

Infrastructure and Accessibility: The Role of Helicopter Services in Economic Development in Northeast India

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Abstract

The article has effectively investigated the significant impact of several helicopter services on the economic development of the Northeast Indian region. It has been identified that Helicopter services have played a crucial role in effectively boosting economic development within Northeast India through accurately enhancing both accessibility and connectivity. The study has revealed that Civil Helicopter Market Size has been valued at nearly USD 12.51 Billion in the year 2022. The Civil Helicopter market industry has also been projected to grow directly from around USD 12.951 Billion in the year 2024 to approximately USD 17.0 Billion by the end of the year, 2032. The study includes a literature review covering the Concept of Helicopter Services in Northeast India. The services of helicopters in Northeast (NE) India were potentially introduced in the year 1992-1993 for providing a positive connection for the passengers into the remote areas with the other states. The study has included the phenomenon of economic diversification within Northeast India has potentially involved a shift through a reliance on the specific primary sector, and the helicopter services have been operating under the “Regional Connectivity Scheme” (RCS). The study has derived the following secondary data analysis with both the aspect of quantitative and qualitative aspects. The study selected interpretivism to identify an in-depth analysis of the findings and an explanatory research design. A thematic data analysis technique is followed to depict the research findings of the study, and this technique helps the researcher to analyze the information in a crucial manner. The positive impact of leveraging helicopters within socioeconomic processes with the medical services in the areas of “Helicopter-based emergency medical services” (HEMS), to improve the rapid transportation of patient.

Keywords: Aviation Industry, Infrastructure Development, Investment, Helicopter Services, Tourism, Economic Development

Introduction

Helicopter services are significant and play an essential role in effectively boosting economic development within Northeast India through accurately enhancing accessibility and connectivity. This is especially within several remote and mountainous regions. Through accurately providing a faster and also convenient mode of transport, mostly helicopters can accurately bridge the infrastructure gap. These are also significant in promoting tourism, and facilitating several emergency services. This can further lead to increased trade, ultimately improved huge access to healthcare, and helpful in leading to overall economic growth. The number of operational civil helicopters within India are 244 and the state that is with almost the leading number of several helipads is Himachal Pradesh (Sun, 2023). On the other hand, the company that has the largest helicopter fleet is *Pawan Hans Limited*. There are even over 1000 helipads that are across the whole country.

The Indian Civil Aviation industry has witnessed almost a significant robust growth over the past years. This further contributes significantly to the overall economic development of the country, India. In addition to that it has been the pride of the nation which is ultimately playing a crucial key role in accurately collecting many Indians that are directly to the several remotest corners of the country and also to the world (Tyagi, 2021). Due to this particular reason this further holds a big responsibility of systematically enhancing the business and many tourism opportunities within India. However, the following research articles will provide an overview of the impact of multiple helicopter services on the overall economic development of the Northeast Indian region. Additionally, it will also analyze the influence of helicopter services on infrastructure development along with key challenges.

Research aim & objectives

Aim: The article aims to investigate the impact of several helicopter services on the economic development of the Northeast Indian region

RO1: To discuss the overall impact of multiple helicopter services on economic development

RO2: To effectively analyze the influence of helicopter services on infrastructure development

RO3: To evaluating the socioeconomic impact of Helicopter Services

RO4: To recognize numerous challenges and limitations of helicopter services

Literature Review

Concept of Helicopter Services in Northeast India

The helicopter services have been effectively playing a critical role in the development of economic development within Northeast India with the help of enhancing the accessibility towards underserved and remote areas, improving connectivity and facilitating different economic activities. The significant concept of the helicopter services process with bridging the infrastructure gap and facilitating tourism. The northeast of India has been facing issues with its rail and road connectivity, especially within the hilly and remote areas. Helicopter services provide with viable solution through direct access towards these locations and bypassing the requirements of towards the investment of extensive infrastructure investment. The services of helicopters in Northeast (NE) India were potentially introduced in the year 1992-1993 for providing a positive connection for the passengers into the remote areas with the other states and also the union territories of India at an affordable cost (Tripathi *et al.* 2022). This is also intended for evacuating the people in medical emergencies and natural disasters. Furthermore, in 2021, the services of helicopters were significantly operated in seven numbers of NE states.

