The Transportation and Logistics System in India

Master Degree Project

By

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SUBMITTED IN PARTIAL FULFILLMENT IN THE REQUIREMENT FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION INTERNATIONAL PROGRAM

SIAM UNIVRSITY

THEMATIC CERTIFICATE

GRADUATE SCHOOL OF BUSINESS SIAM UNIVERSITY (IMBA)

Major	Curriculum
International Business Management	Master of Business Administration

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Title: The Transportation and Logistics System in India

This Independent study has been approved to be partial fulfillment of the requirement for the Degree of Master of Business Administration International Program.

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Date.....Feb. 8., 2017

Abstract

India is on the verge of being one of the biggest economic powerhouse in Asia and the world. It is one of the biggest economies in the world. Several factors are playing a prominent role in the development of India. We have focused on transportation and logistics system in India since it is a backbone of the Indian economy. Transportation is important for building trade and economic relationship with neighbouring countries and also other countries.

There were three main objectives of the study, first to analyze and find relationship between each independent variable namely infrastructure development, civil aviation, policy and safety in our economy or each sector under logistics and transportation. Indian government is keenly aware that sustaining democratic principle, re-building and maintaining infrastructure are necessary to attract foreign direct investment. Government has change policy of civil aviation and safety. Indian Transport system is the most important economic activity among the components of business logistics systems. Around one third to two thirds of the expenses of enterprises' logistics costs are spent on transportation.

The transportation and logistics system in India is a network comprising of railways, road and highways, sea ports and aviation sector. As per our research railways and sea ports are the most popular means of transportation. For further growth of logistics system in India the respondent think that supply chain should be visible and customer service should be given high priority. Another factor essential for improvement of transportation and logistics system in India is to implement new technology and digitization.

Acknowledgment

This Independent study research “The Transportation and Logistics System in India” has been done as a fulfillment of my IMBA graduation. First and foremost I offer my sincerest gratitude to my Advisor Dean of IMBA Siam University Dr. Vijit Supinit, who has supported me throughout my independent study with his patience and knowledge whilst allowing me. I attribute the level of my Master degree to his encouragement and effort and without him this Independent study too, would not have been completed or written. One simply could not wish for a better or friendlier supervisor. I am also thankful to him for encouraging the use of correct grammar and consistent notation in my writings and for carefully reading and commenting on countless revisions of this manuscript.

I am grateful to Mr. Bikash Dahal(BD) for his encouragement and practical advice. I am also thankful to him for reading my reports, commenting on my views and helping me understand and enrich my ideas. I would like to gratefully thankful to all of friends have helped me stay sane through these difficult years. Their support and care helped me overcome setbacks and stay focused on my graduate study. I greatly value their friendship and I deeply appreciate their belief in me

Most importantly, none of this would have been possible without the love and patience of my family. My immediate family to whom this study is dedicated to, has been a constant source of love, concern, support and strength all these years. I would like to express my heart-felt gratitude to my family. My lovable family has aided and encouraged me throughout this endeavor. I must give a special indication for the support given by my parent. I warmly appreciate the generosity and understanding of my extended family. Finally, I would like to heartly and sincerely thankful to all supportive and lovable people whose gave me his/her valuable time. Thank you.

Ashutosh Mishra

India

The Transportation and Logistics System in India

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Chapter 1

1.1 Introduction:

Logistics is a process of transferring goods from point of origin to point of consumption for the purpose of satisfying requirement of either an individual or an organization. Logistics at present is making the transfer of good more effective and efficient. In India, logistics began in the 1950s and there are numerous issues focused on this area as of now. Because of nationalization and globalization, the importance of logistics in growing gradually. For industries, logistics helps optimize existing production and distribution based on the same resource through management techniques for promoting the efficiency and competitiveness of enterprises.

One of the key elements in a logistics chain is transportation system, which works as a bridge among separate activities. Transportation occupies one –third of the amount in the logistic costs. The transportation system also influences performance of logistics system hugely. Transportation is important from the manufacturing procedure to delivery for final consumption by consumer. It is required for the total process of logistics. With a good coordination between each and every component in the logistics system maximum benefit can be received.

Transportation in India comprises of land, air, rail and marine. Land transportation however is dominant since supporting infrastructures for other means of transportation is weak. India has one of the world's largest networks however Despite having one of the world's largest rail networks, India's share of cargo transported by rail has declined steadily from over 85 percent in the 1950s to around 30 percent at present.

1.2 Purpose:

The purpose of this paper is to discuss and understand the transportation and logistics systems in India. By collecting primary and secondary data from various sources like case studies, newspaper clippings, past research papers and publications and conducting interviews we will provide a general framework. This report can be used for further references by academics and researchers.

This research paper begins with introduction to transportation and logistics system in India. Along with introduction to transportation and logistics system in India we will discuss the interrelationships between logistics and transportation as well. It expresses the benefits that transportation brings to logistics activities and vice versa.

1.3 Scope of study:

This paper comprises a review of international literature and research on the relationships between transport investment and logistics system development, together with issues on current India policies and practices in the light of this review. The scope of logistics is more or less confined to the routine job of transportation and storage of goods.

1.4 Objective:

The objective of considering the role of transportation in Indian logistics system is

- To understand the efficiency of transportation.
- To understand policy and safety in India.
- To understand the digitized and smooth transportation system.
- To explore facts and evidence about the research topic on hand.
- To understand the investment and growth driver in transportation.

1.5 Research Questions:

- The role of transportation in economics development of India?
- The role of government police innovation and safety in transportation?
- The role of information and communication technology to enhance transportation efficiency India?

1.6 Definition of important term:

Infrastructure:

In this reach variable transportation cover a different sector by sector infrastructure. Under this independent study, the variable effected development Indian logistics chain by these sector ports, railway, roads and airways. These factors make a positive relation with development of logistics chain in India. Investment in infrastructure is necessary to achieve sustainable and viable economic growth. This is because ample amount of resources, i.e. infrastructure is necessary for commercial farming which helps to achieve income surplus for capital accumulation.

Government of India formed national Transportation Police Committee (NTDPC) in 2010 to formulate a long –term transport policy.

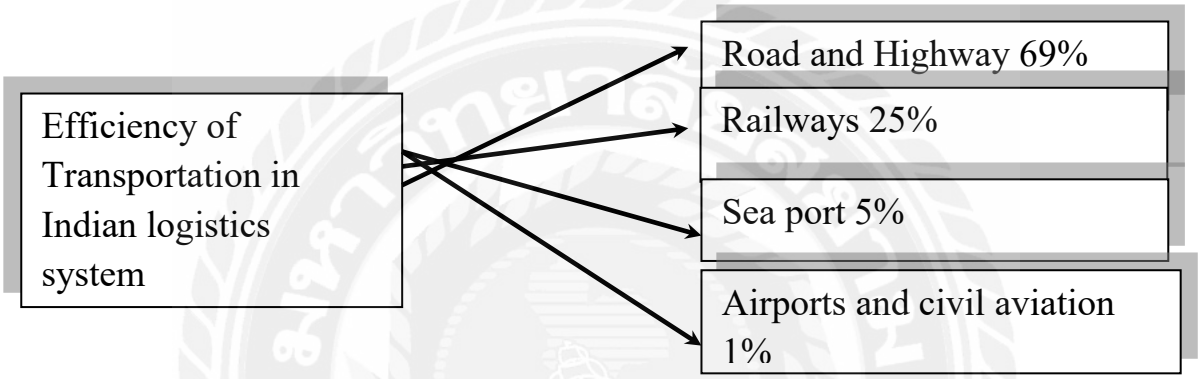
Civil aviation:

Civil aviation is one of two major categories of flying, representing all non-military aviation, both private and commercial.

