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REVIEWING AIRPORT PRIVATIZATION: AN EXPERIENCE OF INDIA

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ABSTRACT: This study has reviewed the airport privatization scenario in the Indian context. It has examined the circumstances of airport infrastructure under the Public-Private Partnerships (PPPs) model. The Government of India (GoI) is justifying the development of airports through PPP mode due to their necessity to provide standard services and efficiency of the projects. However, the deficiency in investments and viability gap are being levy in the form of development. It has synthesized several works of literature. It looks at the historical changes and the ways that evidenced the changes. It has reviewed the developing scenario of airport PPP in India. During the 1990s economic liberation, the activities of PPPs emerged in the airport and aviation of India. India has 24 years history of airport PPPs. This study aims to provide a review of airport PPP experience in India. PPPs in the Indian airport industry are examined in sound regulation. The Government of India has adopted PPP schemes instead of going into full privatization of airports. Since the 2000s, PPP models have been adopted in the development of new airports and the reformation of operational and nonoperational airports. In the year 2006, Indira Gandhi International Airport, (IGIA) in Delhi, and Chhatrapati Shivaji International Airport (CSIA) in Mumbai were partially privatized. After the successful implication of PPPs, in the airport infrastructure the numbers are growing. In the year 2020, six airports were privatized through the PPP model by Adani Enterprises. To date, there are 21 airports in the pipeline of privatization. However, there remain several challenges and constraints for development and commercialization with private enterprises.

Keywords: Airport Privatization, Public-Private Partnerships, Concession

INTRODUCTION

The airport sector is an essential transport sector for every country's economic development. Airports are the backbone infrastructure of the tourism industry. Airports support the movement of people and the transport of goods from one place to another. The airport functions the business on two sides: a) aeronautical (runway and terminal) and b) non-aeronautical (business areas, hotels, parking, etc.). The aeronautical and non-aeronautical components decide the economic growth of the airport (Ricover & Delmon, 2020). The economic growth of airports and the airline industry supports the socio-economic development of a country.

India has a long history of airport development. It started airport and aviation-related activities under British Colonization. On February 18, 1911, it launched an airmail service. In 1912 the first international flight was commenced from London to Karachi. In 1924 it constructed of first airport at Gilbert Hill in Bombay, Dum Dum in Calcutta, and Bamrauli in Allahabad. The development, operation, and management were conducted by the British regime (History of Aviation in India, 2022). After 1947 the authority of Indian airports was back to the Ministry of Civil Aviation of India (MoCA) (Wang, Zhang, & Zhang, 2018).

To date, India has above 486 airports, and airstrips, with related flying schools, and military-owned air bases (Chakraborty, Ghosh, Sarker, & Chakraborty, 2020). According to the AAI website, there are 153 airports in operation, and only 123 airports have scheduled commercial flights also there are several unused airports and airstrips. On the base of the growing number of air passengers, the Indian government has forecasted to build 250 or more airports by 2030 (Latiff & IMM, 2015).

It has estimated the investment of Indian Rupees of 420-450 billion (US $ 5.99-6.41 billion) in the fiscal year FY 18-23 (IBEF, 2022).

Similarly, in the year 2018 ACI forecasted air passengers of above 22 billion passengers by 2040 (Airports Council International, 2018). The COVID-19, pandemic has also impacted the Indian airports vigorously (Agrawal, 2021). Airlines were forced to suspend and close their operation. Despite the COVID-19, the aviation has achieved 20% growth (Thummala & Hiremath, 2022). Similarly, there is a demand for 2,500 aircraft by 2038. However, there are issues like investment problems, contract cancellation, and concession problems that are rising and creating problems in the mechanism of airport privatization.

This research tries to investigate Indian airport development, its regulations, and characteristics the path of privatization, and the issues involved.

Literature on Airport Privatization

The study of airport privatization is important and controversial too. Since the 1980s BAA airport privatization developed and developing countries have changed the policies in airport governance and ownership models (Chen, Lai, & Piboonrungroj, 2017). The operation mechanism of airports is in an increasingly competitive market with private sectors and the processes are commercially

oriented. The private sector participation in the airport sector is a multifunctional marketing enterprise (Freestone, Baker, & Stevens, 2011).

