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# **ANALYSIS REPORT ON TRANSPORTATION IN INDIA**

(JUNE 2021 EDITION)

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# 1. Introduction



Transportation is the lifeline of an economic state. This includes the movement of both living and non living things means people or goods from one place to another. This also helps in the speedy growth of industrialization which in turn creates employment opportunities to fulfill the livelihood needs of people. India has a vast and diverse transportation sector, which caters to the multiple needs of crores of Indian people every day.

A reliable and well-structured physical connectivity in urban as well as rural areas is important for the overall economic growth of the country. Since independence, India has witnessed a major revamp in the transportation sector. After the Economic reform of 1991, a major push for infrastructure projects was evident and a significant public sector investment was roped in. The role of FDI was also crucial at the industrial and infrastructure level. This paves the way for private players to participate in the economic development of the country. After the reform, the infrastructure development through Public-Private Partnership (PPP) model was encouraged where the innovation and technology of private sector entities were used and the quality of projects was assessed by the government authorities.

Due to this infrastructure push in the last few decades, a new trend is visible where the rail dominant transportation shifted to the road transportation for movement of people specifically. But this trend is contributing to the high level of pollution and carbon-dioxide emission. To address the issue it is important to make public transportation through roads and railways more people-friendly as this has a lower average rate of energy consumption and pollution emission.

The 21<sup>st</sup> century India is all ready to witness a major shift in means of transportation whether in Road, Rail, Waterways or Airways. The government is taking steps to adapt to constantly changing requirements and realign the infrastructural needs of the evolving transportation sector. India is growing at a fast pace both in terms of GDP and population. Thus the mobility of people and goods will be the main concern. The smart city project of the Government of India is rightly addressing the issue. Around 30% of the Indian population is residing in cities and projections show that the urban population in India will be around 600 million in the next decade. This will generate many new metro cities during this period. Increased investment in the urban public infrastructure is the need of the hour. This in turn will increase the live ability in these urban areas. The use of the motorised car and two-wheelers are on the rise in these urban cities which are causing more accidents, disabilities, and premature deaths due to high population emission. Thus a cleaner and safer mode of transportation is required which can also address the issues of congestion on infrastructure and timely movement of people and goods.

## 2. Evolution of Transport System in India



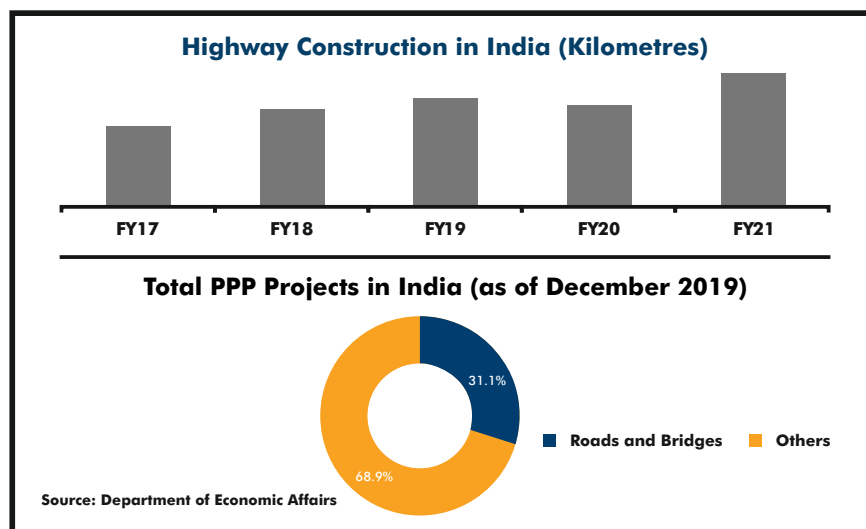
From the Bullock Cart, hand-pulled Rickshaws, and Tuktuk to Bus transits, Metros, monorails, airways, Ferry to Ropeways India has witnessed a large landscape in the transportation sector. This evolution was based on industrial development, the need for transit, and the rate of urbanisation. Urbanisation and industrial development play an important role in poverty reduction by increasing the incomes of the poor section of society. But for this the migration of people from rural areas to

urban areas takes place. Thus urban transport systems and last-mile connectivity play an important role in this development. This will help people to move freely and connect the industries to the logistic supply chains.

