

Role of Lokpriya Gopinath Bordoloi International Airport in changing the socio-economic conditions of the surrounding area

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ABSTRACT

The aviation industry is a critical contributor to the growth of modern society, with air travel achieving remarkable milestones in transportation services. It helps improve the condition of the local communities in the surrounding areas of airports through employment generation, access to better infrastructure and developments associated with the resulting urbanisation. The Lokpriya Gopinath Bordoloi International Airport in Assam is one of the major airports in India and the only international airport in the entire northeast region of India. The airport has undergone several modifications and expansions over the years and is a significant contributor to the local economy and society. Despite this, the construction of a new, integrated terminal in recent years, has raised concerns from experts and local people alike. This article aims to analyse some socio-economic impacts of this airport on the surrounding area through both primary and secondary data, employing questionnaires for surveys and a semi-structured interview schedule for interviews with the respondents. The households for the survey were selected using a simple random sampling method and the interviewees were chosen through purposive sampling. The results show mixed outcomes, including positive and negative impacts of airport-related developments on the surrounding areas and the local community.

Key Words: LGBI Airport, Socio-economic changes, Community, Development

INTRODUCTION

Air travel is an important industry that has greatly contributed to the advancement of modern society. It has contributed to remarkable service, transportation and development milestones worldwide with airports playing a central role in such progress (Allroggen & Malina, 2014; Banister & Berechman, 2001; Polyzos & Tsiotas, 2020; Song & Tan, 2023, ATAG, 2018; ICAO, 2005; UnitingAviation, 2018). In the context of India, the aviation industry has proven beneficial to the economy directly and indirectly by facilitating trade and commerce, tourism and access to otherwise geographically remote areas (Bansal & Sen, 2021; IATA, 2018; IBEF, 2013). This industry has seen unprecedented growth over the past two decades. It is estimated to have supported about 6.2 million jobs associated with the air transport sector in 2017 and 1.5 % of the national GDP was supported by this sector, including foreign tourists arriving by air (IATA, 2018). The industry has grown further in the following years, despite some setbacks during the global pandemic, and has emerged as a significant aviation market by 2023 (ANI, 2023)

The Lokpriya Gopinath Bordoloi International Airport in the northeastern state of Assam, India (LGBI Airport, henceforth) is an indispensable transport hub of the region. Since it was established in 1958, it has been vital in linking this remote part of the country to the rest of India and beyond due to its strategic

position, serving as the primary gateway to the hilly northeastern states. The region's challenging terrain makes road connectivity difficult, and air travel has emerged as the most efficient and dependable mode of transportation evidenced by the ever-increasing footfall at the LGBI Airport (ANI, 2023; PratidinBureau, 2023). The LGBI Airport is a crucial contributor to the region's economy, providing a significant source of employment. It offers direct employment opportunities to a diverse workforce comprising security personnel, ground staff, airline crew, and administrative staff. The airport's role as a key employer has a cascading effect on the local economy, leading to the creation of indirect employment opportunities in sectors like hospitality, transportation, and retail. The airport's direct employment opportunities come with benefits such as job security, healthcare, and other employee benefits, which have a positive impact on the lives of the employees and their families. Additionally, the airport's contribution to the economy goes beyond employment, as it also generates revenue for the local government through taxes and other fees, which can be used for the development of the region's infrastructure and other public services. As such, the airport areas have emerged as highly sought-after locations for businesses and industries due to their location and ample growth opportunities.

However, development of any kind is accompanied by both benefits and drawbacks, especially when public projects like airports are concerned where the concentration of activity centres around the transportation facility itself or linkages to various establishments associated with the airport (Jerome & Nathanson, 1972). The rapid urbanisation in the surrounding areas of the LGBI Airport is also prone to certain negative impacts on both the people and the environment as has been the case with such urban developments across the globe (Bednarek, 2024; Pawe & Saikia, 2020; Sheard, 2018; Sultana, 2020; Teixeira, 2024). Unprecedented urban sprawl in the past two decades in Guwahati, including the area around the LGBI Airport has led to certain social, environmental and economic problems that emerge when such rapid urban development takes place, despite the various economic and social benefits. These aspects in the context of the LGBI Airport remains rather unexplored in current available academic works. The present study, a part of a larger thesis on the airport's role in the area, therefore, aims to examine certain socioeconomic aspects of the local community around the LGBI Airport as it is essential to understand the actual impacts of the airport and related urban development on the vicinity, beyond the economic benefits of the LGBI Airport.