1.7 Limitation of study:

- This research investigates only logistics system in India.
- This research has only base on infrastructure, IT, laws and rules.
- In this research Sample size is limited 100 participants.

1.8 Theoretical Framework:



Chapter: 2

Theory and Literary Reviews

2.1 Introduction:

This chapter will reflect upon the previous research work done by other scholars in the area of transportation contribution in Indian logistics system and the role of transportation in logistics system of India in order to justify the research gap filled by this study. The chapter will analyze firstly the infrastructure by transportation conditions that contributed in the logistics development of India that will lead to rationality of choosing independent variables like ports, railway, roads and highway. This chapter will also produce conflicting theories from different authors and then the researcher will analyze the theories based on his research variables and then the best theories will be chosen by the researcher in order to find the relationship among independent variables and their connection with the rationality of transportation of India. The selection criteria will be made by the researcher to finalize the theories that could be used as basis to prove his hypothetical framework.

2.2 Component of logistics system:

The closely linked components of the logistics system are

- Logistics service
- Information system
- Infrastructure/resources

The components of logistics is inclusive of service, information systems and infrastructure/resources. They are inter-linked to each other. Material and goods transportation from one point to another, i.e. from production process till final consumption is supported by logistics services. They include activities undertaken in-house by the users of the services (e.g. storage or inventory control at a manufacturer's plant) and the operations of external service providers. This service includes physical and well as non – physical activities. Activities like transportation, warehousing, designing supply chain, contractor selection and so on fall under logistics services. The flow of logistics services is cyclical.

Information systems include modeling and management of decision making, and more important issues of tracking and tracing. The use of information system for logistics helps in receiving required data and feedback during various steps of communication between several logistics services and target points.

Infrastructure consists of human resources, financial resources, packaging materials, warehouses, transport and communications. Most fixed capital is for building those infrastructures. They are concrete foundations and basements within logistics systems.

2.3 Logistics Historical role of Transport:

In the past, logistics was used by the military system to get arms and ammunitions to the battlefront during war. At present, logistics is seen as an important part of modern production process. The main background of its development is that recession of America in the 1950s caused the industries to place importance on goods circulation. The term, logistics was initially developed in the context of military activities in late 18th and early 19th centuries and it launched from the military logistics of World War II.

Business logistics began the early 1960s. A key element of logistics, the trade-off between transport and inventory costs, was formally recognized in economics at least as early as the mid-1880s. (BTRE, 2001) Based on the American experience, the development of logistics could be divided into four periods (Chang, 1998), which are represented as Figure 2.

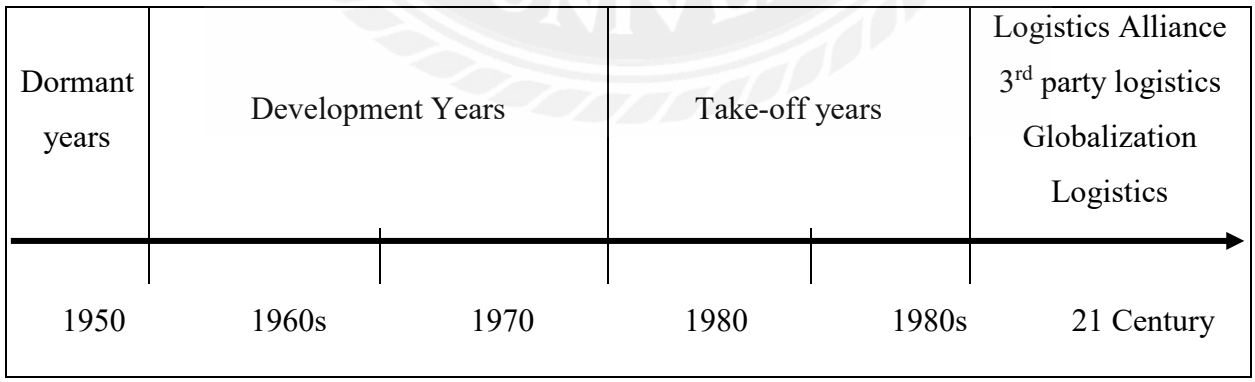


Figure 2. Logistics historical development

Before the 1950s, logistics was not a part of business process. Production was the main part of business process. During the 1950s and 1960s, applying new ideas of administration on business was a tendency. Drucker, a reputed management guru considered the process of

distribution of good produced physically as the are which had a lot of prospect. Lewis, another management guru studied in 1956 the role of air transportation in physical distribution. He then applied the “total cost concept” and stated that the notions of trade-off between inventory and transportation is possible. 1970s onwards, applications and researches on logistics started growing. Slow growth of market, pressure of high stagflation, release of transportation control, and competitions of the third world on products and materials all increased the significance of logistics system on planning and business at that time. The further tendency of logistics in the early 21st century is logistics alliance, Third Party Logistics (TPL) and globalised logistics. Logistics circulation is an essential of business activities and sustaining competitiveness, however, to conduct and manage a large company is cost consuming and not economic. Therefore, alliance of international industries could save working costs and cooperation with TPL could specialize in logistics area.

2.4 Logistic concepts and reasonability:

A. Logistics and transport:

Transportation in India is a central ingredient. This is because multimodal transport if your efficiently and effectively combine the advantage of each mode. Logistics is a process of planning, implementing and controlling the efficient flow of products, information and funds to conform to the clients requirements. Transport is a core component of logistics, moving goods between different points in the supply chain. Logistics encompasses the storage of raw material, work-in-progress parts, and finished products, as well as a verity of value-added service.

To achieve logistics efficiency and effectiveness the following factors should be kept into consideration

- Improvement of efficiency in each mode of transportation
- Coordination and seamless interchange between various transport modes.
- Integration of all supply chain management function effectively (includes demand management, supply management, manufacturing, storage, transport, distribution, and value-added service)

- Enhanced collaboration among supply chain partners (e.g.: supplier, manufacturers, distributors, and end users)

B. Logistics Performance:

The performance regarding logistics should be evaluated from the point of user and society. Two views are taken into consideration for the same. Micro view towards logistics focuses on the level of satisfaction of individual users that is inclusive of manufacturers, traders, commercial enterprise and related stakeholders. Another view is known as macro view that considers the contribution logistics has to a country's economic and social development. It also looks at the satisfaction of public needs.