The role of different means of transportation in the economic development of India is as follows:

### 1. Land Transport:

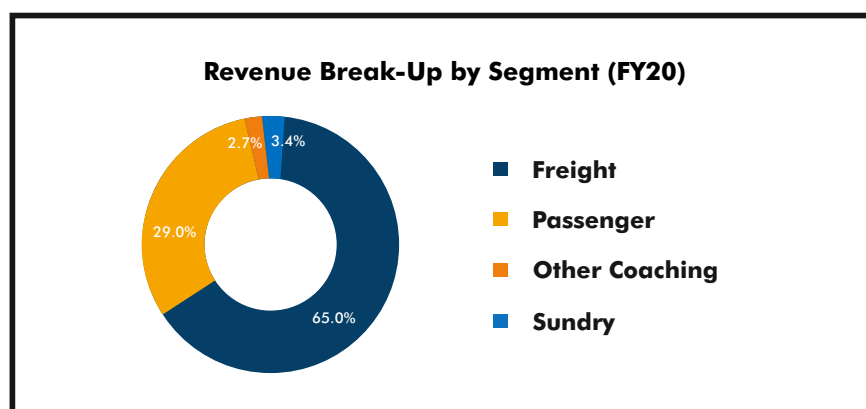
A transport system which works on the earth's surface for the movement of people and goods comes under this category. In India it is subdivided into two heads:



### I. Roadways

In a large developing country like India, road transportation plays an important role as the means of commutation. Based on the present road network, India ranks 2nd in the world. As per Ministry of Road Transport and Highways data till March 2021 India has a total of **151,019 km** of National Highways. The road traffic in India is increasing many folds and thus the continuous expansion of road network is needed to cater to the high volume of traffic and their

inter connectivity with off roads. The road network is developing on the PPP model in India. In this mode of transportation, 90% of India's passenger traffic and around 65% of freight traffic commutes.



### II. Railways:

Indian rail network ranks 4<sup>th</sup> largest rail network in the world by size after the United States, China, and Russia. The Government of India is religiously working on the electrification of the rail network by targeting the “net-zero carbon emission” railway by 2030. Indian Railway's major revenue of

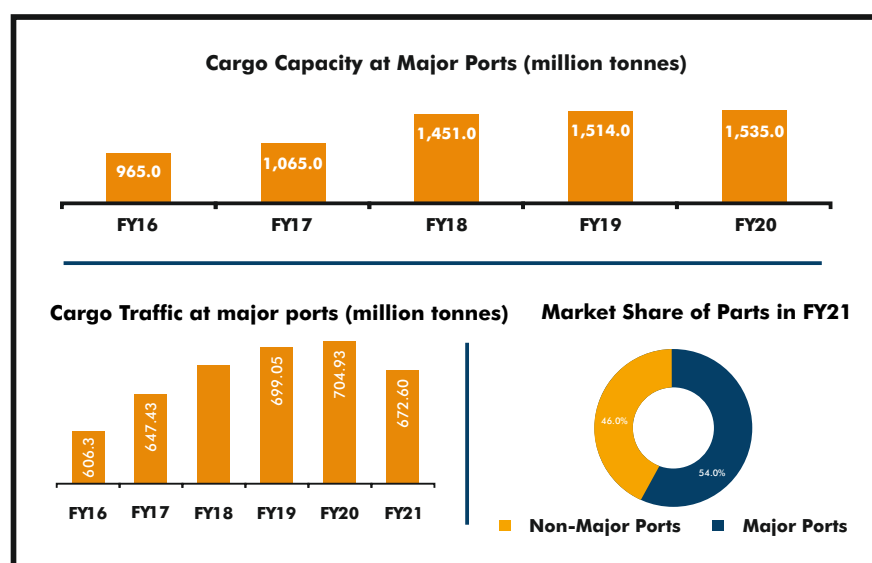
around 65% comes from freight traffic. Since 2020, the government has started “Kisan Rail services” through which agricultural produce and perishable products are transported all over the country. During the COVID19 pandemic, Indian railways played an unexceptional role in the timely delivery of Oxygen through “Oxygen Express” at different locations as this transport medium takes less time to commute over road transport.