The two specific objectives of this study are:

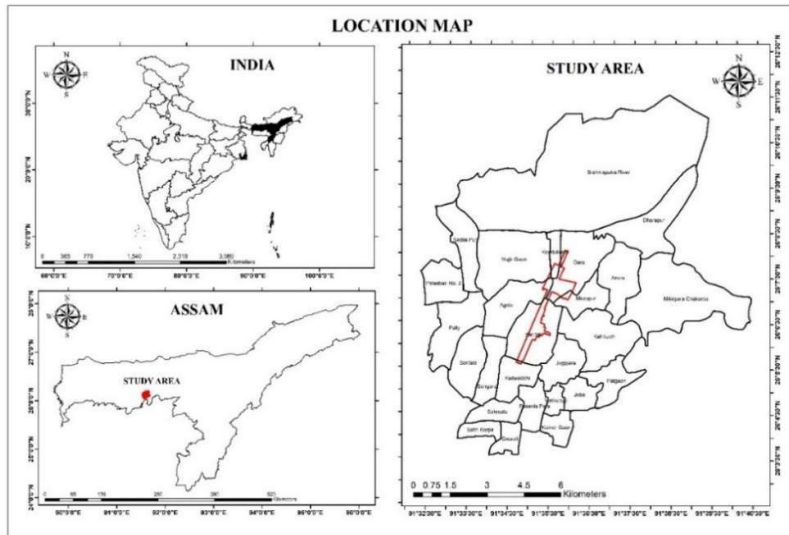
- To understand the contemporary socioeconomic status of the surrounding local community of the LGBI Airport.
- To highlight the role of LGBI Airport in the infrastructural development of the surrounding area.

METHODOLOGY

The LGBI Airport is located between Kamrup Metro and Kamrup Rural districts of Assam. The airport covers a total area of 627.482 acres (2.539 km²) of land. The detailed study area has been demarcated through buffering with a 3 km radius (64 km²), surrounding the LGBI airport. The LGBI airport is located at 26°06'18" N latitude and 91°35'17" E longitude. It is situated 26 km from the centre of Guwahati city

towards the western side, well connected by roads from different directions. The field survey covers 25 villages within this study area, while the interviews were conducted with employees within the airport premises and respondents from Borjhar, Azara, Kahikuchi and Dharapur around the airport which serve as channels of connectivity and have seen the most urban development.

Fig 1: Location map showing the study area



This study uses both primary and secondary data for its analysis. The secondary data was sourced from official reports and publications, books, journals, working papers, research papers newspaper articles and websites. For the primary data, this study employed a mix of quantitative and qualitative methods. A survey of 386

households in the study area was conducted, from which certain data has been extracted for this article to analyse the impact of development-driven activities and any associated changes in land use. Moreover, semi-structured interviews were conducted with 50 respondents to collect data on local economic, developmental and social activities, and environmental impacts and to understand any possible changes in community dynamics or culture within the study area. A simple random sampling method was used to select the households for the survey, whereas the respondents for the interviews were selected using purposive sampling in the study area. Furthermore, the data collection was done between January 2020 and November 2023.

Socio-economic impacts of LGBI Airport

The LGBI Airport has been more than just a place for transportation, especially since the liberalisation of the Indian economy in 1991, followed by subsequent policies by the central and state governments to promote different ventures into trade and commerce (MoCA, 2021; Kumar, Gupta, Changkakati, & Kumar, 2023). Its role as a gateway for both imports and exports (not just nationally, but also at the international level) has facilitated the smooth movement of goods, boosted industrial growth and fuelled the region's overall development (Singh, 2021) by boosting tourism in the region too. The airport's expansion has also triggered significant infrastructure developments, which have improved urban connectivity, making life more convenient for residents.