Helicopter services have consisted of the offer of a viable solution with the help of providing direct access towards Northeast locations and bypassing the requirements of extensive infrastructure investment. Tourism facility is also an important aspect that is played by the helicopter services, and the region has effective cultural heritage, rich biodiversity, and scenic beauty makes the place more popular as a tourist destination (Baniya and Thapa, 2025). Helicopter enhances tourism through providing a convenient and quick access to the remote sites and also offers scenic beauty for tourists. However, the helicopter services help the people to overcome the geographical challenges as the remote areas are very difficult to travel by road, and also it is time-consuming. These services support remote communities by connecting them to communities, costing the region and also the country, to provide essential or crucial services and access towards resources. This phenomenon also helps the development of the economy and tourism. Helicopters used for adventure and sightseeing tourism offer an effective perspective towards the natural beauty of the region and promote cultural heritage.

Economic Diversification is promoted through Helicopter Services

The helicopter services, especially within remote areas, help to promote economic diversification through the improvement of connectivity, boost tourism and also perform in facilitate access towards essential services (Aggarwal *et al.* 2024). It leads towards achieving growth within different sectors such as corporate level, tourism, cargo services and medical services with emergency proposals, and this further performs in diversifying the economic approach. Helicopters offer more efficient and faster transportation, particularly in mountain areas where the traditional and limited infrastructure is established. It improves connection to easily access resources, markets and other destinations, boosts economic activities and trade. Scenic flights and helicopter tours attract tourists to create new revenue for jobs and also streams within the tourism sector. In this context, helicopters can transport goods, especially within remote areas, to facilitate essential supplies and conditions.

The economic diversification within Northeast India has potentially involved a shift through a reliance on the specific primary sector, and the helicopter services have been operating under the “Regional Connectivity Scheme” (RCS). RCS plays a remarkable role in promoting economic diversification with the help of improving connectivity towards hilly and remote areas (Riazi, 2024). These services perform to provide support in different sectors that further lead towards job creation and also contribute to enhancing overall economic growth within the region. Helicopter services rapidly transport the patients towards hospitals for emergency cases regarding healthcare and different emergency services, relief operations and rapid evacuation at the time of a natural disaster.

Methodology

The study has been depicted with the help of the following research methodology to predict the study by maintaining a structural or systematic approach throughout the study. The research philosophy has consisted within the study by selecting *interpretivism* to identify an in-depth analysis of the findings, and an *explanatory research design* has been chosen as a research design for the identification of information based on the given subjective manner. The study has derived the following secondary data analysis with both the aspect of *quantitative and qualitative* aspects. Secondary data refers to the information that was collected previously and is also being used within the study for different purposes. Secondary quantitative research focuses on numerical data collected from statistical sources, and qualitative analysis involves processing non-numerical data (Susanto *et al.* 2024). This is often used for the phenomenon of exploring experiences, meaning and also the perspective of the study.

Furthermore, the study has been derived with the help of selecting a *mixed method* for its research approach for understanding the effective meaning of the given subjective manner. A *thematic data analysis* technique is followed to depict the research findings of the study, and this technique helps the researcher to analyze the information that has been gathered using secondary data analysis for both quantitative and qualitative approaches.

Result-Thematic Analysis

Thematic Coding

Sl.No	Thematic Code	Associate Keywords	Concept of Theme
1	Economic Impact of Helicopter Services	Helicopter Services, Aviation Market, Passengers	India has been expected to become the largest domestic civil aviation market of the world in the upcoming 10 to around 15 years. As per the IATA "International Air Transport Association (IATA , India will directly displace the UK that is in third place in the year, 2025. The capacity of the Airport sufficient to accurately process around 1,150 million passengers per annum is needed by the end of the year, 2031-32 (Iyer and Thomas, 2020).
2	Infrastructure Development & Heliport Impact	Infrastructure, Investment, India,	Infrastructure development has been a critical factor in accurately boosting the economy. An increase that is particularly in investment within infrastructure directly opens-up a number of employment opportunities mainly due to its backward and also because of its forward linkages. The constantly changing demographics and also the environment will further need the converged development of different infrastructure facilities mainly within India (Mohanty <i>et al.</i> 2022).
3	Helicopter Operations: Impact and Limitations	Challenges, Air Pollution, Aviation Industry	From almost an over-regulated sector, the aviation industry has been mostly changed to liberal, open and also investment friendly sector within India. The traffic has been constantly growing also in all the three segments and these segments are passenger, freight and also including aircraft movement. Apart from that, the challenges exist in helicopter operations that are about air pollution that has a negative impact on humans as well (Anwar <i>et al.</i> 2021).