## 2. Water Transport

A transport medium that facilitates the movement of goods and people on the surface of the water comes under this category. This is an energy-efficient & inexpensive mode of transportation to carry heavy goods over long distances. we can categorise it into two parts:

### I. Inland Water Transport:

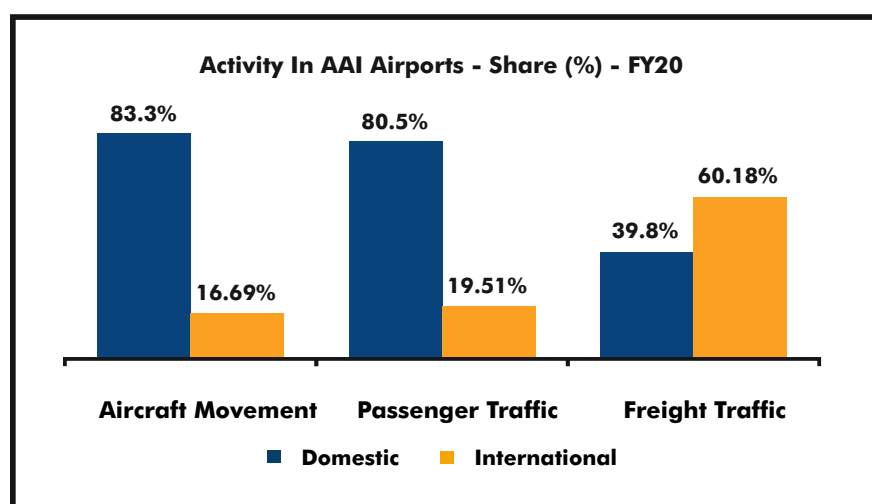
India has an ample network of inland waterways which include rivers, canals, backwaters, etc. Under the National Waterways Act, 2016 India has a total of 111 inland National Waterway that accounts for a total of 20,275 km and span across 24 Indian states. But the freight transportation through this medium of transportation is not used effectively.



### II. Coastal & Overseas Shipping:

India has a vast coastline of more than 7517kms with more than 200 ports. Traffic in the 12 major ports of India accounts for 704.82 million tonnes in the financial year 2020. Under the “Sagarmala project”, the government is planning to develop six more mega ports in the country to boost external trade. The major ports account for 54% of total market shares in cargo traffic in 2020-21.

The target to achieve 1,695 million metric tons of freight traffic by 2021-22 is expected.



### 3. Air Transport

Air transport is a relatively modern and fastest mode of transportation. This uses air as a medium to move goods and people from one place to another. In India, airways transport started in 1911. After 1991 economic reform the aviation sector has welcome private players and now plays an important role in the time-efficient commutation of people and delivery of goods in difficult

terrains. The Indian aviation industry is expected to be the third-largest in the world by 2024. After the launch of the “UDAN” scheme by the Government of India, the Indian aviation industry became the fastest growing industry in the last three years and became the third-largest domestic aviation market in the world. It made air travel affordable for the mass Indian population.



### 3. Drivers of Growth in Indian Transport Sector



Despite continuous infrastructural development and access to places, mobility in Indian urban cities is becoming difficult day by day. The increased commutation activities create a struggle in terms of cost and time. At present, the traffic and congestion problems in Indian cities are putting a big toll on the environment and physical health of people living in these cities. Yet

the problem of congestion, fatalities, and inconvenience are on the rise. The scenario leads to an accessibility crisis in the sector and thus opens up new avenues of growth in addressing the issue. The main reasons that drive the growth of this sector are as follows:

#### 1. Large Population and Rising Demand:

As per the census 2011, the total urban population in India is more than 377 million, which is 31.16% of the total Indian population. This number is considerably large in comparison to the data of census 2001. More the number of people, more the number of commuters in these cities. This will increase the number of vehicles on the roads and make the traffic congestion and pollution problems more serious. Due to new reasons influencing the transportation demand, the department of statistics has already forecasted that in India the road travel will increase by around 30% by 2035. It will eventually drive the way for a smarter and efficient transportation system in near future for their daily commutation needs.