During the initial years, the study area did not experience much development as little attention was paid to these rural areas. However, over the years, several government plans for rural development

(connectivity through roads, sanitation and clean water provision, construction of primary health centres and schools, housing plans, etc) have benefitted the study area and its residents. Although these developments cannot be directly linked to the existence and functioning of the airport, about 35% of the respondents believe that because of their proximity to the airport, some of these villages have been prioritised for such developmental plans. Moreover, the unplanned concrete structures that have mushroomed along the connecting roads (Azara, Dharapur, Borjhar, Kahikuchi) and the inflated land and property prices were attributed to airport-related developments.

Furthermore, the LGBI Airport enables a fascination towards direct or indirect involvement with the airport. Due to the various developments associated with it, there is an in-migration of people engaged in different levels of the workforce, investments and acquiring of properties by people from outside the region. Many of the natives in the surrounding areas have had to sell their land, both residential and agricultural, which has been acquired by the authorities for the construction of the new terminal. Others have had to sell land to construct connecting roads and other aspects of urbanisation like new residential complexes and townships, businesses, etc. Some of the locals are not happy with this situation but have no means to address it.

Housing Patterns: There have been significant changes in the housing patterns in terms of construction materials and ownership. The type of housing is reflective of the living standards and hence an important socio-economic indicator.

Table No. 1: Housing type

Type of house	Number of houses	Percentage
Kutcha/Thatched	2	0.51
Semi-pucca	28	7.25
Concrete Assam type	203	52.59
RCC	153	39.63

The study shows that only 0.51% of the respondents live in kutcha/thatched houses, while 7.25% live in semi-pucca houses. The majority of the respondents live in concrete Assam-type houses (52.59%) and RCC-type houses (39.63%). Only 7.78% of respondents live in rental houses, while the rest live in their own houses. Dharapur has the highest number of concrete Assam-type houses and RCC types (13.6%

and 18.75%, respectively). It has been observed that the villages of Borjhar, Kahikuchi, Mirzapur, Azara, and Dharapur have shown a significant growth trend in the construction of concrete Assam-type and RCC-type buildings. This increase in the percentage of such houses near the airport is a clear indicator of the development of commercial and residential spaces, resulting from urban expansion and growth. The airport has directly contributed to the growth of the businesses and led to an increase in the demand for rented accommodations in these areas, for a migrant population looking for job opportunities and business prospects.

Occupation and Livelihood: Livelihood strategies operate both at household and individual levels, either through continuity or through modification of economic and social activities to meet the basic needs for survival and existence. The majority of the respondents have shifted from traditional agro-based livelihoods

to more tertiary sectors, especially the service sector over the past decade. Moreover, some respondents who earlier engaged in small-scale cultivation or animal husbandry as a supplementary source of household income have had to give up on it, especially since parts of their agricultural and residential lands were acquired for the new airport terminal construction.

Table No.2: Types of Occupation

Occupation	Percentage of respondents
Government service	1.92
Private service	47.38
Business	49.35
Cultivators	1.35

The above table shows that the majority of the respondents are engaged in business and private services (49.35% and 47.38%, respectively), while 1.92% work in government jobs and 1.35% are cultivators.

The total workforce of the study area has been increasing over time as the overall size of the population has grown. The people of the study area have adapted to the changing socio-economic and environmental scenario and modified or developed diverse occupations for their livelihoods related to aviation and other sectors. The demand reflected by the expenses of people employed directly or indirectly in the air transportation industry constitutes the size of the induced impact. In the study area, LGBI Airport has a significant impact on the local economy by catalysing various supply and demand effects, including the creation of jobs. The development of new facilities and infrastructures at LGBI Airport has created various jobs such as ground staff, administrative staff, housekeeping, security, construction, etc. This is evident from the requirement of a large number of human resources at different levels of operation, ranging from supervisors to cleaning service personnel. From the responses received from the interviewees, it was observed that employees working at LGBI Airport have been able to help and motivate others to prefer jobs associated with the airport. Another induced impact was seen in businesses operating in the LGBI Airport premises, having reported an increase in their profits from sales, and increased demands leading to the need for reliable suppliers. More business outlets within the airport have also opened.