Individual logistics users are concerned about cost, efficiency, and service quality (including safety, transit time, and reliability), and demand that logistics enterprises reduce cost and improve speed and service quality. Going by the World Bank Report released on Tuesday, India has made an improvement in its key international gateways in the past two years. While the overall Logistics Performance Index (LPI) score of India was 3.07 in 2014, it improved to 2.42 this year on a scale of 5. Altogether, there were 160 participant countries and India ranked 35, an improvement from 54th position last year. Germany bagged the first position while Syria was the last. In the past six years, the countries bagging the top 10 positions have remained consistent. Belgium, Austria, United Kingdom, Hong Kong and the United States have a position in the top 10 while Japan is 11th. India is lower than China (9) and South Africa (20), but surpasses some other BRICS members and several upper-middle income countries like Brazil (55), S and Russia (99). In fact, the report said that India over performed its income group, which is a good news.

C. Government and market:

Logistics development has always been driven by market demand, which leads logistics enterprises to continuously develop, upgrade, and transform their services to meet market needs. Government can play a proactive role in logistics market development, but government policies should concentrate on assisting logistics enterprises to improve their business competitiveness and vitality, and promote the development of robust logistics market. Indian governments are help to logistics field to pass a GST bill. The government has proposed to

implement the Goods and Services Tax (GST), which promises to integrate India's multi-layered indirect tax system into a single unified one, unshackling India from its bureaucratic web and improving the ease of doing business. The changes in the proposed indirect tax system could reduce transportation cycle times, enhance supply chain decisions; lead to consolidation of warehouses, etc. which could help the logistics industry reach its potential in terms of service and growth.

The government can serve three major logistics development function:

I. Promote fair and equitable competitive environment by establishing, improving, and maintaining progressive laws, regulation, and institutional frameworks to ensure effective operation of the logistics sector
II. Guide the logistics sector toward safe, energy-efficient, and environmentally friendly operation and reduce negative externalities.
III. Develop appropriate policies to address areas where market mechanisms may not work effectively, such as by improving national transport and logistics infrastructure, expanding the use of information technology, and developing technical standards.

2.5 Overview of Logistics in India:

Transportation is a key element in logistics. It is important to have adequate capacity and transport infrastructure and services should be reliable. This contributes towards the ability to compete in the field of international trade and attract foreign direct investment. Adequate policies is important to encourage competitive pricing and coordination among alternative modes to provide an integrated transport system that assures the mobility of goods at maximum efficiency and minimum cost.

Despite being a large country with a landmass of 3.29 million square km, the Indian infrastructure comprising roads, railways, seaports and airports is considered very poor as compared to other developed and developing countries. The poor infrastructure and inefficient transport services result in inefficient movement of freight and delays resulting in enormous amount of time, and therefore money. Ranked 54th among 59 countries in a overall infrastructure development ratings the reason has been inefficient and unreliable transport and logistics systems. The exports are less competitive when there is no effective and reliable logistics system in place. The poor infrastructure and transportation performance in India is

due to some underlying institutional problems. Unaccountability and confusion among various government agencies is the reason for inefficient logistics system in India. For example, in urban transport, many agencies have a role but none assumes overall responsibility leading to poor policy and unclear accountability. Secondly, resource mobilization is inadequate in India. Public investments in transport have been stagnant and declining relative to GDP and the input from private finance continues to be very limited. Weak asset and system mismanagement is another problem that affects the infrastructure sector related to transportation system. Overstaffing, inadequate data collection and untrained decision-makers results in poor analysis in decision making. Some other factors like unwanted political influence, uncompetitive procurement and excessive focus on new investment at the expense of existing asset maintenance also make the logistics system inefficient in India.

India being a very large country area wise and population requires a very extensive infrastructure. Underinvestment in major infrastructures like railways, road, ports, airports, tele communications and electricity generation has led to economic deficit. The infrastructure finance gap is massive, reaching several hundred billion dollars over the coming years. Mobilizing this level of financing will not be easy, but it is achievable. India has a high savings rate and could finance much of its investment needs domestically. India has much to accomplish from a social and economic perspective, from reducing poverty to bringing sanitation and reliable power to hundreds of millions of people. Much will need to be done to make investment in India's infrastructure an attractive proposition for investors. Many issues, from corruption to bureaucratic barriers, stand in the way of the country's growth potential. The recommendations below outline some potential options for reducing India's most pressing infrastructure development barriers.

2.5.1 Road

India has the third largest road networks in the world which is connected mainly through national highways and state highways. The road network also comprises district, rural, urban, and special purpose roads (for military, port, etc.). Roads in India are used for 68% of goods transportation in India. Around 1.5 million trucks operate on the Indian roads and this number is growing at around 10% a year. Despite having an extensive road network, India suffers from capacity shortage due to poor road quality. The national and state highways and expressways

are congested and are not linked to each other. Most national highways are double-lane or single-lane, with a mere 2% being four-lane or higher standard (Figure 2.1).

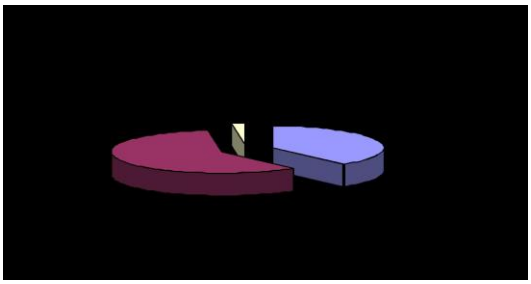


Figure 2.1: Road width of the National Highways in India

Source: State of Play, Logistics in India, Price Water House Coopers

Improving the road safety scenario in the country is one of the important and challenging activities of the Road Transport Division. The following Acts/Rules, which embody the policy relating to motor vehicles and State Road Transport Corporations (SRTCs), are being administered by the Road Transport Division of the Ministry:

• Motor Vehicles Act, 1988
• Central Motor Vehicles Rules, 1989
• Road Transport Corporations Act, 1950
• Carriers Act, 1865/Carriage by Road Act 2007

Prime Minister Narender Modi has set The India-Myanmar-Thailand (IMT) trilateral highway, a 3,200-km road which entails linking India to Myanmar and then further to Southeast Asia, as priority. The government is set to ink a strategic agreement to operationalize the highway to enhance regional co-operation later in November this year. This project helps for transportation in neighbor country. Radical changes in the road transport policy operations is necessary. Transportation process needs optimization. This is possible by setting a benchmark for packaging and processing. Automation can be used to load and unload goods. Proper road network is very important. It is also critical for the development of logistics system in both urban and rural areas.

Problems of Road Transport:

Though the government of India is putting efforts for the development, road transport is facing following problems.

1. Extent of road transport is insufficient compared with population and geographical area.
2. The development is hampered due to permit system, motor vehicles Act. Existence of check posts, etc.
3. Burden of tax.
4. Increase in the prices of fuel and spare parts of vehicle, inflation, etc.
5. Bad conditions of village roads.
6. All the villages have not been connected with cities.
7. Unsatisfactory administration of roads.
8. Financial problems and Wide spread corruption.

Road Policy and technology in India:

- India is seeking US cooperation in innovative technologies in Intelligent Transport System (ITS) with its policy shift from "Build Road" to "Move in India" with special emphasis on efficiency and improving logistics.
- Duty free import of high capacity and modern road Construction equipment,
- Complete tax holiday for any 10 consecutive years out of 20 years.
- Longer concession periods of up to 30 years are permitted as per the roads policy of India.
- National Highways (contribution to economic growth)
- Six-laning 6,500 km of Golden Quadrilateral and selected National Highways,
- Four-laning 6,736 km on North-South and East-West Corridors,
- Four-laning 12,109 km of National Highways,
- Widening 20,000 km of National Highways to two lanes,
- Developing 1000 km of Expressways,
- Constructing 8,737 km of roads, including 3,846 km of National Highways, in the North East.