Theme 1: Economic Impact of Helicopter Services

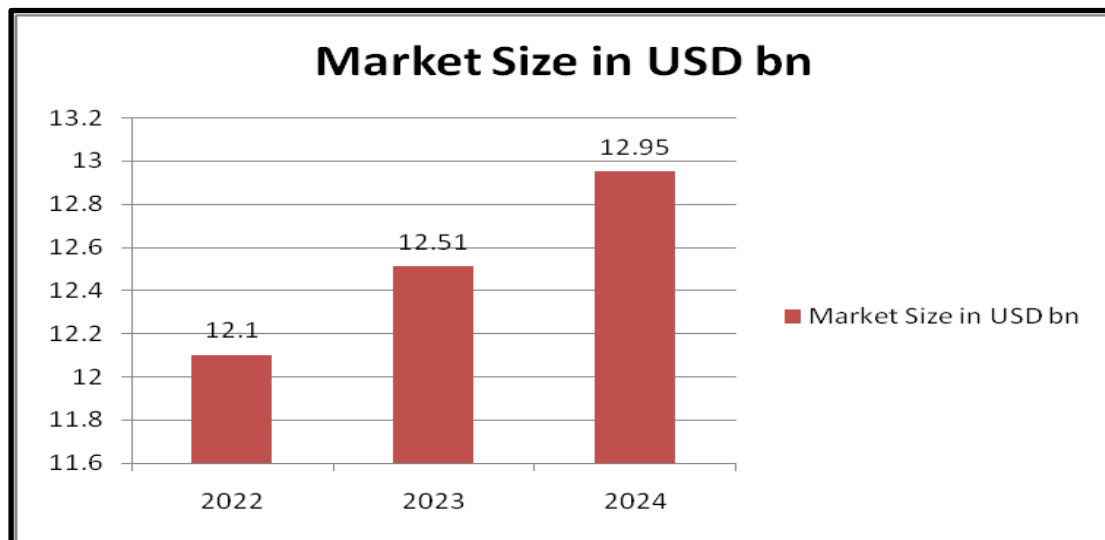


Figure 1: Civil Helicopter Market

(Source: Self Created in MS Excel, inspired by Akre, 2021)

Civil Helicopter Market Size has been valued at approximately USD 12.5184836203095 Billion in the year 2022. On the other hand, it has been seen that the Civil Helicopter market industry has been projected to accurately grow from around USD 12.9514406737155 Billion in the year 2024 to nearly USD 17.0 Billion by the end of the year, 2032. This has been further exhibiting a CAGR “compound annual growth rate” of approximately 3.46% that is mainly during the forecast period that is 2024 - 2032 (Akre, 2021). While, a rise within the demand for rotorcraft that is from the oil and gas industry and also an increase within the use of helicopters.

These are for SAR “search and rescue”, EMS “emergency medical services”, and along with law enforcement, public safety, as well as multiple firefighting activities. All these have been key market drivers in effectively enhancing the market growth. By the year 2028, it has been also anticipated that India will directly receive around USD 30 million in arrivals of foreign visitors as per the India Brand Equity Foundation (Akre, 2021). Hence, helicopter services have almost significant and also a multifaceted economic impact that has been ranging from boosting tourism and trade and to supporting a number of necessary services such as medical evacuations.