The study also found that about 52% of the total population in the study area is either directly or indirectly engaged with the airport. Various livelihood-related activities such as airport ground staff, security services, taxi services, hotels, homestays and other kinds of lodging services, restaurants and eateries, are some of the major sources of income for the local population. A shift from agriculture to other sources of livelihood like small-scale private business, retail ventures, renting out accommodations, daily wage work, and other work in the informal sector highlights the significant impact that LGBI Airport has on the socio-economic development of the region.

Infrastructural Development: Infrastructure refers to the physical framework of facilities that provide a wide range of essential services to the public, such as road communication, water supply, sewage disposal, medical facilities, educational institutions, and more. Investment in infrastructure plays a pivotal role in achieving rapid and sustainable economic growth. Furthermore, it can promote the expansion of local manufacturing industries and provide access to larger markets for their products, as has been the case with

the Centre for Perishable Cargo at the LGBI Airport (Singh, 2021) or the various manufacturing and bottling plants in the study area.

The airport is well-connected to the rest of the state and the other northeastern states by road. Existing roads connecting the airport to the city and beyond have been upgraded and new ones have been constructed to handle the ever-growing volume of traffic better and provide smoother connectivity. The Central Government of India has started to upgrade the two-lane Bilasipara-LGBI Airport Road (aka the National Highway-17) and the airport stretch is set to undergo expansion to a four-lane highway under the Bharatmala Pariyojana project, aimed at facilitating seamless traffic movement in lower Assam. An analysis of the road network data as depicted on maps shows that the increase in population in the region has led to a noticeable rise in the number of roads connecting different areas, including residential and village roads, inter-village roads, and major highways like NH-17. Upon comparing the road network before 2000 with the 2023 road map, a substantial variation is observed, with a marked increase in the number of roads. Furthermore, the Airports Authority of India (AAI) under its CSR projects have undertaken the renovation of important corridors and arterial roads (G-Plus News, 2018).

In terms of health services, in India, the central and state governments have been making continuous efforts to improve the health of the citizens, especially since the National Rural Health Mission (NRHM) was launched in 2005. In the study area, the existing health infrastructure comprises a Primary Health Centre (PHC) at Mirzapur, a Dispensary/Health Centre at Azara, Kahikuchi, Dharapur, and Agchia SC Health Sub-center, Garal MPHC Primary Health Center, Borjhar SC Health Sub-center, Bongara Health Center, and Bongara Health Sub-center. However, it was found that the PHCs are inadequate in terms of staff and equipment, but they regularly organize general health check-ups, awareness programs on maternal and child care, and immunization camps in surrounding villages. For minor illnesses, people also visit Allopathic hospitals in Palasbari and Azara. Furthermore, within the airport premises, free health camps are often organised for the employees which can be an added benefit for the airport staff.

Quality education is pertinent to bringing change in society, beginning with lower primary stage of education that forms the foundation on which the development of every citizen and the nation as a whole depends. The educational and skill development infrastructure is quite well-established and accessible to all in the study area. Numerous government-funded and private educational institutes function well in this area and the skill development centres train the local youth to secure employment in the various industrial sectors. Some of the better-known government schools located in the study area are Rajdhar Borah Higher Secondary School, Saru Agchia L P School, 100 No. Barjhar L P School, Kendriya Vidyalaya Borjhar (1973), Borjhar LP School (1940), Palashbari Girls High School (1972), Palashbari LP School (1978), Palashbari Anchalik High School (1960), Sena Ali Bari School (2003), Sri Mahendra Choudhury High School (1989), Hadumpur Anchalic L P School (1987).

A study revealed that of all the government schools in the study area, all the school buildings are made of pucca materials and have separate toilet facilities for males and females. 51.9% of schools have 3 to

4 classrooms, 45.6% schools have 5 to 6 classrooms and 2.5% of schools have 7 to 8 class-rooms. 89.9% of schools have playgrounds whereas; 10.1% do not. All the schools have electricity connections and functional lights and fans. 46.3% of schools have fire extinguishers whereas 53.7% do not. 40% of schools have a common room for students while 60% don't. 30% of schools have an administrative office room while 70% of schools do not have an administrative office room.