Investment Growth:

- Transport sector comprises 70% share of road network and 6% of GDP
- 4.86 million kilometers of total road network
- Approximately 60% of freight and 90% of passenger traffic is done through road network

- Major initiative announced by Indian government to upgrade and strengthen highways and expressways in the country.
- The private sector has emerged as a key player in the development of road infrastructure.

SECTOR POLICY

- Road infrastructure is a key government priority – the sector has received strong budgetary support over the years.
- Standardized processes for PPP projects - a clear policy framework relating to bidding and tolling.
- A regulatory authority is being constituted for the road sector.
- Environmental clearance is de-linked from forest clearance.
- Harmonious Substitute of Concessionaires is permitted in ongoing and completed projects for improving the availability of equity in the market for re-investment in highway projects.
- An entity exclusively for the development of roads in the North-eastern region and border areas is being created under MoRT&H.
- The Prime Minister's Gram Sadak Yojana (PMGSY) and Construction of Rural Road Project (CRRP) focuses on the development of rural roads.
- The Central Road Fund assists the State Government and Union Territories in the development of state roads.

2.5.2 Railways:

Indian railways network is the second largest in the world under single management. It began in 1853 AD as Indian Railways (IR) and is a government monopoly. This network covers a length of 63,028 kilometers and has 6,853 stations. The railways system in India has over 42,000 coaches. 24% of the railways system is electrified. The flow of goods and passenger through railways has grown rapidly in the last 50 years.

Railways is a cheaper mode of transport compared to other modes of transportation and are used mainly for transporting over long distances. Major commodities like coal, fertilizers, construction materials and equipment, gasoline and chemicals and other raw materials

constitute 89% of freight traffic for railways. The rest is other commodities moving in bulk and containers.

The goods transferred through railways has dropped significantly in the last few years as firms are shifting towards road transportation. The flexibility in dispatching and less inventory in transit are the major reasons road is preferred to railways.

The government has recently launched the 'Policy for participative models in rail connectivity and capacity augmentation projects', to attract private capital for accelerated construction of rail infrastructure. As per the new policy, private players can construct and own private rail lines connecting ports, large mines, logistics parks or other similar industries or cluster of industries, which handle goods traffic for multiple consignors or consignees. As per the Rail Budget 2013, US$ 20 billion of the overall US$ 104 billion proposed investment in the 12th Five Year Plan would be mobilized through the PPP route. Private sector participation is likely to result in additional transport capacity of railways, and reduced traffic congestion at ports and roads.

Problem of railways:

1. Railways are facing still competition from road transport and thus its share in passenger and goods declining.
2. Its present railway network is overburdened and inadequate to meet the new challenges of a fast developing economy.
3. There is mounting deficit due to non increase in fares and tariffs by the Government due to political reasons.
4. The railways have to develop uneconomic projects due to political pressures and interferences.

Rail policy and technology of India:

- The Government of India has cleared a proposal to allow 100 per cent FDI in railway infrastructure, barring operations, via the automatic route. FDI channeled through this route does not require prior government approvals.
- High speed train and bullet train projects.
- Dedicated freight lines, freight terminal and passenger terminals.

- Rolling stock including train sets and locomotive coaches manufacturing and maintenance facilities.
- Railway electrification, signaling systems and Mass Rapid Transport Systems, other fully Wi-Fi stations, automatic ticket machine- vending machine to provide Ro water and e- catering service.
- Infrastructure in industrial parks pertaining to railway line siding including electrified railway lines and connectivity to main railway line.
- Battery Operated Vehicles for Disabled.
- All India security helping 182 set up to report any untoward incident & quick emergency help during travel.
- Zero direct discharge of human waste on railways tracks.
- India railways launched 4 social media platform on FB, Twitter, Instagram and YouTube the handle-@railindia.
- Rail Passengers to Get up to Rs. 10 Lakh Accident Insurance Cover for a Premium of Just Rs. 10

Investment Growth:

- The share of private investment in MRTS projects is expected to increase from 13% during 2007-12 to 42% during 2012-17.
- Railways are aiming at $500 billion investment in next 10-12 year in increase capacity in anticipation of faster economy growth.
- The Government of India sanctioned Rs 1,000 crore (US$ 150.14 million) for a 15 km railway project connecting India and Bangladesh linking Agartala in Tripura and Akhaura in Bangladesh.
- Japan has offered to provide loan at less than one per cent interest rate for India's first bullet train between Mumbai and Ahmadabad costing US$ 15 billion, on the condition that India buys 30 per cent of equipment from Japanese firms.
- Cabinet are approval a 9 project .Project will enhance transportation capacity travel facility and upcoming industries.

2.5.3 Sea ports:

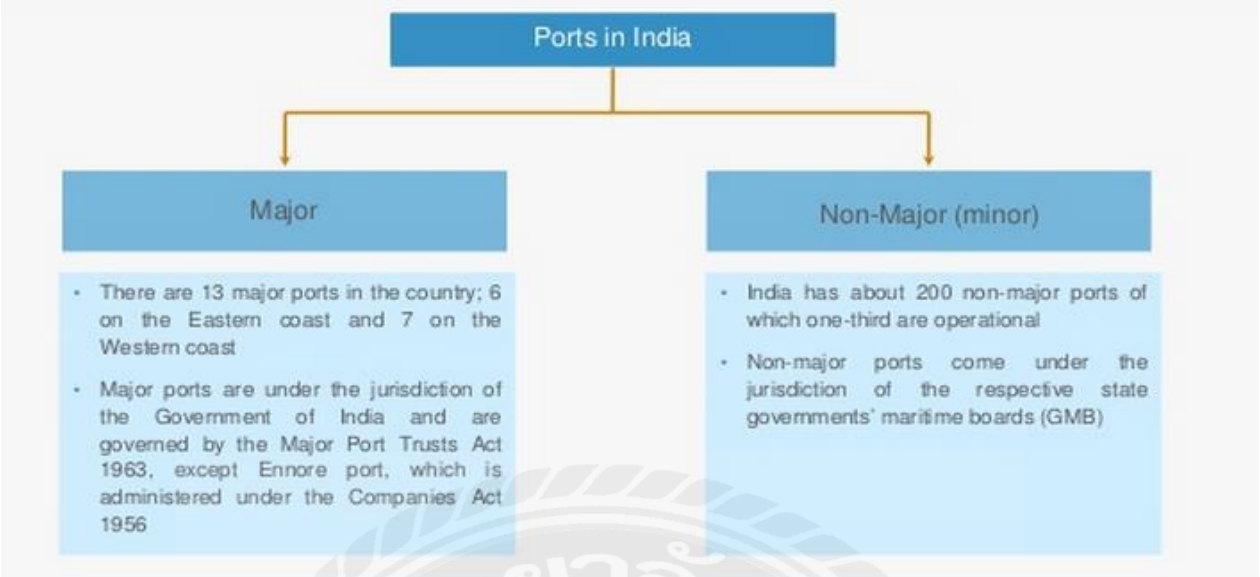
7,517 kilometers if India's coastline handles 95% of foreign trade through seaports. It has 12 major ports and 184 minor and intermediate ports. The major ports are in Gujarat, Maharashtra,

Goa, Karnataka, Daman & Dui, Karnataka, Kerala, Lakshadweep, and Andhra Pradesh. Petroleum, coal, iron ore, cargo, and raw materials are the main commodities coming through these ports. The traffic in sea ports is growing at over 10% annum. India's ports serve as gateways to India's international trade and facilitate 90 percent by volume and 70 percent by value of India's external trade via maritime traffic. Of its major and non-major ports combined, 139 are along the west coast, while the remaining 50 ports are along the east coast.