#### 2. Income Inequality and Cost of Travel:

1/4<sup>th</sup> urban population in India lives below the poverty line and thus transportation is a big problem for that poor section of society. The poor availability of public transport system and unaffordability of private transport makes their access to livelihood means a real struggle. This will force them to walk or cycle for long distances and face road fatalities, pollution, and other health conditions in long run. Hence, they are cut off from the opportunities and necessities like employment, education, and medical. These inequalities can be seen in urban and rural areas too. The urgent need to promote infrastructural upgrades for cycling, and walking to address these concerns is important. Non-motorized transportation creates an active, reliable, affordable, safe, and convenient commutation option for all and can address the issue efficiently in the near time.

#### 3. Cost of Energy and Congestion on the Road:

The energy consumption in the transport sector is very high. The major part of imported petroleum in India (nearly around 98%) is used in the transportation sector. The increasing number of vehicles on road and far distances has increased the average travel distance to around 10km. The congestion on roads also increases the use of energy. This, on one hand, raises the import bill of the country and on other hand creates an environmental and health concern. Thus a cleaner or safer transport medium is always welcome on the busy Indian roads.

#### 4. Infrastructure Upgrade:

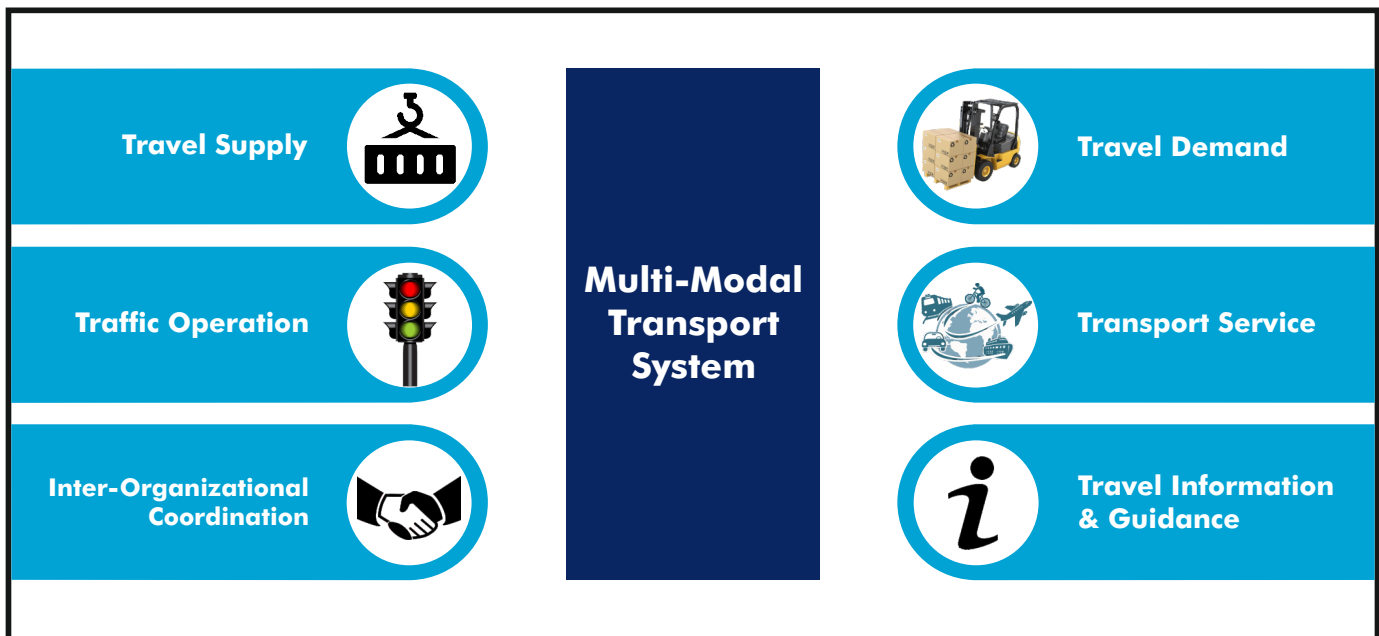
India needs a technological revamping of the transportation sector in terms of connectivity, safety, and speed of travel. The government under its vision 2035 of transportation acknowledged the need for technology-enabled access to public transports for last-mile connectivity, all-weather road connectivity of every village, and minimization of pedestrian fatalities to zero due to traffic accidents. To survive such a large and growing population in a limited geographical area is a challenge yet important, and here mobility is the key. Thus technology-enabled infrastructural development will drive the way forward.