Theme 2: Infrastructure Development & Heliport Impact

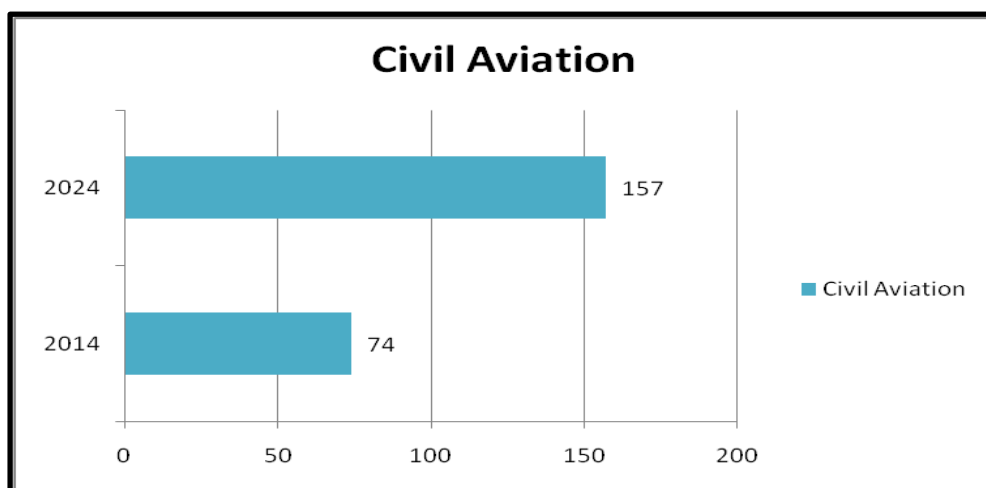


Figure 2: Number of Airports in India

(Source: Self Created in MS Excel, inspired by Pib.gov.in, 2024)

The aviation sector of India has been experiencing a meteoric rise that has been further fueled by soaring demand. This is also by the unwavering commitment of the country's government that is to its growth with the assistance of multiple supportive policies. This specific dynamic shift has accurately propelled India to the forefront of the significant global aviation ecosystem, and it has become the third-largest domestic aviation market that is even throughout the world. However, as shown in the above bar chart, the numbers of numerous operational airports in India in the year 2014 were around 74 (Pib.gov.in, 2024). By the end of the month, September 2024, the number had almost increased to around 157.

Along with that, it has been identified that the number of FTOs "flying training organizations" in June in the year 2016 was 29. But this number has been increased to nearly 38 with approximately 57 bases by the mid of the month, December in 2024. The RCS-UDAN Scheme is one of the significant schemes that are referred to as Regional Connectivity Scheme. It was launched on April 27, in the year 2017, by Prime Minister of India Shri Narendra Modi and it was with the Shimla-Delhi flight. It mainly aimed to accurately enhance air connectivity to several underserved regions (Pib.gov.in, 2024). Furthermore, it has been recognized that UDAN 4.0 has given a particular focus on the multiple Northeast, hilly states, and several islands and also include several helicopter services. A number of airports such as Pasighat, Ziro, Hollongi, and along with that Tezu have directly boosted Northeast tourism and it is by improving accessibility.

Theme 3: Helicopter Operations: Socioeconomic Impact and Limitations of Helicopter Services

The helicopter services have a significant or remarkable socioeconomic impact, consisting of both negative and positive phenomena. The helicopter services positively perform for the improvement of connectivity within the remote areas, which helps facilitate and also enhances medical access to provide support towards economic development (McHenry *et al.* 2024). On the other side, negatively, it is processing with more costly for the implementation and also operational cost enhancement. It also consists of the negative impact due to its noise pollution and concerns related to global warming. Helicopters are especially valuable in the mountain areas to provide faster support and also provide efficient transportation support in comparison with traditional methods. However, this helps facilitate the transportation of goods, people, and services and boosts social integration and social economy within the country in a crucial manner.

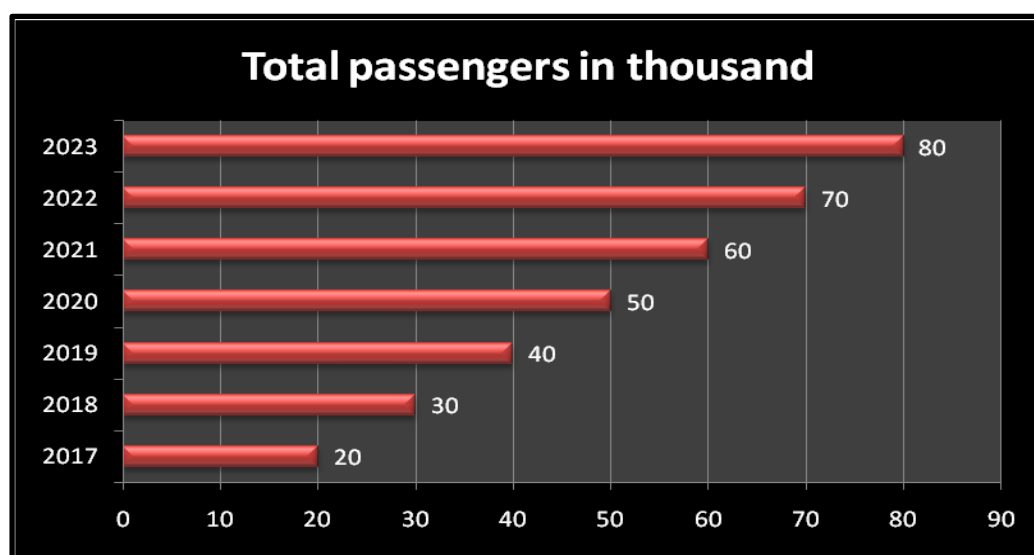


Figure 3: Total number of passengers in the financial years 2017 to 2023

(Source: Statista, 2025)

