



UNLOCKING AMRITSAR'S ECONOMIC POTENTIAL: THE ROLE OF SRI GURU RAM DASS JEE INTERNATIONAL AIRPORT

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ABSTRACT

In or around 1574 A.D., the fourth Sikh leader, Sri Guru Ramdas Ji, founded Amritsar, a two-tiered metropolis in Punjab covering 240 square kilometres and Sri Guru Ram Das Ji International Airport is named after him. The airport's strategic location and expanding connectivity have positioned it as a crucial hub for trade, tourism, and cultural exchange. However, challenges such as infrastructure constraints and seasonal fluctuations in passenger traffic need to be addressed. This research aims to identify opportunities for growth, propose strategies for improvement, and explore the airport's potential to drive sustainable economic development in Amritsar and beyond.

Keywords: Amritsar, Airport, Projections, Facilities, SWOT Analysis

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Ar. Mahima Kapur is a skilled Architect and Urban Planner with over 4 years of experience in the design practice and 1-year academic realms. Holding a Master's degree in Urban Planning from Guru Nanak Dev University, Amritsar, she has dedicated her career to explore inclusive urban design solutions, with a particular focus on studying urban voids. Currently serving as Assistant Professor in Guru Nanak Dev University, Amritsar, Ar. Mahima is passionate about shaping young minds to face the needs and challenges of the profession. Alongside being a diligent professional with a portfolio that spans residential and commercial projects she is also a dedicated educator, who strives to inculcate technical proficiency in students, empowering them to become diligent professionals shaping the future of architecture.



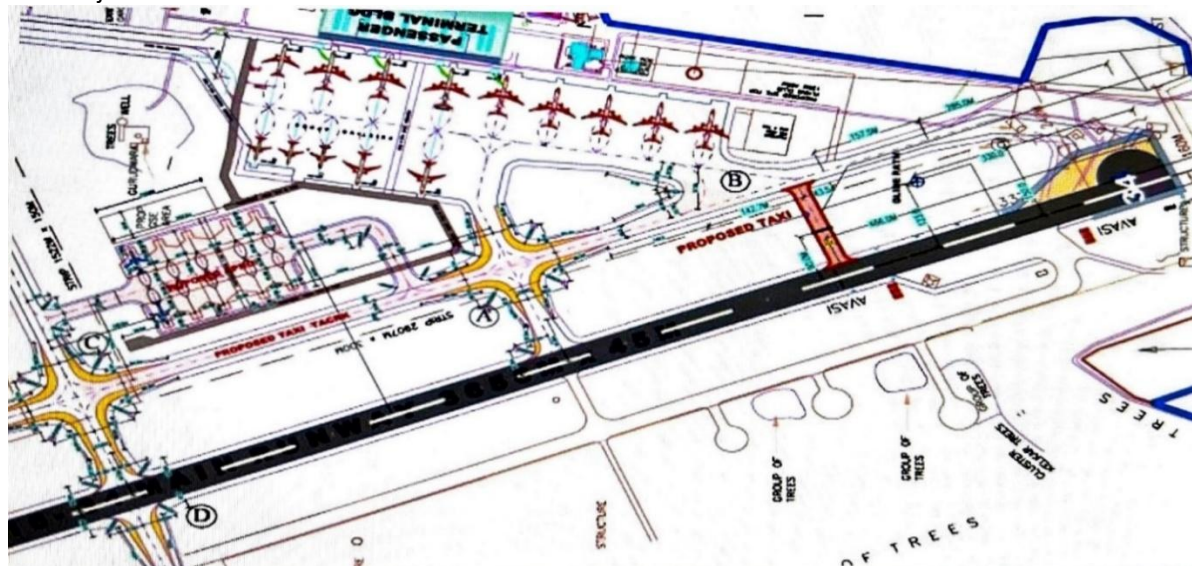
Ar. Parth Arora is an accomplished Architect and Urban Designer with over 9 years of experience in the design practice and 7 years academic realms. Holding a Master's degree in Architecture from Guru Nanak Dev University, Amritsar, he has dedicated his career to exploring sustainable urban design solutions. Currently serving as Assistant Professor in Guru Nanak Dev University, Amritsar, Ar. Parth is passionate about shaping the next generation of architects and planners through innovative teaching methods that blend theoretical knowledge with practical design challenges. Alongside being a diligent professional with a portfolio that spans residential, commercial, and urban-scale projects he is also a dedicated educator, who believes in fostering critical thinking and creative problem-solving in students, empowering them to design spaces that address both current and future challenges.