## 4. Future Projections & External Factors Affecting Transportation Industry

The transport sector not only helps in commutation of people or goods but also help to economically grow and progress. India is the fastest developing country of the 21<sup>st</sup> century. It also plays an important role in the geopolitical and economical outlook as this is one of the biggest markets in Asia and the world. India is facing lots of challenges in the transportation sector due to the vast road network, increased economic activities, and limited technology and resources. In this way, the transport and logistics sector in India shows immense growth prospects for foreign players. The concerns related to climate and unforeseen problems like COVID 19 pandemic may affect this potential up to some extent. Still, the future projections show a high return on investment in this sector for domestic and foreign players.

### 1. Multimodal Transport System (MMTS):

This system combined the benefits of different modes of transportation to provide efficient, comfortable, and safe movement of people and goods. This will help in the economical and easy movement of goods in the supply chain. Efficiency is the prime concern in this model. The interconnectivity of two or multiple modes of transportation addresses the issues of reliability and the transit time in delivery. The efficiency of this system lies in the coordinated and effective use of different modes of transportation. The system has lots of potential and large applications in urban mobility where congestion on the road, slower traffic movement, and delivery delays are concerns of every day. The main components included in the MMTS are as follows:



### 2. Intelligent Transport System (ITS):

These technology-enabled modern transport systems offer answers to many concerns of the present transportation sector. They use computers, modern ways of communications, and internet control technologies to increase the efficiency of people and goods movement. It helps in improving the productivity of transport mediums and enhances safety by utilizing maximum efficiency. It's saves energy and thus protects the environment and climate as well.

The intelligent transport system improves the benefit-cost ratio to 9:1 which is 2.7: 1 in the case of highway capacity investment. Thus the benefits reaped from this technological advancement are much higher than its investment cost. This can help equally in all the modes of transportation whether road, rail, air or water. These systems are

capable of solving the traffic management problems on Indian roads by improving vehicle safety. But in this case, legislation will also play a major role in the technology adaptation in this sector and encouragement to use of these intelligent machines on Indian roads.

### **3. Ropeways :**

At present, the ropeways are seen on the slopes and valleys of steep mountains and difficult terrains. This can be helpful to adapt this modern transport facility into urban public transport system in coming future. This will help to overcome the challenges of the traffic, land uses, city design issues, and population density of urban areas. These factors are largely restricting the spread of urban mobility. It will be a proven solution to such infrastructural constraint issues in the coming years.

### **4. AIRPod:**

The environmental concerns related to petroleum use and an increasing number of vehicles in urban areas need to be addressed well within time. The solution to this will be a car which runs on air power. These vehicles will be environment-friendly and cost-effective as well because the air is available in abundant in the atmosphere. Tata Motors is planning to launch the compressed air-powered car in the coming years and will open up new avenues in the urban transportation sector in India. These vehicles will be lighter in weight and so cause less damage to Indian roads. These are easily recyclable with less pollutant discharge. But the cost of compressed air is a major concern in the commercialization of this new urban transport system.