33% of port cargo traffic come through Gujarat whereas, Maharashtra, Andhra Pradesh and Tamil Nadu contributed 15 percent, 13 percent, and 11 percent respectively to total port cargo traffic and rely mainly on traffic from major ports. Among the maritime states, Karnataka and Andhra Pradesh witnessed the highest CAGRs in cargo traffic of 32 percent and 28 percent respectively during the last decade.

The Government of India (GoI)'s ambition to replace the National Maritime Development Program (NMDP) with the more comprehensive Maritime Agenda 2010–2020 is in line with its objective to increase port capacity. It intends to encourage private investment in both major and non-major ports and bring port performance at par with international standards. Through this program, the GoI plans to invest INR 2, 870 billion in generating total port capacity of 3,200 MMT and cater to expected cargo traffic of 2,500 MMT by the end of 2020.

The government permits joint-venture formations between major port and foreign port, between major port and minor port(s), as well as between major port and Company. The measure is aimed at facilitating port trusts to (i) attract new technology; (ii) introduce better managerial process; (iii) expedite implementation of schemes; (iv) foster strategic alliance with minor ports for creation of optimal port infrastructure; and (v) enhance confidence of private sector in funding ports.



Besides foreign trade, ports play an important role in internal trade. Inland water transport in India carries about 16 million tons of goods each year. Many rivers of the country are linked with major ports. These rivers carry important goods from ports to hinterlands to facilitate the transportation of these goods inside the country.

Problem of port:

1. Government has not been able to modernize the major ports.
2. Political pressure, lack of autonomy, absence of incentives, excessive bureaucracy.
3. Poor road and rail container evacuation infrastructure from the port.

Ports development:

- 87 new projects
- 73 Public Private Partnerships.
- 60 operational non-major ports.
- 800 Million Metric Tons in cargo capacity.
- 12 major ports.
- INR 430 Billion invested under make in India.

Growth Driver:

- Increasing trade activities and private participation in port infrastructure development.
- Rising cargo traffic and an increase in the number of non-major ports.
- Existing ports are investing on improving their draft depth.
- Focus on the development of terminals that deal with a cargo, for e.g. LNG.
- India is the largest importer of thermal coal in the world and this is expected to grow due to increased demand for power.

2.5.4 Air cargo and civil aviation:

The mode of transport is indispensable when speed and time are the main constraints. one can easily cross and reach remote, inaccessible and hostile area like lofty mountains, thick forests, marshy areas and sandy deserts by air transport which is almost impossible by other modes of transport.

Airports in India are managed by Airport Authority of India (AAI), under the central government. The country has six international airports- Delhi, Bombay, Calcutta, Madras, Trivandrum and the newly upgraded Bangalore airport. The air cargo carried by airways usually constitutes high value goods such as computers, microprocessors, electronics and optical equipment, precision instruments and perishable foodstuffs.

Air freight logistics is necessary for many industries and services to complete their supply chain and functions. It provides the delivery with speed, lower risk of damage, security, flexibility, accessibility, and good frequency for regular destinations, yet the disadvantage is high delivery fee. The characteristics of air freight logistics are that: (1) airplanes and airports are separated which means industries only need to prepare planes for operation; (2) it allows fastest delivery at faraway destinations; (3) air freight transport is not affected by landforms. Given the trend of global markets, air freight logistics also has to change their services. The future tendencies of air freight development are integration with other transport modes and internationalization and alliance and merger between air transports companies the future pattern of air freight logistics is cooperative with other transport modes, such as maritime and land transport, to provide a service base on Just-In-Time, and door-to-door.

Indian president Mr. Pranav Mukherjee said as India is at the threshold of taking a major leap in the aviation sector, this event is well timed and resonates well with the latest policy initiatives of "make a India'', "stand up India". He called upon the global giants to seize this opportunity and take lead to forge long-time partnership.

Problems of air cargo and civil aviation:

1. Indian carriers operate with some of the highest fuel costs in the world**.**
2. India faces challenges posed by national and state policies, law, regulation and practice.
3. Boeing forecast also cautions that India is one of the several regions where "aviation growth outpaces planned infrastructure development."

Reason to invest:

- During the last decade, civil aviation sector had a growth rate of 14 percent. Aviation also received $570 million in foreign direct investment (FDI).
- India is at the threshold of taking a major leap in the aviation sector, this event is well timed and resonates well with the latest policy initiatives of 'Make in India', 'Stand up India' and 'Start up India'. He called upon the global giants to seize this opportunity and take lead to forge long-term partnerships.
- Besides cost savings and efficiency in the overall freight system, they offer environmental benefits such as reduced energy consumption and lesser air pollution.

Policy:

- Global players are also coming to India because of the open sky policy. The open sky policy refers to greater focus on infrastructure development, liberal FDI norms, robust technical and engineering capabilities, and assured supply of skilled workforce in information technology and communication network.
- Policy changes for every mode of transport and increased investment in each of them can imply more effective freight movement and progress for the industry – something that is extremely important for India to get back on the high growth path.

Growth Driver:

- Increasing trade activities and private participation in airports infrastructure development.

- Efforts such as coordination among various agencies in infrastructure planning, improvement and simplification of tax regimes, reforms in urban planning and improving dialogue with regulatory agencies are some suggestions provided by the Deloitte-ICC paper.
- Significant growth drivers for the logistics industry is anticipated from factors such as growth in industries like auto, pharma and FMCG; increase in trade flows; private sector investments and the development of logistics infrastructure.

Improving aviation infrastructure:

- Optimization of airport operation
- Effective management of airspace and airside operation
- Safety and security enhancement.
- Effective air cargo operation.