INTRODUCTION**Sri Guru Ram Dass Jee International Airport (SGRDJ Airport)**

Amritsar Airport is situated on State Highway 25 (SH 25), which connects Amritsar with Ajnala town and further extends to Gurdaspur city. Located approximately 9 kilometres to the northwest of Amritsar, this airport is the only international airport in Punjab. It caters not only to Amritsar but also to a broader region that includes parts of Punjab, Jammu & Kashmir, and Himachal Pradesh. The airport has excellent road connectivity through SH 25, NH 1, NH 15, and SH 1, and it is directly linked to the Grand Trunk Road (NH 1) via a bypass, allowing travellers to avoid city traffic. In addition to road access, the airport is conveniently connected to the railway network through Amritsar Junction. Major city landmarks and transit points are within a 15-kilometer radius of the airport.

Key distances from the airport:

- City Railway Station – 11 km
- Inter-State Bus Terminal (ISBT) – 13 km
- Walled City – 12 km
- Ranjit Avenue and Green Avenue – 9 km



(Source -Airport Authority of India)

Map 1- Existing and proposed infrastructure of SGRDJ International Airport

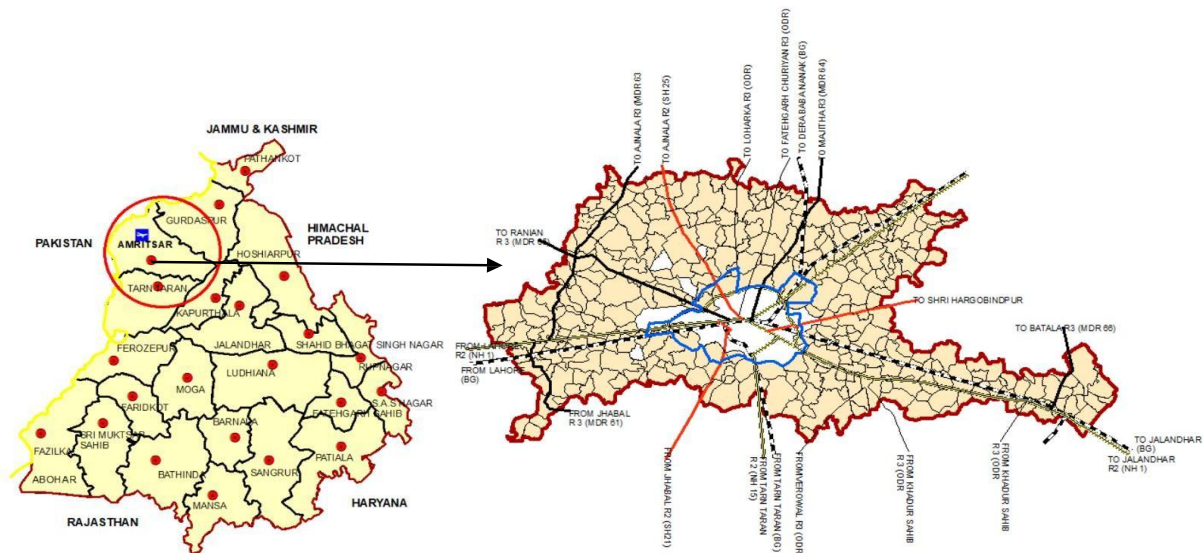
REGIONAL SETTING OF AMRITSAR

It has emerged as a magnificent centre of trade and industry. There are approximately 25,000 industrial units in the district Amritsar with major commodities of production and export being woollen blankets, shawls, carpets, food items, such as papad, pickles, etc (Amritsar Development Authority (ADA), 2023).