Apart from these government schools, some non-government schools, namely, Kendriya Vidyalaya Borjhar, St Clare's Convent High School, Maria's Kids, P. Axel Public School, and Godwins School are located in the study area and they have all the required amenities mentioned above. Furthermore, the 'Airport Institute' established in 1977, an English-medium school, has been run and managed by the AAI under their CSR program that caters to the education of underprivileged children. This school was renamed the 'Guwahati Airport School' after the privatisation of the LGBI Airport handed the ownership and management of the airport to the Adani Foundation. The CSR wing of the Adani Group has constructed a new building for the school and upgraded the infrastructure, and added more teachers and resource persons to the roster, which is a very welcome impact of the airport on the educational infrastructure in the area.

Table No.3: Educational status in the study area

Educational status	Percentage of respondents
Illiterate	0.64
Primary education	5.74
Matriculate	22.53
Higher secondary schooling	33.38
Graduate	29.67
Postgraduate	8.04

In terms of literacy levels, the study indicates a total literacy rate of 99.36%. The data indicates that the residents of the area are highly aware of the importance of education and have access to formal education, as the illiteracy rate is extremely low in every area surveyed. The analysis of the data also

revealed that 5.74% of the population have completed only up to primary-level education, while 22.53% have only matriculated. Furthermore, 33.38% of the population have completed up to higher secondary level education, while 29.67% are graduates, and the remaining 8.04% have post-graduate degrees.

The study revealed that the rise of employment opportunities in various sectors like aviation and related industries, hotel management, marketing, etc., has motivated people to pursue basic education to secure a job in these fields within the study area. The study also revealed that around 18% of the respondents were affiliated with the aviation sector, while the rest were engaged in other sources of livelihood.

Socio-cultural impacts: In terms of the social, cultural and environmental impacts of the airport and related developments, there have been some developments that may not be very positive in the opinion of the respondents. Many respondents expressed displeasure at the fact that big corporations and capitalists, some from even outside the state, have purchased properties and made investments in businesses in the area. These respondents see this as a threat to the indigenous people's future as large tracts of land which were previously used for agriculture, have been converted for industrial and other use. There is a concern for the

environment, the fragile ecosystem and the natural flora and fauna expressed by some of the respondents as large-scale concrete constructions are underway as part of the developmental efforts. Other respondents expressed that they are content that the area is finally seeing developments and urbanisation which they believe to be 'much required and deserved' for the locals.

Furthermore, a new migrant community has evolved which, while adding to the diversity, is also creating a separate migrant identity. There is a risk of exclusion of certain sections of people, especially as urbanisation intensifies and creates pockets and ghettos and leads to alienation of those who fail to assimilate with the existing community. There is also an increasing difference in cultural values as the younger generation joining the workforce are exposed to different ideas and values.

Conclusion

The LGBI Airport has contributed to the transformation of the region into a new centre of growth. This growth drives economic development and creates new opportunities for the people in the surrounding areas. The LGBI Airport has been a key player in regional aviation since it gained worldwide recognition in 2000. It proudly served 5.7 million people annually (before the global pandemic) making it the 10th busiest airport in India, and this trend has continued to rise post-pandemic as well.

The rapid expansion of Guwahati City has brought about significant changes in the urban outskirts and the rapid urbanization in the study area has led to significant changes in land use patterns and traditional livelihoods. These changes have also brought new opportunities for the communities, which are believed to get a further boost with the opening of the new integrated terminal of the airport. It is expected to result in the enhancement of direct and indirect employment opportunities, revenue generation, as well as commercial and industrial activities that will positively impact the region's economic growth, directly or indirectly affecting economic activities like production, consumption, distribution, and trade. Although some sections of the respondents are sceptical of the rapid urbanisation and the resulting impacts on the community and ecology, the major chunk of the data points towards positive impacts in the future. Therefore, it would be prudent to attempt a reduction of the urban sprawl and ensure proper implementation of planned development to arrive at the expected outcomes.

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