(Lehmann, Characteristics of airports, 2019) Has discussed the characterized airport infrastructure and concluded that airport infrastructures are structurally diverse and do not conform to a general layout. His research focused on air and land relationships, basic aspects of airport design, and the services. The airport demonstrates its capability through the generation of non-aeronautical and aeronautical revenue (Brito, Oliveira, & Dresner, 2021b). Due to the nature and characteristics of airports sectors appeal to more investment with adequate private sector participation in operation and management (Engel, Fischer, & Galetovic, 2018a; Graham, 2020b).

According to Roth, (1987), the mechanisms of the airport are distinguished by airside (aeronautical) and landside (non-aeronautical) capacities. The Airport Authority of India AAI, airport planners distinguish between "landside" capacity (the capacity to handle passengers in terminals, and automobiles in car parks), and "airside" capacity (the capacity to accommodate aircraft landings and departures) and mix-up to make airport mechanism.

Private involvement in Business shops, automobile parking, non-aeronautical services and runways, apron areas, aircraft taxiways, aircraft stands, etc. as non-aeronautical services, are privately owned.

The importance of airport privatization researchers, (Graham, 2011) has identified the importance of airport privatization in the following issues (1) the improvement of efficiency and performance (2) no loss of taxpayer money (3) providing new technology, (4) competition and regulation (Domney, Wilson, & Chen, 2005), (5) the increment of finance and (6) lessening the government involvement, (7) Upgrading investments in infrastructure sectors. Augustyniak, (2009), has claimed that privatized airports are a better incentive in tackling risks. Respectively, (Oum, Yan, & Yu, 2008; Advani, 1999) have studied the efficiency of airports in services and found that privately owned and operated airports are more inefficient than publicly owned airports.

The importance of socioeconomic norms and values (Czerny, 2013) compared private and public airports in his research and found that private airports maximize profit more than public airports. Public airports are mostly oriented towards social welfare.

There are very few cases in a comparative study of privatized airports, (Abdullahu, 2018) has studied the three international privatized airports Prishtina in Kosovo, Skopje at Petrovec, and Tirana in Albania.

While emerging markets are in the premature stage (Deloitte, 2006a). The premature markets could uplift if there are changes in policies. Sugimura & Kato, 2021 emphasize the Initial Public Offerings (IPO) and trade sales in airport development. According to the market maturity curve by Deloitte, 2006b research, India itself possesses a low and sophisticated area. Das, Bardhan, & Fageda, (2022a) Studied the growing demand for internal and international air travel. International air

travel was demanding Indian airports to enhance their capacity. India's decision to invite private capital to participate in the modernization of its metro airports could deliver significant benefits for passengers, airlines, and the government (CAPA, 2014). Additionally, a study by Wang & Song (2020) focused on low and sophisticated countries' airport management in the research from 12 Asian airports concluded that the performance and evaluation have been widely studied.

RESEARCH METHOD

It is desk research. A doctrinal method is applied. It has synthesized literatures and secondary data. Similarly, it has analyzed the Ministry of Civil Aviation of India, the AAI dataset, and the electronic database from the World Bank.

RESULTS AND DISCUSSION

The following sections have discussed the development of airport regulations, infrastructure their characteristics.

Airport Regulation in India and its Characteristics

MoCA is responsible for formulating airport and airline-related policies and programs (Krishnan, 2021). Before the establishment of AAI airports were operated and managed under the MoCA.