At regional level, it has also emerged as a great centre of heritage and historical significance. The history of Amritsar is more than 400 years old and is intricately intertwined with the birth of Sikh religion. Presence of Rajasansi International Airport has also helped in giving it due importance at regional level. At present, it handles approximately 150 commercial flights per week, both domestic and international (Government of Punjab, 2023). Amritsar also enjoys regional importance as it has developed as the major centre for agriculture and allied activities over the period. The Amritsar district has 8 mandis namely, Amritsar, Rayya, Gehri, Ajnala, Mehta, Chogawan, Majitha and Attari. Out of these, six mandis except Ajnala and Mehta, fall under L.P.A Amritsar. (Refer map 2) Presence of strong regional linkages, two National Highways namely NH 1 and NH 15, three State Highways, four M.D.R's and twenty-four O.D.R's places it at a very strategic position with respect to the other

districts by providing connectivity to the other parts of the state and country as well. The **close proximity to the Indo Pak Border** has given a great set back to the development of the city. The border on one hand restricts growth in the North West direction of the city and on the other hand makes it a point of tourist attraction being an “**International Border**” (Amritsar Development Authority (ADA), 2023).

IMPORT



Map 2-Regional setting of Amritsar and its accessibility

Amritsar is connected to the International boundaries also. The things that are imported include clothes, plastic, grapes, millets, tea, almond, vinegar etc. From places like Kashmir, Ahmedabad, Pakistan and Assam etc (Government of Punjab, 2023).

EXPORT

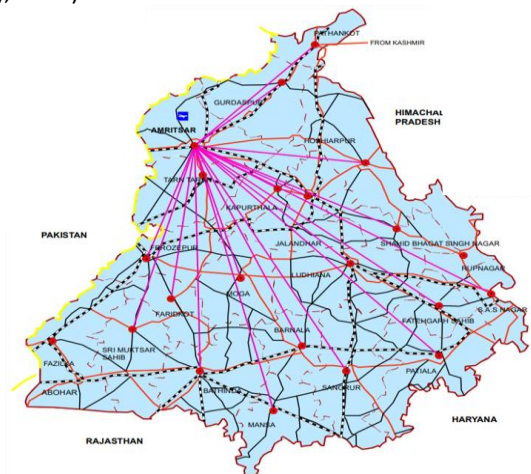
The quantities that are exported include machinery, chemicals, herbs, papad and wadiyan, yarn, textile etc. This import and export increase the relation or interaction of Amritsar with other areas which is an important factor of development for any city (Amritsar Development Authority (ADA), 2023).

Amritsar and its connectivity

Amritsar City is situated in the state of Punjab, in the north-western part of India. The district falls under the Jalandhar Division of Punjab, with its base resting on river Beas. Amritsar is a major commercial, cultural, tourism and transportation hub of the state. The Central Government has recently announced it as a “Heritage City” under HRIDAY, a scheme launched by Ministry of Urban Development. It is also one of the three cities, selected from Punjab, under the Smart City development program of Central Government. Amritsar is second largest district in terms of population in Punjab (Airport authority of India, 2022).

Connectivity

From connectivity perspective, Amritsar city is well connected to other parts of the country via road, rail and air. It also enjoys direct international connectivity with the presence of international airport. Amritsar lies on National Highway 1 which connects it to major business centres of Punjab (like Ludhiana, Chandigarh etc.) and National Capital of our country. (Refer map 3) Being a last major city



Map 3-Airport Connectivity Map of Amritsar with rest of the cities

(SOURCE-<https://puda.punjab.gov.in/?q=amritsar-2010-2031-plan>)

along national border, Amritsar becomes a strategically important city in the country (Government of Punjab, 2023).

Present Profile of Airport

Sri Guru Ram Dass Jee International airport at Amritsar is one of the 18 international airports in India. This is a strategically important airport and is a boon for trade, commerce and tourism in the region. Amritsar airport is one of the well-equipped international airport, with modern amenities. The list below describes the existing and proposed infrastructure in Sri Guru Ram Dass Jee International airport: (Airport authority of India, 2022).

Existing Infrastructure includes Existing terminal building, Existing Car Parking , Cargo terminal and Perishable Cargo Complex (Government of India, 2023)

The Integrated Terminal building at Amritsar has a built-up area of 41000 sqm (441160 sft) capable of handling an annual capacity of 1.5 million passengers with a peak hour capacity of 1200 passengers.

Facilities of the Airport

Aeronautical facilities

Runway, Taxiway and Apron: The length of the runway is 3658 meters, width is 45 meters and orientation 16/34. At present three taxiways and 14 + 1(Cargo) parking stands are available to accommodate upto B744/A346 (Code-E) aircrafts. At present, Amritsar Airport is equipped with the facility of CAT III-B operation to allow aircrafts operation in low visibility condition up to 50 meters. Amritsar Airport equipped with 04 Rosenbaurs (ACFT) and 04 Ambulance to maintain the Category- 8 for Fire services (Airport authority of India, 2022).