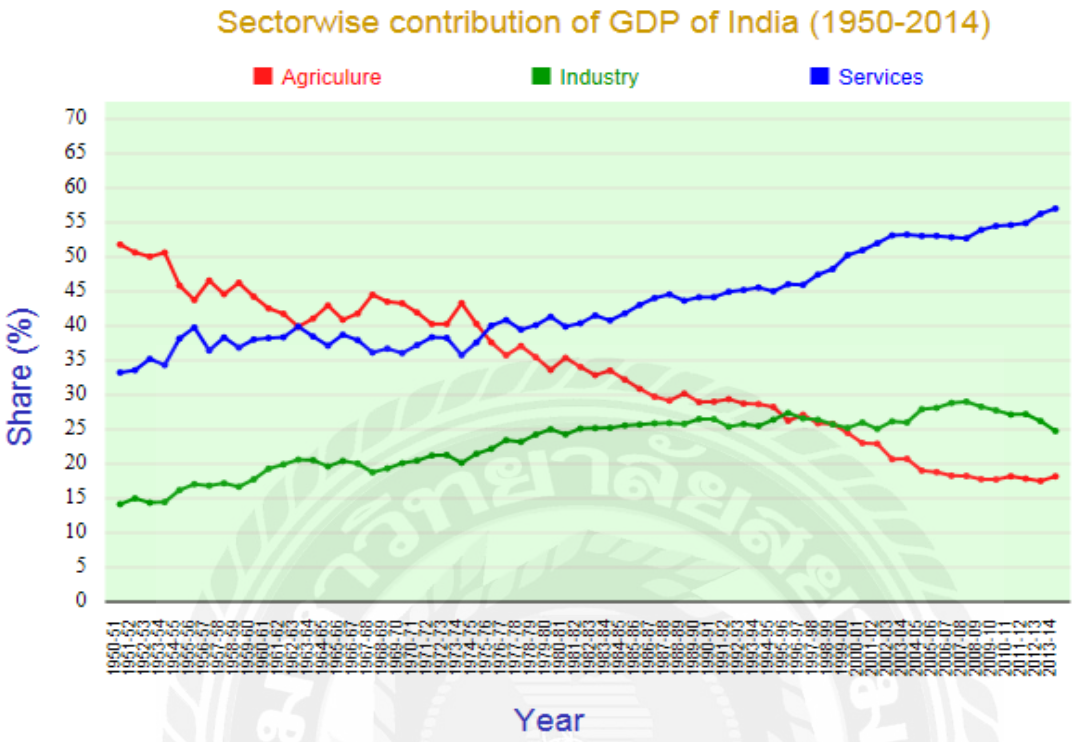
2.6 Transports contribute in GDP:

The economy of India is classified into three different sections – agriculture and allied, industry and services. Agriculture sector consists of agriculture farming and livestock farming, forestry, fishing, and activities related to them. Industry includes manufacturing and production, electricity, gas, water supply and construction. Services sector includes Trade, repair, hotels and restaurants, Transport, storage, communication & services related to broadcasting, Financial, real estate and professional services, Community, social & personal services.

Per sector wise Indian GDP composition in 2014 are as follows: Agriculture (17.9%), Industry (24.2%) and Services (57.9%). Total production of agriculture sector is $366.92 billion. India is 2nd larger producer of agriculture product. India accounts for 7.68 percent of total global agricultural output. GDP of Industry sector is $495.62 billion and world rank is 12. In Services sector, India world rank is 11 and GDP is $1185.79 billion. Contribution of Agriculture sector in Indian economy is much higher than world's average (6.1%). Contribution of Industry and Services sector is lower than world's average 30.5% for Industry sector and 63.5% for Services sector.

2.7 Trend in growth and development in transportaion :

Transportation systems like rail, road, marine, aviation, and pipelines constitute the modes of



transportation in India. Rail and roads are the common means of transport and handles 87 per cent of the total freight traffic in the country as per data received on 2007-2008. The rail - road mix in freight movement has development rather sub-optimally over the year, as railways consistently lost out to road, unable to install capacity or respond to market needs.

Rail and road continue to dominate the transportation mode for passengers in India compared to air and water transport. However, on certain routes, air and water transport carries a considerable volume and this is increasing rapidly. Rail and road transportation still is the dominant mode of transport covering 90 percent of the total traffic in 2011-12.

Public action has been and is likely to continue to be the dominant force in development of transportation infrastructure facilities. The transport sector has received special attention in India's planning process and public investment has increased over the various plans.

However, with expanding investment requirements public resources alone are not adequate and this necessitates private sector participation. A decision that is expected to not only augment the resources available for the transport sector but also to improve service delivery and efficiency.

2.8 Interrelationship between Transportation and Logistics:

If transportation is well developed logistics can bring a lot of advantages. This is because good transportation system in logistics activities means better logistics efficiency which leads to efficient logistics, reduce operation cost and helps in promoting service quality. More effort and participation is necessary from public and private sectors for improvement of transportation system. Logistics when operated properly can increase competitiveness as a whole, i.e. the government and enterprises.

8.1 Transport Costs and Characteristics of Logistics:

Indian Transport system is the most important economic activity among the components of business logistics systems. Around one third to two thirds of the expenses of enterprises' logistics costs are spent on transportation. According to the investigation of National Council of Physical Distribution Management (NCPDM) in 1982 (Chang, 1988), the cost of transportation, on average, accounted for 6.5% of market revenue and 44% of logistics costs.

The transportation cost here includes the means of transportation, corridors, containers, pallets, terminals, labors, and time. This figure signifies not only the cost structure of logistics systems but also the importance order in improvement processing. It occupies an important ratio in logistics activities. The improvement of the item of higher operation costs can get better effects. Hence, logistics managers must comprehend transport system operation thoroughly.

Transport system makes goods and products movable and provides timely and regional efficacy to promote value-added under the least cost principle. The results of logistics activities and production and sale is affected by transport. Value of transportation varies with different industries.

8.2 Effect of transportation of logistics activity:

Transportation is mediator among several steps in logistics that results in resource conversion into useful good for final consumption. It is the planning of all these functions and sub-functions into a system of goods movement to minimize cost maximize service to the customers

that constitutes the concept of business logistics. Today the steps involved are production companies, warehouse, transportation, wholesaling and retailing. However, transportation is part of production/manufacturing plants, warehousing services, and merchandising establishments as well. Production or manufacturing plants required the assembly of materials, components, and supplies, with or without storage, processing and material handling within the plant and plant inventory.

8.3 The Role of Transportation in Service Quality:

The role that transportation plays in Indian logistics system is more complex than carrying goods for the proprietors. Goods sent to the right place at the right time to satisfy customer's demands requires convenient process and that is total quality management. Service quality helps in keeping the gap closer between the producers and consumers. That's why for efficiency and economical running of logistics transportation is important. Also, transportation brings additional benefits to service quality in business.

Chapter 3

Research Methodology

This chapter as mentioned in the guideline is all about research methodology so it will cover following topics:

3.1 Research Methodology.

3.2 Source of Data

3.3 Research Design.

3.4 Sampling Designing.

3.5 Data collection tools and Analysis Method.

3.1 Research methodology:

The methodology used to conduct this research regarding the transportation and logistics system in India was to analyze the qualitative and quantitative data already available through various sources. These sources included newspaper clippings, past research reports, case studies and historical data.

The research methodology involved defining the problem and the purpose of the research. Then after, objectives and hypothesis for conducting this research were highlighted. A specific design for this as determined and sampling was done. Then we went for data collection.

3.2 Sources of data:

The researcher will use following source in order collect data for and analyze it to generate theoretical generalization.

1. Updated research work from world wide web.
2. Government data and analysis
3. Publicly available data and analysis

Latest Research:

This report will use latest researches from the internet to review, analyze and obtain concrete data that is related with the subject of this research and can be used to provide answers of research questions and satisfying research objectives as well.

