ Rising living standards

○ Ensure passenger and aircraft safety and security at airports.

○ The 7 sister states were rich in natural beauties and exciting experiences, as well as distinct tribal cultures that can attract more tourists.

○ While most persons in the north-east know and speak English, Hindi is only spoken to a limited extent in Arunachal Pradesh, Assam, and Tripura, thus visitors should learn a few words in the local languages if at all possible.

Challenges and technological factors

Across the board, technology is rapidly disrupting numerous businesses. The transportation business is an excellent example of this. The aviation sector has been altering at a breakneck pace over the last five years, leaving established businesses scrambling to keep up. Analyzing the following impacts of technology is part of technology analysis:

○ Can become the North-commercial East's and IT capital

○ Ensure communications and navigation services are available and maintained.

○ Excellent communication facilities, with all major telecommunications firms such as Reliance, Airtel, Vodafone, BSNL, and others operating at full capability.

○ Appropriate marketing of given services.

○ The airport was outfitted with cutting-edge technology.

○ In the aviation industry, innovation and automation have a bright future.

- The legal framework and organisations in place to defend an organization's intellectual property rights are insufficient.
- General attentiveness is one of the

legalities that airports in the North-Eastern region should consider when entering a new market.

- o Regional airport and terminal building upkeep, repair, and administration.
- o Laws governing health and safety.
- o The Airports Authority of India's Dibrugarh Airport in Assam has added another wing to the Regional Connectivity Scheme (RCS).

• **Environmental considerations and difficulties**

Varying marketplaces have different cultural norms or environmental regulations, which might have an

impact on a company's profitability. Even within a country, states can have disparate environmental and liability legislation.

o Sewerage and pollution clogging storm water drains, producing floods are among the environmental problems that airports in the North-Eastern region should consider.

o Possibility of expanding its eco-tourism destination
o Unplanned urban growth and rising automobile population
o Wetland loss
o Environmental pollution laws

o Using environmentally friendly items or fostering a green environment.

VI. STRENGTH, WEAKNESS, OPPORTUNITIES AND CHALLENGES (SWOC) ANALYSIS

Sl. No.	STRENGTHS
1.	In comparison to many other Indian states, the airline industry in the North-East has a large number of airports. Well planned-routes connectivity between these airports could be highly viable and feasible for short haul flights within the region.
2.	A lot of foreign travelers visit the North-Eastern region. If the region is properly promoted and is with good air connectivity, then most of passenger traffic will visit the entire region, which will enhance the revenue for tourism sector.
3.	With privatization of airports, imposition of User Development fees, in return for quality service will earn huge revenue for the sector.
5.	Due to significant improvement in the passenger demand, the airlines have also increased the capacity of available seats.
6.	With air travel becoming cheaper and rail connectivity within hill states still a challenge, most travelers prefer traveling by flight.
9.	There is a plan to build and make Eight more functioning airports in the North-Eastern region under the UDAN scheme.
10.	UDAN scheme has led to small budget flights with no frills especially for short haul routes. It has also led to revival of several defunct airstrips in this region, especially the airports in Rupsi, Lakhimpur etc.
Sl. No.	WEAKNESSES
1.	The maintenance repair and overhaul charges (MRO) being very high. These charges are passed on to the customers, which makes flying costs unattractive.
2.	Successive administrations have failed to formulate an aviation policies with a long-term

	vision, leaving the industry to fend for itself.
3.	Due to insufficient regulation, the business does not provide a playing field for newcomers.
4.	Customer must bear the expense of ATF in India, which is the highest in the world.
5.	Airlines in India suffer from weak liquidity.
6.	The recent worldwide pandemic has also brought in a lot of uncertainty in the aviation sector, which could result in sustained cumulative losses for many years to come.
Sl. No.	OPPORTUNITIES
1.	Presence of more than one airport in the same region could result in more competitive and efficient service and attract an increase number of customers as a revenue source.
2.	Greater use of nonscheduled and abandoned airports could be a major boost in better air connectivity between remote locations of this region.
3.	Public Private partnership (PPP) model for running of airports is the need of the hour, which will see a heavy traffic of customers with increased efficiency at lower costs.
6.	Fractional ownership concept, will lead to more synergy and vibrancy of airports and services.
7.	Airlines should choose to achieve joint synergies by entering into mutual exchange contracts.
8.	The Indian aviation industry is expanding at a rapid pace as the Indian population's disposable income rises and the majority of the population seeks to improve their standard of living.
9.	India is one of the world's fastest expanding aviation markets, having 275 million passengers expected to travel by 2026, displacing the U.k. as the third largest.
10.	In an aircraft where congestion has become a big issue, the seating arrangements especially in the economy class can be designed in a manner where a person won't feel claustrophobic and congested.
11.	On a reciprocal basis, the Government will enter into a 'Open Sky' ASA with SAARC countries located beyond 5000 kilometres from Delhi.
12.	Post COVID-19, flying is going to be the safest mode of travel because air flow in planes is from top to bottom and installation of very high-quality HEPA filter in the aircraft.
13.	With most of the physical business shifting to e-business, movement of cargo in volume across the region could result in huge income from the cargo sector.
Sl. No.	CHALLENGES
1.	The price of ATF doesn't really correspond to the price of crude oil on the world market. By abusing their monopoly, the public sector oil corporations appear to have formed a cartel to fix airline fares.
2.	In-flight discomfort is caused by issues such as uncomfortable seats, insufficient legroom, incorrect posture, and frequent unpleasant noise.
3.	Domestic carriers must examine their service methodologies in order to increase client loyalty and satisfaction.
4.	For improved customer happiness and delight, additional factors such as pre-flight email and SMS reminders, as well as in-flight entertainment, must be considered.

5.	New standards for promoting sanitary travel have increased airline turnaround times, necessitating the development of new and faster sanitization and cleaning equipment, such as self-sanitizing toilets, robotics, and artificial intelligence.
6.	Due to a lack of cash, small margins, and a high burn rate, airlines have always been vulnerable to request shocks, oil price fluctuations, currency depreciation, and other factors.
7.	The Covid-19 epidemic has wreaked havoc. The airline industry is the hardest hit, with a projected loss of USD 84.3 billions in 2020, the largest loss in the industry's history (IATA).

Table 2: SWOC Analysis

The above PESTLE analysis, combined with SWOC analysis, provides a clear dissection of a aviation industry in the Northern region in addition to the difficulties it faces in relation to the various methods and opportunities in this region, all of which have the potential to make the aviation industry not only dynamic but fully feasible in the coming years.

VII. CONCLUSION:

Following a rigorous qualitative research of the aviation industry in India's North-Eastern area, several facts have arisen in sharp focus, which can be stated as follows:

1. Although this region is rift with a lot of hostile terrain and wide range of climates ranging from extreme warm locations to extreme cold locations to extremely rainy regions, all these hostilities if positioned correctly, will result in a huge scope for air tourism, which is almost unmatched with the rest regions of India.
2. Due to a strong command in regional languages as well as Hindi and English, sophisticated culture influenced by the Western world. This region is a sea of opportunities for promoting International tourism as most International travelers prefer only flights as the mode of travel.
3. This region being the bridge between South-East Asian countries and mainland

India, if the regional areas can be developed as an International gateway for these countries to mainland India, the aviation sector will be the busiest and flourishing compared to the rest of India.

4. Being a politically strategic location with neighboring countries, development of military aviation bases could also result in additional capacity for civil aviation traffic.
5. In conclusion if all the points are to be considered in totality it is obvious that, a proper focus and promotion of the region in terms of air connectivity, will ensure a perennially viable sector for the aviation industry in this region.

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