1. Non- Aeronautical Facilities (Passenger Facilities)

The capacity of Terminal Building of SGRDJ International Airport, Amritsar during peak hours is 1,600 passengers and Parking for 310 cars. The major destinations abroad include London, Toronto, Abhu Dhabi, Dubai, Muscat, Sharjah, Doha, Tashkent, Ashgabat etc (Airport authority of India, 2022). (Refer table 1)

2. Airlines

Amritsar (ATQ) is a smaller airport in India. One can fly to 23 destinations in 7 countries with 11 airlines in scheduled passenger traffic and 13 domestic destinations.(Refer table 2) .The major airlines operating through this airport and the major destinations connecting through Amritsar are: (Federal Aviation Administration, 2022).

Table 1- Domestic Airlines of Amritsar Airport

S. No.	Airlines	Domestic Sector
1	Air India	Delhi, Mumbai, Chennai, Bangalore, Kolkata, Hyderabad, Silchar, Lucknow, Jaipur, Jammu, Leh
2	Jet Airways	Mumbai, Delhi, Chennai, Bangalore, Kolkata, Bhavnagar, Silchar, Tiruchirappalli, Lucknow, Jaipur, Jammu, Leh
3	Spice Jet	Srinagar, Mumbai, Delhi, Chennai, Bangalore

Table 2- International flights and airlines of SGRDJ Airport

S. No	Airlines	International Sector
1	Air India	Toronto/London (via Delhi)
2	Qatar Airways	Doha
3	Turkmenistan Airlines	Asghabat
4	Uzbekistan Airways	Tashkent
5	Air India Express/Spice Jet	Dubai
6	Malindo Airline	Kualalampur

Cargo facilities

With a strong agricultural and manufacturing base in the Amritsar region, there is an enormous potential of cargo in this region Amritsar airport has well-established air cargo handling facilities which can be used for both

perishable and nonperishable cargo ushering in state-of-the-art cargo terminals in conformity with International Standards (MXD Development Strategists / Stantec, 2015).

The terminal is well equipped to handle the export of general goods (non-perishable cargo) as well as perishable goods. The major commodities being exported now are engineering goods, Pharmaceuticals, Readymade garments, Shawls and sports goods (Federal Aviation Administration, 2022).

Guidelines around the Airport

These guidelines studies under the "THE AIRCRAFT ACT, 1934 (XXII OF 1934)" and amendment in 2007, An Act to make better provision for the control of the manufacture, possession, use, operation, sale, import and export of aircraft. Under the section 9A of this act the power of central government to prohibit or regulate construction of buildings, planting of trees etc (Ministry of Civil Aviation, 2020).

1. Provisions laid under Environmental Impact Assessment Notification-2006

From an aeronautical viewpoint, the basic requirement of an airport is that it have a relatively flat area of land sufficiently large to accommodate the runways and other facilities and that this area be in a locality free from such obstructions to air navigation as mountains and tall buildings (Britannica , 2022).

2. Heritage Structures

In case of Sites located within the distance up to **100m from protected monuments** as notified under Archaeological Monuments and Ancient Sites and Remains Act 1955 and as amended no construction is allowed. For the Sites located within distance of above 100m and up to 200m from the protected monuments, the construction is allowed only after obtaining prior permission from the National Monument Authority.

3. Religious structures

For the Sites located within a radius of above 100m and up to 300m from the notified religious structure from time to time, only non-high rise structures are allowed (Ministry of Civil Aviation, 2020).

Permissible and Non-Permissible land use around the Airport

1. Direct that no building or structure shall be constructed or erected, or no tree shall be planted on any land within such radius, not exceeding twenty kilometres from the aerodrome reference point,
2. Direct that no building or structure higher than such height as may be specified in the notification shall be constructed or erected, or no tree, which is likely to grow or ordinarily grows higher than such height as may be specified in the notification, shall be planted, on any land within such radius, not exceeding twenty kilometres from the aerodrome reference point. (Airport authority of India, 2022).