Government records:

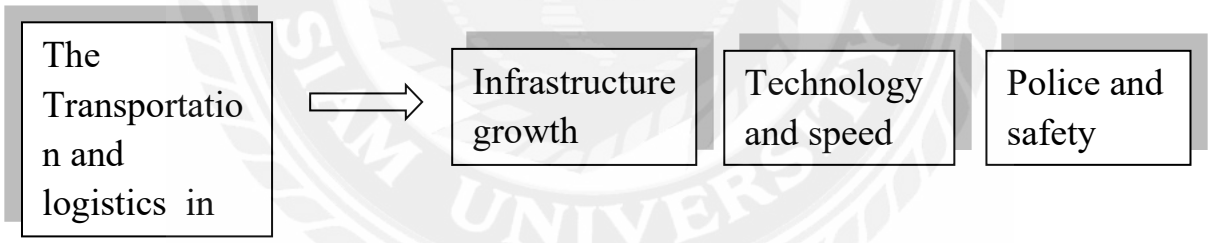
Government records about the subject are available in the form of government surveys, government ministry web site, census data, World Bank report, international trade report and other statistical reports. They are easily available on internet and widely used in research studies.

Public sector record:

Public records about the subject are available in NGO's like UN reports, World competitive index, and global competitiveness index as well as some other public sector organization and other. These records can be published or unpublished but they carry information that cannot be obtained from other sources. These all reports are easily accessible by internet.

3.3 Research Design:

Research design comprises of collecting, measuring, and analyzing data. The overall strategy used to combine various components of the research in logical and coherent way is known was research design. This helps in effectively addressing the research problem.



Research type:

This research type is quantitative and descriptive in nature since the research problem will analyze "The transportation and logistics system in India." This research is a combination of quantitative and qualitative research. Using descriptive research we gathered information that can be quantified and further used for statistical influence through data analysis. This type of research is a form of closed – ended question, which limit its ability to provide unique insights. However, used properly it can help an organization better define and measure the significant of something about group of respondents and the population they represent.

Unit of analysis:

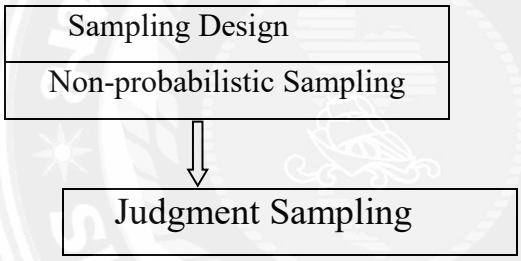
The unit of analysis for this research is infrastructure, FDI- inflow, NTPDC, and civil aviation. These are variable will be used to understand the check efficiency of transportation of logistics system .This will be also help us to find out the relationship of each of these variables with the independent variable of transportation .

Data type:

Data type is primary considering the fact that primary data is more reliable, update and suits the research problem because of digitalization of the different process that creates the new opportunities for development economy to make decision based on the rapidly available information.

3.4 Sampling Designing:

The research is based on following sampling design:



Judgement sampling, a part of non-probabilistic sampling is used for the basis of our research because it is easy to understand and necessary for this research. Although, there is a finite population but, the sampling can't be selected as satisfied or cluster or systematic sampling considering the fact that questionnaire designed for this research didn't suit these sampling procedures and then the data collection was also an issue of concern.

This research has selected to use non-probability sampling design because of the large population cost and time constraint. A non – probability sampling technique is commonly used for research like ours. All the samples are gathered but not all of them are gathered with equal chances of being selected. The type of non-probability sampling technique used in this research is judgmental sampling because its suits the objective of this research and convenient to use by the novice researcher. Also known as purposive sampling, subjects are chosen be a part of the sample with specific purpose in mind. With judgmental sampling, the researcher believes that

some purposively chosen as subjects. This approach is used when a sample is taken on certain judgments about the overall population. The underlying assumption is that the investigator will select units that are characteristic of the population.

3.5 Data collection Tools and Analysis Method:

The data collection tools used in this research is questionnaires because this tools suits the objectives off this research because questionnaire is easy to analyze. One of the advantages of this research using a questionnaire is data entry tabulation that can be done with many computer software packages like SPSS, Excel and Google drive. Questionnaires are familiar to most people.

Questionnaire reduces preference. The questions are uniform and it is only between the interviewer and the interviewee which means there is no middle-man bias. The research's own opinions will not influence the respondent to answer questions in a certain manner. There are no verbal clues to influence the respondent.

Inspection, cleaning, transformation, and modelling of data was done for the process of analyzing data. This was done to discover useful information to suggest, conclude and support decision making. Analysis of this research like other common research works involved summarizing a huge amount of data we collected. After that we present the result in such a way that communicates the most important findings or features.

The analysis of quantitative research in our research involved analysis of some of the following:

1. Variable frequencies
2. Variable differences
3. Statistical tests to estimate the significance of the result and the probability that they did not occur by chance.

The SPSS software was chosen as a data analysis method for this research. SPSS is software used by researchers to find correlation, descriptive analysis, r-test etc. Many researchers making their research in quantitative field use SPSS for the purpose of data analysis.

Validity and Reliability of the Research:

Reliability refers to the consistency of measure. If the same result is achieved time and again when repeated, then we can consider the questionnaire reliable. Our research questionnaire reliability is above 85%.

Chapter 4
Data Analysis and Result

This research is focused on “The Role of transportation in Indian logistic system”. There are two parts, include data analysis and the results of the analysis.

4.1 Data Analysis:

Data analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap and evaluate data. According to Honda and Gulati (2011) various procedures “provide a way of drawing inductive inference from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuations) present in the data”.

Quantitative data analysis is a systematic approach to investigations during which numerical data is collected and/or the researcher transforms what is collected or observed into numerical data. It often describe a situation or event answering the “what and ‘how many’ questions you may have about something. This is research which involves measuring or counting attributes (i.e. quantities).

This research has analyzed the numerical data from the online responding from India. The result then posted in SPSS format to analyze the data and produce the final findings. I would like to show the data that I have collected from the students of MBA from India by using questionnaire and used in SPSS software.

In this research used Spearman’s rank correlation coefficient in order to co-relate the independent variable with the dependent variable and tried to reject the six-null hypothesis that are describe in early chapter but before moving to that data, I am interested to show the order facts and figure as well. I am using alpha numeric chart data as well to show the results of the sample.

1.2 Variable Information:

4.2.1 Findings:

Mean, median, and mode are three kinds of "averages". There are many "averages" in statistics, but these are, I think, the three most common, and are certainly the three you are most likely to encounter in your pre-statistics courses, if the topic comes up at all.

The "mean" is the "average" you're used to, where you add up all the numbers and then divide by the number of numbers. The "median" is the "middle" value in the list of numbers. To find the median, your numbers must be listed in numerical order from smallest to largest, so you may have to rewrite your list before you can find the median. The "mode" is the value that occurs most often. If no number in the list is repeated, then there is no mode for the list.