### **5. Personal Rapid Transit(PRT):**

These are the relatively new and innovative transport systems for the urban transportation environment. These are available on-demand and will be an environmentally safe and efficient transport medium in the future. The PRT systems are small driver less electric vehicles that can be suited in different urban environments as per convenience and requirement. The Ultra PRTs are the solution for those who want to use nonstop public transport on their personal choice regarding destination and time. There are already many projects in the pipeline in Asia and other global cities. They will provide an integrated technology-enabled infrastructure solution for the movement of people, goods, and services in near future.





## 5. Government Initiatives to Boost Transportation System in India



The Government of India is taking several initiatives and implementing many policy reforms to boost the transportation sector in India. The efforts are also made to promote clean, safe, and affordable transport medium for mass population and domestic and international trade as well.

### 1. Bharatmala Pariyojana

The initiative is an umbrella program for the development of National Highways in India. In this, the target of constructing or upgrading National Highways of 34,800 km length till 2021-22 is made with an estimated cost of Rs 5,35,000 Crore. This will help in improving the efficiency of people and goods movement across the Indian states through developing economic corridors, feeder routes, border, and international connectivity roads, coastal and port connectivity roads, and greenfield expressways. The focus will be on the connectivity of backward and tribal areas, economic activity areas, religious and tourist places, border, and coastal areas, and trade routes with India's neighbouring country.

### 2. Setu Bharatam

The Ministry of Road Transport & Highway has formulated a plan of replacing all level crossings on National highways under this scheme. This will facilitate the safe and smooth flow of traffic on National Highways in India.

### 3. Accessible India Campaign (Sugamya Bharat Abhiyan)

The campaign was launched by the Government of India in 2015 to achieve 100% accessibility for persons with disabilities by 2022 in all modes of transportation. Through this nationwide campaign, it was admitted that transportation is an important means for people to live an independent life.

### 4. Regional Connectivity Scheme- UDAAN

The Airport Authority of India is the concerned department to implement this regional connectivity scheme with the objective of “Ude Desh Ka Aam Nagrik”. Under this scheme, an investment of around Rs 17,500 crore will be made for the up-gradation of underserved airports and make flying affordable for all.

### 5. Sagarmala Project:

Under this project Government of India is planning to undertake more than 400 projects related to the modernisation of ports, development of new ports, port connectivity, port-led industrial development, and community development on coastal areas. This will help in reducing the cost of logistics involved in export, import, and domestic trade. This project will completely develop the Indian coastline and maritime sector soon.



## 6. Conclusion



Transportation will be always at the center of economic and social development. Thus it will play an unprecedented role in the future as well to place India in the fast-growing economies of the 21<sup>st</sup> century. Mobility helps in improving the quality of life of individuals. But only an efficient public transport system can scale up mobility to reap social, economical, and environmental benefits in the future. The urban public transport system currently operating in developed countries like United States, China, Spain, etc will pave the way for India in the future.

The requirements of different modes of rapid mass transportation such as Bus rapid transit, Monorails, Light rail transit, Ropeways, AIRpod, etc will draw the canvas of the transport sector in India. But a strong legislation and policy framework for the planning and implementation of these modes of transit will be required. This will help in the smooth transition and adaptation of these future technologies by the Indian masses. India needs to work on the concept of a sustainable, faster, safer, and energy-efficient transportation medium to reap the benefits of technological advancements happening in this sector at the global level.