Table 3- Height limitations in the vicinity of aerodromes

S. No.	Limits of distance from the aerodromes Points measured horizontally to buildings /structures or installations	Difference between the elevation of the top of the buildings/structures of installations and the elevation of the aerodromes (aerodromes reference point)
1	Between 8534 M and 22224 M	Less than 152 M
2	Between 7315 M and 8534 M	Less than 122 M
3	Between 6096 M and 7315 M	Less than 91 M
4	Between 4877 M and 6096 M	Less than 61 M
5	Between 4267 M and 4877 M	Less than 49 M
6	Between 3658 M and 4267 M	Less than 37 M
7	Between 3048 M and 3658 M	Less than 24 M
8	Between 2438 M and 3048 M	Less than 12 M

Note:

- 1.) Irrespective of the distance from the aerodrome beyond 22,224 metres. of the aerodrome/aerodrome reference point, no radio masts or such similar type of installations exceeding 152 metres. in height should be erected without prior permission of the concerned civil aviation authority. (Refer table 3)

2.) No buildings structures or installations should be permitted without prior consultation with the local authority. (Refer table 3)

3.) Location of slaughter houses, butcheries and other areas of activities like garbage dumps which would attract high flying birds like eagles, hawks etc., shall not be permitted within a radius of 10 kilometres. from the aerodrome reference point (Ministry of Civil Aviation, 2020).

Rest of the buildings are in compliance with the Airport guidelines but the only exception is Radisson Blu which exceeds the height restriction and is more than 12m height between 2438m to 3048m.

There is a Gurudwara called as Gurudwara Santar Sahib Ji Dhan Dhan lies within 100 to 300m from Airport but it's not a high-rise building, it works well.

Projections

Continual growth of passenger and freight movement suggested by traffic projections for Amritsar, shows great potential for supporting passenger/tourist related amenities in the vicinity of the airport.

Aircraft Movement

In the year 2015-16, the total average flights catered per month was 808. This included the average 567 domestic flights and 241 international flights (International Journal of Scientific & Engineering Research Volume 9, Issue 11,, 2011).

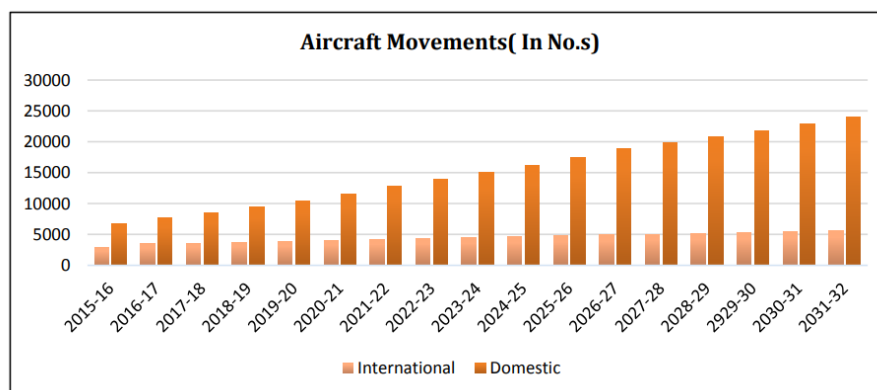


Figure 1- Projections for Aircraft movement

AAI analysis indicates that the overall Aircraft movement is expected to grow in different stages with 14.4 % in 2016-17, followed by 9 % per year till 2021-22, 6.8 % till 2026-27 and a growth rate of 4.6 % till 2031-32. (Refer figure 1) The International Aircraft movement growth rate is expected to be 20 % in 2016-17 owing to the addition of new airline operation, followed by 4 % per year till 2021-22 and 3% per year till 2031-32. The domestic Aircraft movement growth rate is expected to be 12 % in 2016-17, followed by 11 % per year till 2021-22, 8 % per year till 2026-27 and 5 % till 2031-32.

Aircraft movement Projections (2023-2043)

$$\frac{P(1+R/100)}{n} = \frac{13732(1+5/100)}{20} = 14453 \text{ flights}$$

Passenger Movement

The average passengers handled at Amritsar airport has been assessed to be around 3426 per day which includes 979 International passengers and 2447 domestic passengers per day. The passenger traffic growth has witnessed an upward trend over the past few years for both domestic and international passengers.