At that time the mega cities like Calcutta, Madras, Bombay, New Delhi, and Trivandrum were operating International airports through IAAI (Indian Numbered Acts, 2022), and the rest of the domestic airports were operated through (AAI, 1985). The operation criteria of NAAs were limited to domestic service (Hooper P. G., 2002). The investments in runways, terminals, and other buildings were made from a capital fund provided by the MoCA. Revenues were raised through airside and landside fees. Airports were under government intervention. Airport capacity and services decisions were made at the national level. Airports had a very small role in decision-making. Due to these reasons, there was a necessity to merge the International and National airport operating organizations under one Authority. Based on the AAI Act 1994, the IAAI and NAA merged on April 1st, 1995, forming AAI. AAI is a 100% GOI-owned organization. AAI serves and monitors for development, management, and operation of civil aviation (Paulose, 2013). It has the right to decide whether to lead the private sector to participate in airport development or not. Apart from managing airports, AAI controls air traffic management and it provides communication navigation and surveillance services (Francina, Selvavinayagam, & Elavarasan, 2020). In the year 1977 MoCA released comprehensive policies indicating preparedness for airport privatization (Hooper P. , 2002). PPP has emerged as a preferred mode of airport development, modernization, and extension. The first private sector participation was started at Cochin International Airport in 1994 at Kochi (Kashiramka, Banerjee, Kumar, & Jain, 2016b). Subsequently, two major airports at Delhi and Mumbai Cochin, with Dr. Babasaheb Ambedkar International Airport at Nagpur airports were also privatized through the PPP model, Joint-Venture (JV) under and adopted several models (Singh, Dalei, & Raju, 2015c).

As the beginning deregulation of airline services and pursuit of airport

expansion policies resulted in the construction and redevelopment of new terminals.

Table 1: The development of several acts and the establishment of the Regulatory Authority

Sector	Relevant Act	Establishment of Regulatory Authority
Airports	Aircraft Act, 1934 Aircraft Rules Act, 1937 Air Corporation Act, of 1953 (Nationalized airlines) Air Carriage, 1972 Anti-Hijacking Act, 1982 AAI Establishment Act, 1994 AERA Act 2008 Rules on Carrying of Dangerous Goods Act, 2003	Establishment of Civil Aviation 1911 AERA acts as the Sectorial Regulator and determines the aeronautical tariff for Major Airports Establishment of MoCA Establishment of the AERA, 2008 Establishment of DGCA Establishment of AAI Establishment of BCAS

Source: (Vattipalli, 2020) partially added by the author

The Indian air transport back, to December 1912 after commencing the first international flight London -Karachi- Delhi route (Singh, Sharma, & Srivastava, 2019).

Civil air transport in India started in 1932. The first private company Tata Sons started air service. Indian National Airways began operations with light single-engine aircraft for the carriage of mail (Prasada, 1956). Air services were nationalized as early as 1953 (Saraf, 1989). Similarly, the Aircraft Act, of 1934, the Aircraft Rules Act, of 1937, the Air Corporation Act, of 1953, the Carriage by Air Act, of 1972, and the Anti-Hijacking Act, of 1982 were enacted and are the backbone of Indian airport, and aviation development policies.

The development of several policies in commercialization and privatization policies and processes started in the 1970s, 1980s, and 1990s. Since, the 1990s economic liberalization has contributed to the emergence of a more competitive and market-oriented Indian airport industry (Castro & Lohmann, 2014).

Airports Authority of India and Characteristics

Organized airport authority in India was established in 1995. The main obligation of AAI is to accelerate the expansion, modernization, and development of the Indian airport and aviation industry (Rajani & Reddy, 2022). AAI came into operation by merging the National Airport Authority (NAA) in 1986 and the International Airport Authority (IAAI) in 1972. Since its establishment, AAI has focused on the expansion of airport airline-related infrastructure, passenger terminals, air traffic services, and cargo operations. To date, there are not any fully privatized airports in India. AAI has completed and more percent of control over runways, taxiways, aprons, ground handling services, commercial terminals, communication, and IT inside the airports, and international and domestic operations.

Table 2: Categorization of Indian Airports

	International Airports			Domestic Airports	
1.	AAI (Including Delhi, Mumbai,	21	1.	AAI Operational	55

	and Nagpur)				
2.	AAI Civil Enclaves	3	2.	AAI Civil Enclaves Operational	20
3.	JV/State	5	3.	AAI Non-Operational	25
Total International Airports		29	4.	AAI Civil Enclaves Non-operational	3
	Custom Airports		5.	JV/State/ Private Operational	11
1.	AAI	6		Total Domestic Airports	114
2.	AAI Civil Enclaves (Defense Airports)	4			
	Total Customs Airports	10		Total Airports (AAI& JV/State/Pvt) Intl+Dom	153

Source: (AAI, 2020)

Table 2 summarizes the number of operational airports in India. Based on AAI data Until 2020 there are a total of 153 airports, 29 are International, 114 are domestic, and 10 are for customs.