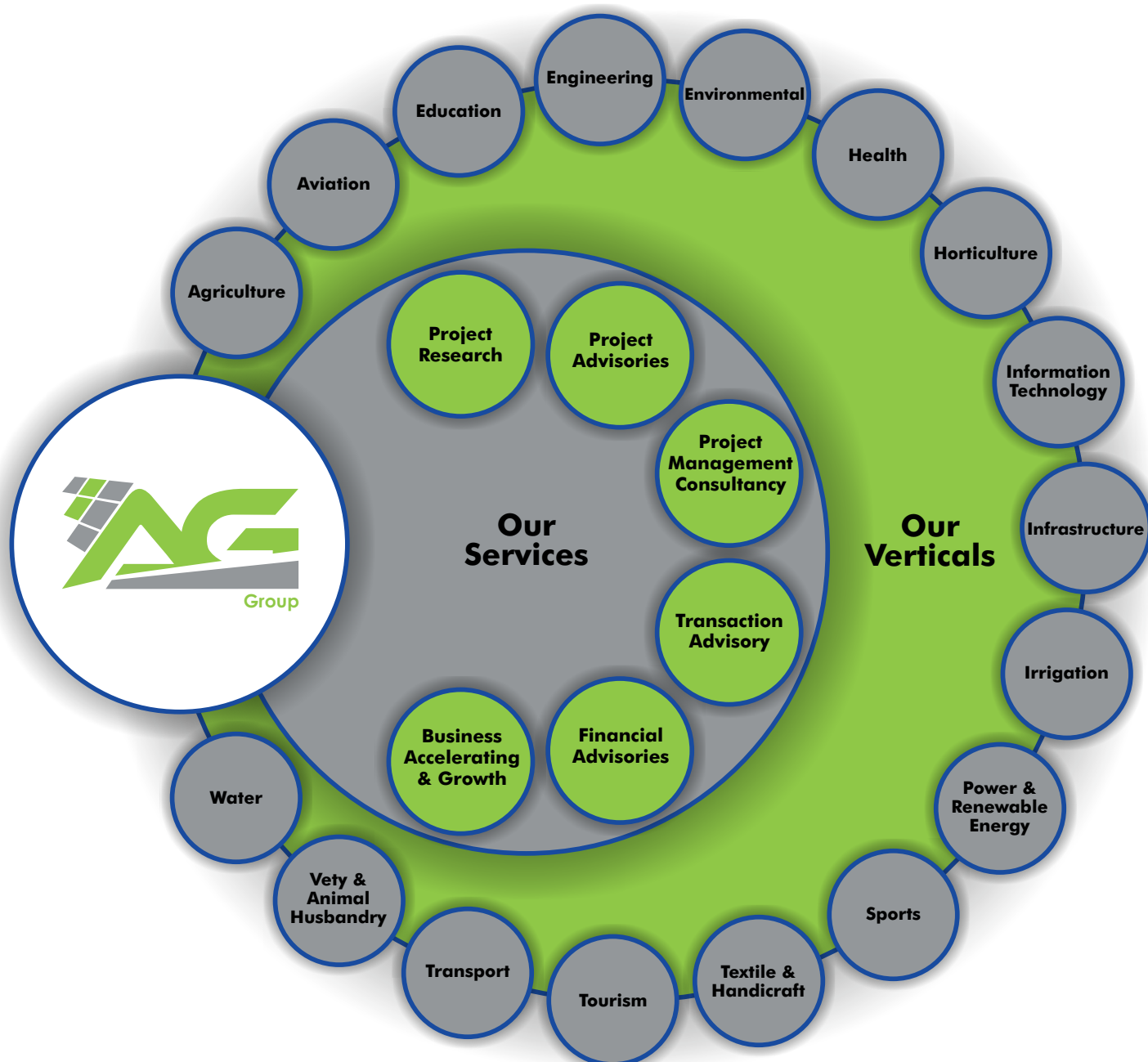
## References

1. <https://www.ibef.org/industry>
2. [https://censusindia.gov.in/2011provresults/paper2/data\\_files/india2/1.%20data%20highlight.pdf](https://censusindia.gov.in/2011provresults/paper2/data_files/india2/1.%20data%20highlight.pdf)
3. <https://www.statista.com/statistics/1103900/india-urban-dwellers-daily-commute-distance/>
4. [https://tifac.org.in//images/tifac\\_images/2035/tv2035/trans\\_roadmap.pdf](https://tifac.org.in//images/tifac_images/2035/tv2035/trans_roadmap.pdf)
5. [https://morth.nic.in/sites/default/files/Annual\\_Report\\_English\\_2018-19.pdf](https://morth.nic.in/sites/default/files/Annual_Report_English_2018-19.pdf)
6. <https://www.aai.aero/en/rcsudan>
7. <http://shipmin.gov.in/sites/default/files/6642376426SagarmalaNewsletterFinal28122016.pdf>

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