The future projections for overall passenger traffic indicates that it is expected to grow at 10 % per year by 2021-22, gradually reducing to 5.5% by 2031-32. The International passenger growth rate is expected to be 5% per year till 2021-22, further gradually reducing to 3% per year by 2031-32. (Refer figure 2)

Similar trends can be seen in domestic passenger growth rate, expected to grow by 12% per year till 2021-22, followed by 6% till 2031-32 (International Journal of Scientific & Engineering Research Volume 9, Issue 11,, 2011).

1. Domestic Passenger Projection Calculation

$$\frac{P(1+R/100)^n}{n} = \frac{1144436(1+6/100)^{20}}{20} = 12,05,091 \text{ passengers}$$

2. International Passenger Projection Calculation

$$\frac{P(1+R/100)^n}{n} = \frac{340664(1+6/100)^{20}}{20} = 3,58,719 \text{ passengers}$$

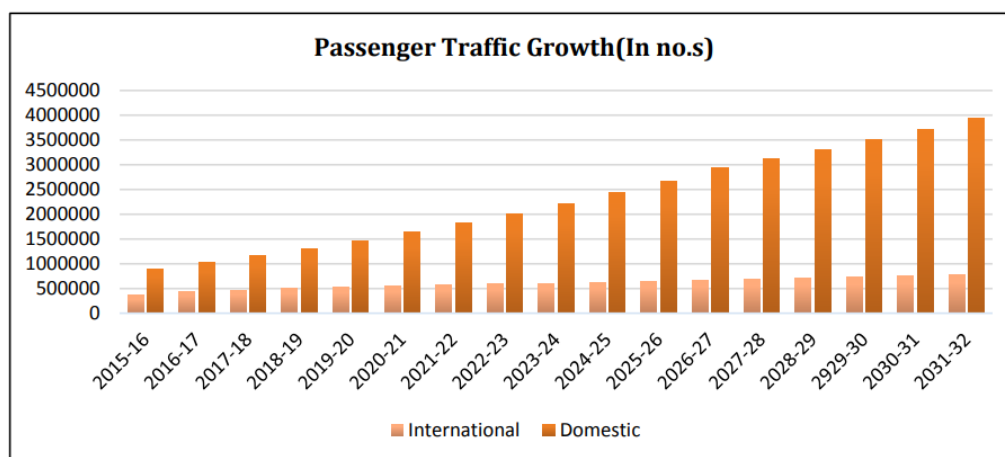


Figure 2-Projections for passenger movement

Freight Traffic Projections

The overall freight traffic handled in 2015-16 was 835 MT which included 611 MT International freight and 224 MT domestic freight. (Refer figure 3) According to AAI forecast, the overall freight traffic is expected to grow 9.5 % per year till 2021-22, gradually reducing to rate of 9 % by 2031-32 (MXD Development Strategists / Stantec, 2015).