Besides this India is also having hundreds of unused airports, also called 'ghost airports' (Bhattacharya, 2018).

To date, India does not have any fully privatized airports. The privatization law in airport privatization is the sanction of the parliament. Except for the stated number of airports, the GoI has planned to establish more than 250 airports to be built under the PPP policy. As a first step, of privatization, Delhi, Mumbai, Bengaluru, and Hyderabad had entered into a PPP agreement (In, Casemiro, & Kim, 2017). Air freight transportation is also paramount for the expansion of trade in India (Veerappan, Sahu, Pani, Patil, & Sarkar, 2019). To date, there is a total of 10 custom airports under the AAI. Custom airports are notified by the customs authority of imported and exported goods. Domestic airports are only available for handling domestic flights. Civil enclave's defense airport: there are 26 civil enclaves in Defense airfields.

Directorate General of Civil Aviation

The DGCA is a regulatory body for Indian aviation (Rathore, Nandi, & Jakhar, 2020). DGCA was an organization of many working groups created for the implementation and adoption of advancements in the airport sector (Saraswati, 2001). The DGCA was established in 1971 under the Ministry of Civil Aviation. as a regulatory autonomous body for looking after safety issues. It regulates the air transport services enacts and helps to enact air safety, and airworthiness standards. DGCA operates under the DGCA guidelines. Under the guidelines of DGCA private sectors are allowed to invest via FDI up to 100% through automatic routes (Singh, Dalei, & Raju, 2016, Sankaran, 2017). For Brownfield airports, FDI up to 74% is allowed through automatic routes and beyond that and up to 100%, investment with Government approval.

Airports Economic Regulatory Authority

In the year 2008, India established an economic regulatory authority (Singh, Dalei, & Raju, 2015). The AERA Act 2008 was enacted on 5 December 2008. AERA determines the tariffs for aeronautical

services, user charges, and monitoring rights of the performance standards of major airports (AERA, 2008). The main function of the AERA is to regulate airport handling. Currently, AERA monitors airports that have 1.5 and more million passengers yearly e.g., Bengaluru, Chennai, Delhi, Goa, Mumbai, Kolkata, Hyderabad, Thiruvananthapuram, Calicut, and Pune, and monitors their performance standards (ICAO, 2022).

In the year 2009 Airports Economic Regulator Authority (AERA) an independent authority was established, to monitor regulation and tariffs and aeronautical services and monitor airports' performance standards (Krishhnan, 2021).

Aviation Industry and the performance

The development of the Indian aviation industry has been a remarkable journey marked by significant growth and transformation. It has a long history of establishment and currently, the Indian civil aviation market lies in the 3rd position. Since the liberalization of the airline sector in 2004 the civil aviation industry has been growing steadily (Mahtani & Garg, 2018). The aviation sector contributed USD 30 billion to India's GDP in 2021 and is expected to be the largest civil aviation market by 2030 (IBEF, 2017a). Every year the Indian Aviation Sector witnessed significant improvements in the movement of traffic in both the passenger and cargo segments (Satpathy, Patnaik, & Kumar, 2017).