Based on the above figure, it has been optimized that, in the 2023 financial year, many 73 thousand passengers have used the services through Heligo charters. The graph indicates an increasing number of passengers compared with the respective financial year (Statista, 2025). The positive impact of leveraging helicopters within socioeconomic processes with the medical services in the areas of "Helicopter-based emergency medical services" (HEMS), to improve the rapid transportation of patients to the hospitals, potentially saves the lives of human beings and also improves critical outcomes (Ackermann *et al.* 2024). This also performs a positive approach towards economic development, as the helicopter services provide support in industries such as gas exploration and oil exploration, tourism, construction, job creation and revenue generation. Furthermore,

the positive impact of socio-economic areas due to helicopter services is an increasing phenomenon in the access towards providing essential services to facilitate education, healthcare and other services within remote communities.

The negative impact of the socioeconomic factors is that its cost, implementation and operation of the HEMS system are subject to being expensive and require a remarkable investment towards equipment, infrastructure, and trained personnel. Helicopter operation generates noise pollution and creates a negative impact across the country. Safety risk also comes under the negative impact of leveraging socioeconomic factors through helicopter services and leads towards injury and loss of life of people (Khadivar *et al.* 2024). Hence, while the helicopter services consist of offering different benefits, it is crucial to carefully refer to their negative impacts to ensure their implementation is processed equitably and sustainably.

Discussion

From the above thematic analysis, it has been identified that Civil Helicopter Market Size has been valued at around USD 12.51 Billion in the year 2022. It has also found that the Civil Helicopter market industry has been projected to grow from around USD 12.951 Billion in the year 2024 to around USD 17.0 Billion by the end of the upcoming year, 2032. Apart from this, the above theme has analyzed that by the end of the year 2028, India will directly receive approximately USD 30 million in arrivals of numerous foreign visitors as per the India Brand Equity Foundation (Akre, 2021). The above analysis also mentioned that helicopter services have almost significant and a multifaceted economic impact, further ranging from boosting tourism and trade and also providing a great support to necessary services.

The other themes have mentioned that the aviation sector of India has been experiencing a rise that has been fueled by constant demand. At the same time, it has recognized that the number of many operational airports in India in the year 2014 were approximately 74 (Pib.gov.in, 2024). This number has been increased as by September 2024, it became around 157. It has also identified that UDAN 4.0 has given a specific focus on the multiple Northeast, different hilly states, and several islands and also include several helicopter services. A number of airports mainly including Pasighat, Ziro, Hollongi, and also Tezu have directly boosted Northeast tourism and it is mainly by improving accessibility.

The helicopter services remarkably offer different socio-economic benefits through the enhancement of connectivity, particularly in challenging terrain regions and areas with limited road infrastructure. It further helps boost tourism, trade and the entire regional integration. Hence, the limitation of the helicopter services consists of the potential of having discomfort, high fares and resistance towards landings and over flights. Additionally, the high cost associated with building and maintaining helicopter infrastructure and heliports for substantial. However, the socioeconomic impact process is associated with the development of connectivity, economic growth, and emergency services. Improving connectivity helps the country to generate or improve its economic diversification across different places by supplying products and goods with a minimum duration of time.

Conclusion

The above research article has investigated the impact of multiple helicopter services on the economic development of the Northeast Indian region. From the above article, it has been concluded that the number of operational civil helicopters within India are approximately 244 and the state that is mainly with almost the several leading number of helipads is Himachal Pradesh. From the above thematic analysis of the study, it has been recognized that Civil Helicopter Market Size has been valued at around USD 12.51 Billion by the end of the year 2022. Also, the article has mentioned that India has been expected to directly become the largest domestic civil aviation market throughout the world in the upcoming 10 to nearly 15 years. Apart from that, the issues and challenges exist in helicopter operations that are about air pollution and it almost has a direct negative impact on humans as well.

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