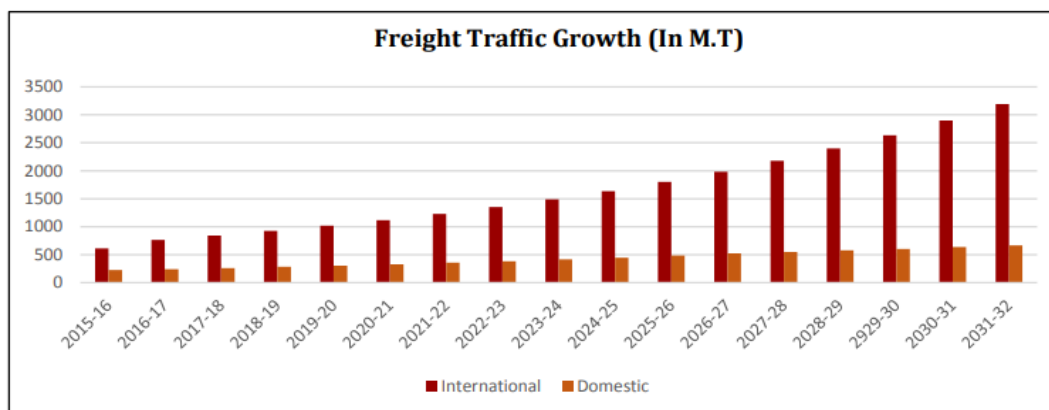


Figure 3- Projections for freight traffic movement



SWOT Analysis

Strength

1. High degree of air accessibility with all major destinations of the within the country and World which covering of **23 destinations and 13 flights in scheduled passenger traffic**.
2. Tourist destination for both National and International visitors with the tourism-based arrangements and flow of goods. The average passengers handled at Amritsar airport has been assessed to be around **3426 per day which includes 979 International passengers and 2447 domestic passengers per day**. Rajasansi has enormous heritage wealth with Historical significance including **Welcom Hotel ITC, cultural market** (Masterplan Report 2031, 2031).
3. Prime distribution Centre for goods and services for large number of small and large urban & rural settlements. According to AAI forecast, the overall freight traffic is expected to **grow 9.5 % per year till 2021-22, gradually reducing to rate of 9 % by 2031-32**. High degree of National and International air connectivity through International Airport, located at Rajasansi.
4. Road geometry is well maintained and has adequate capacity of road varying from **road width from 30m to 45m width with** the elements of green area, berm and carriageway. The presence of the social and physical infrastructure has led to the further development of Ajnala road with many hotels like **Radisson Blu, Le Meridian etc and residential colonies like DR Enclave , Palm Grove etc** (Amritsar Development Authority (ADA), 2023).

Weakness

1. Airport expansion and road extension towards Airport attracts many development around the Airport especially towards city which results the agriculture land is decreasing. There is no alternative road for reaching Airport. **1 route can cause traffic congestion**. Absence of comprehensive statutory development plan leading to confused land use, marked by extreme congestion and sporadic development all around the Airport **with stretch of 6.5 km**. Road extension is going on and grills are installing, road divided into four lane which results congestion on the **road. Road encroachment upto 8 m by informal market causes even problem** (Airport authority of India, 2022).
2. Absence of adequate facilities and amenities both social & physical village of **Tabuwali , Gumtala, Heir, Kambo and Bal**. Road extension and grills are installing on road which affects the shop-owners daily business. High degree of air, water, noise, visual and land pollution due to airport expansion and its surroundings (Masterplan Report 2031, 2031).

Opportunity

1. Attracting large investment and generating considerable employment. Emerging major tourist destination with large increased flow of tourists, both from within and outside India. Becoming air cargo hub for northern India. Emerging growth of commercial area along the road and hub of commercial generating no. of jobs for near villagers. Trade, hotel & restaurant is the highest contributor in tertiary sector with a value of **5.5 billion USD (2015-16), which is nearly 25% of the total** (Government of Punjab, 2023).
2. Physical growth and expansion on the outskirts of study area in radial directions particularly along the Airport Road towards the Amritsar and Ajnala . Distribution Centre for goods and commodities and services to the city. According to AAI forecast, the overall freight traffic is expected to **grow 9.5 % per year till 2021-22, gradually reducing to rate of 9 % by 2031-32**. Amritsar will stand out as World Heritage City, Airport provide better linkage facility to the city (Airport authority of India, 2022).

Threats

1. Change in the land use during last ten year from agriculture land to commercial and planned residential is increased. This scenario leading to decreasing fertile land in LPA of Amritsar including **physical villages of Tabuwali , Gumtala, Heir, Kambo and Bal**.
2. Delay in putting in place an effective and efficient mechanism of urban governance and eliminating multiplicity of agencies to check unauthorized, unplanned and haphazard development. Land speculation is main threat in this area because of Airport expansion and extension of **State highway-25 land value has increased manifolds during last 10 years..** As a result of land speculation, there is coming threat of no development of physical development on some areas.



CONCLUSION

In conclusion, Sri Guru Ram Dass Jee International Airport in Amritsar plays a vital role in driving the city's economic growth, showcasing a blend of strengths and challenges. Its strategic location and connectivity to major Indian cities and international destinations have positioned it as a crucial hub for trade, tourism, and cultural exchange. While the airport faces challenges such as limited infrastructure capacity and seasonal fluctuations in passenger traffic, these can be mitigated through strategic planning and investment. By enhancing infrastructure, expanding flight connectivity, and promoting tourism, the airport can unlock its full potential and contribute even more significantly to Amritsar's economic development. With concerted efforts from stakeholders, the airport can transform its weaknesses into opportunities, fostering sustainable growth and cementing its role as a key economic driver for the region.

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