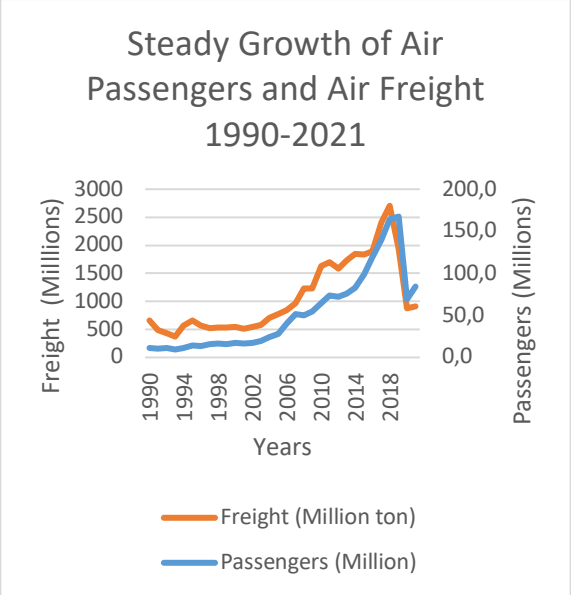

Figure 1: Growth of Air Passengers and Customs

Source: (World Bank, 2021; World Bank, 2021)

After the implementation of economic liberalization, there has been a rise in middle-income households in India. Similarly, private-sector airlines increased in numbers. GoI has implemented the Low-Cost Carriers (LCC), in Indian aviation. Respectively, the modernization and reformation of leading airports, and a supportive policy framework have given a positive push to the aviation sector.

Airport Privatization

The Public-Private Partnerships (PPP) model has been the cornerstone of airport privatization policies in India. Under this model, private companies or consortiums are granted long-term leases to operate, maintain, and upgrade airports. The objective of privatization is to enhance the efficiency of government-owned enterprises (Brito, Oliveira, & Dresner, 2021). The policies of privatization are defined as the most consequential economic development of modern times (Havrylyshyn & McGettigan, 1999). Airport

privatization is all about the growth of passengers and the economy (Dörnberg, 2008). Governments have sought private funding for airport development to support infrastructure development to build efficiency in operations.

Additionally, financial self-sufficiency arouses, and the airports do not rely on government support (Tsunoda, 2023). Currently, 60% of airport traffic is under PPP airports, and the remaining 40% is managed by AAI (IBEF, 2023). Forecasting the Indian economy in the future and increasing air passengers, India has benchmarked private sector involvement in airport development and modernization (Phuyal, 2023).

Table 3: Private Sector Participated Airports

Greenfield Airports	Brownfield Airports
Sindhudurg Airport	Chaudhary Charan Singh International Airport Lucknow
Noida International Airport	Mangaluru International Airport
Navi Mumbai International Airport	Thiruvananthapuram International Airport
Manohar International Airport, Mopa, Goa	Sardar Vallabhbhai Patel International Airport, Ahmedabad
Bhogapurm Airport	Lokpriya Gopinath Bordoloi International Airport Guwahati
Kempegowda International Airport	Jaipur International Airport
Rajiv Gandhi International Airport	Indira Gandhi International Airport, Delhi
	Chhatrapati Shivaji Maharaj International Airport, Mumbai

Source: (MoCA, 2023)

Besides the Greenfield and Brownfield airports, 21 and more airports are in the pipeline of airport privatization.

Airport concessions

The concession approach is an agreement of charges or payments made by the airport authority to the business owner to conduct commercial activities (Kim & Shin, 2001). The motto of concession is to develop, modernize, operate, and manage the airport infrastructure (Sambrani, 2014). According to the (World Bank, 2022), the obligation of airport concession includes 30 years of government-defined investments, payment of fixed annual royalty, design-build specifications and deadline of completion, operating standards, protection of the environment and local communities, guaranteeing equal, fair access to airport facilities and services.

Currently, six major airports, Ahmedabad, Jaipur, Mangalore, Lucknow, Guwahati, and Thiruvananthapuram airports has shifted the authority of are being developed and modernized under, PPP with other several airports in Greenfield and Brownfield developments (Vandana, et al., 2020).

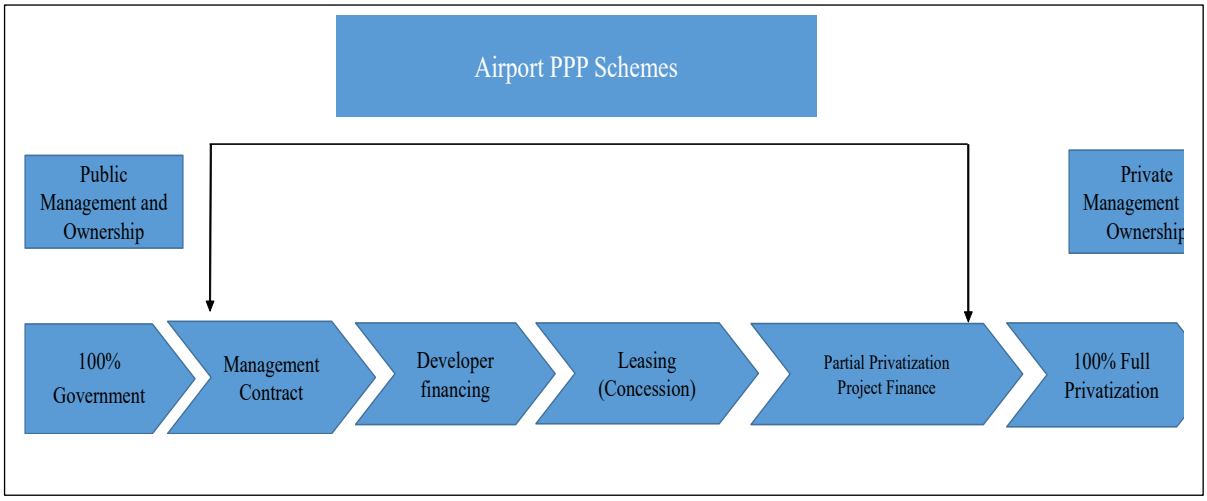

Figure 2: PPP schemes in Indian Airports

As shown in Figure 2 airport management and ownership lie in between the full government ownership and full private management and ownership. Governance models between full government management and ownership to full private management and ownership are obtained through PPPs in airports. The well-known PPP models, are practiced in Indian airports industry, for example, Build-Operate and Transfer (BOT), Operation-Management and Development Agreement (OMDA), Concession agreement, Lease-Develop and Operate (LDO), etc. Through these models, the economic risks of the government could be mitigated. It is sure that the private sector participation through these models brings in easier financing and investment. Except for these models, there are Design-Build-Finance and Operate (DBFO), Build-Own-Operate (BOO), and Buy-Build-Operate (BBO) models that help the private sector to build and operate at certain times. Apart from this model economic regulation is also applied, in airport privatization, for example, Price Cap Regulation, Rate of Return (ROR), and the light-handed regulations, etc. Different Countries are practicing different methods of PPP regulation in the airport industry.

Challenges of airport privatization in India

The following sections discuss the challenges and the issues of airport privatization in India.

Regulatory Framework

To the date India doesnot have a PPP Law in airport privatization. The regulatory framework is still under the consideration of GoI. There is not a similarity in each states of in involving private sectors in the aviation sector.

Land Acquisition

The reluctance to fast-track land acquisition has caused lengthy project delays and cost overruns in India. While snatching land from local communities, the communities feel cheated out from the path of development, which leads to distrust and disputes that may hamper in

new airport related projects.

Time and Cost Overruns

Time and cost overruns are major problems associated both in traditional and PPP airports in India. There are massive reasons in India for which delay the project. Political economy is a major reason for starting many projects, which get allocated a limited amount of funds in the annual budget cycle leading to massive time cost overruns. Gondia, nagpur, Srinagar and Silchar airports have experienced cost overruns in 2008 (PTI, 2008).

CONCLUSION

Well-developed airport infrastructure is a prerequisite for the aviation industry to grow and add to the economic development in India. The implementation of PPP in Indian airports ae increasing in numbers. The rehabilitation packages are not planned meticulously, and execution is inefficient that may hamper the airport related projects in further.

This study is limited. It does not discuss the revenues of particular PPP airports. While conducting this research it was very difficult to acquire PPP airport data. Very few quantitively organized research was available. There are gaps in acquired information. In further studies, the combination of qualitative and quantitative analysis could be conceivable. Additionally, the risks and guarantees, of efficiency are also worth searching in the Indian PPP airports. Besides the limitations, this study provides a comprehensive information review of the history and the current situation of airport PPP in India. The findings of this study help other researchers to understand the literature on Indian PPP and give insights for future policy and practicing environment in India.

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