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Government employee	17	16.8	17.0	17.0
	Other	14	13.9	14.0	31.0
	Public	19	18.8	19.0	50.0
	Student	50	49.5	50.0	100.0
	Total	100	99.0	100.0	
Missing	(Missing)	1	1.0		
Total		101	100.0		

A total of 101 samples were taken to determine the importance of logistics in India. About half of the respondents were students for this quantitative research. The next highest respondents were public, government employee and other respectively.

Mode of transportation in logistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airports	9	8.9	8.9	8.9
	Railways	45	44.6	44.6	53.5
	Road and highways	17	16.8	16.8	70.3
	Sea Ports	30	29.7	29.7	100.0
	Total	101	100.0	100.0	

Since railways expands all over India and the fares are also economical the main mode of transportation for logistics was railways. Due to inadequate infrastructure around 17% travel by road. Air transportation is still in the verge of development.

Transportation important for development of logistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airports	7	6.9	6.9	6.9
	Airports, Road and Highways	1	1.0	1.0	7.9
	Airports, Sea ports	12	11.9	11.9	19.8
	Airports, Sea ports, Railways, Road and Highways	2	2.0	2.0	21.8
	Railways	11	10.9	10.9	32.7
	Railways, Road and Highways	7	6.9	6.9	39.6
	Road and Highways	12	11.9	11.9	51.5
	Sea ports	24	23.8	23.8	75.2
	Sea ports, Railways	22	21.8	21.8	97.0
	Sea ports, Railways, Road and Highways	1	1.0	1.0	98.0
	Sea ports, Road and Highways	2	2.0	2.0	100.0
	Total	101	100.0	100.0	

As per the data received the respondents preferred sea ports and railways the most to other means of transportation. This is because India has one of the largest networks of rail roads and it is also easily accessible to sea.

4.2.2 Frequencies:

Areas important for growth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Availability	6	5.9	5.9	5.9
	Customer service	22	21.8	21.8	27.7
	Expense	6	5.9	5.9	33.7
	On-time	13	12.9	12.9	46.5
	Reliability	8	7.9	7.9	54.5

	Supply chain visibility	43	42.6	42.6	97.0
	Transit	3	3.0	3.0	100.0
	Total	101	100.0	100.0	

Logistics involves a lot of aspects. As per the above-mentioned data logistics involves availability, customer service and supply chain visibility. With the improvement in technology all of this has become more effective. Like in all kinds of services customer service is also considered the most important aspect for growth in logistics.

Export import logistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airports	17	16.8	16.8	16.8
	Railways	28	27.7	27.7	44.6
	Road and highways	13	12.9	12.9	57.4
	Sea ports	43	42.6	42.6	100.0
	Total	101	100.0	100.0	

Logistics doesn't only involve internal transfer of goods and services. Many of the goods and services and imported to India and the products from India are also transported outside of India. Sea ports by far are the most used means of transportation for logistics.

Transportation mode easily available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airports	8	7.9	7.9	7.9
	Railways	48	47.5	47.5	55.4
	Road and highways	39	38.6	38.6	94.1
	Sea ports	6	5.9	5.9	100.0
	Total	101	100.0	100.0	

As talked about before, the data shows that railways are the most accessible means of transportation. It is easily available for the Indian people so the process of logistics is also easy when railways is used.

Secure mode of transportation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airports	15	14.9	14.9	14.9
	Railways	57	56.4	56.4	71.3
	Road and highways	19	18.8	18.8	90.1
	Sea ports	10	9.9	9.9	100.0
	Total	101	100.0	100.0	

Again, railways stand out as the most secure means of transportation. The data collected shows that more than half the respondents chose railways over other means of transportation.

New GST bill impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Negative	19	18.8	18.8	18.8
	Positive	82	81.2	81.2	100.0
	Total	101	100.0	100.0	

The new GST bill passed in India a few months back has made logistics easy. The obvious reason being the goods are taxed only once all over India. In the past, taxes had to paid to all the states in India where the goods were sold.

Job opportunity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airports	13	12.9	12.9	12.9
	Railways	50	49.5	49.5	62.4
	Road and highways	12	11.9	11.9	74.3

	Sea ports	26	25.7	25.7	100.0
	Total	101	100.0	100.0	

Railways in India employs the most number of people. Although unemployment rate in India is very high people still believe railways has the most prospect for job creation. Half the respondents believe railways has better job opportunities than any other means of transportation.

Improve transportation system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100% FDI	14	13.9	13.9	13.9
	Awareness	17	16.8	16.8	30.7
	Good governance	27	26.7	26.7	57.4
	Technology and digitization	43	42.6	42.6	100.0
	Total	101	100.0	100.0	

Transportation is one of the most important factors for efficiency in logistics. With technology and digitization of various process in logistics transportation can be improved as per the respondents. However, good governance is also a very important factor to improve transportation system.

Better future prospect

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airports	20	19.8	19.8	19.8
	Railways	43	42.6	42.6	62.4
	Road and highways	13	12.9	12.9	75.2
	Sea ports	25	24.8	24.8	100.0
	Total	101	100.0	100.0	

As per the respondents, railways has a better prospect for the improvement of logistics in India. Since, railways is the main mode of transportation in India we think logistics process is easier when done by using railways as a major means of transportation.

Improvement in last five years

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Airports	10	9.9	9.9	9.9
	Railways	48	47.5	47.5	57.4
	Road and highways	20	19.8	19.8	77.2
	Sea ports	23	22.8	22.8	100.0
	Total	101	100.0	100.0	

Again, the respondents believe that in the last five years the railways network in India improved the most. The major reason being new railways and expansion of tracks to some more areas in India.

Chapter 5

Conclusion

5.1 Summary

The Transportation and Indian logistics system is good tremendous topic which is included a lot of things related to logistics development and most things it's relevant topic and interesting for MBA student because they all read about country transportation effected variable for his work and before investment we all of them analyze transportation mode and effected variable those relevant things with our investment so it’s make a good sense approach that things. Because some of them evaluate the quality on the basis of their past and some of them argued with present experience and knowledge and about development economy, satisfaction depends on different logistics channel significant.

This research remains is an issue of continuous improvement and rectification of the efficiency of Transportation Indian logistics System. This research mostly emphasized on three through make in India program. My research objective is to understand the transportation mode and new technology and security and safety and knowledge about infrastructure investment.

My second chapter focused on theoretical framework of logistics and transportation in India. I went through a lot of literatures as listed in the reference section to come up with theory and literary reviews. I have discussed about transportation and logistics in general and also highlighted the major issues related to transportation and logistics in India.

The third chapter discusses about the research methodology used during the research process. It has a detailed explanation about the process used to come to a valid conclusion for the purpose of this research.

In the fourth chapter, we analyse the data in had and also produce results.

5.2 Conclusion and Discussion:

The final findings have achieved all objectives of this study since the objective of this research was to produce a final conclusive statement based on the observations concluded by the final findings of the research. It is a descriptive qualitative research that used primary as well as secondary data and it’s one of the characteristics of qualitative study to make final findings

based on the observations of the research. It concluded by the two queries namely word frequency and correlation through SPSS that there is a definite relationship between efficiency of transportation and Logistics system in India. However, there is a more to improve to be competitive with others.

Since the findings of this research is an outcome of only 100 respondents we cannot say this is the viewpoint of more than a billion people in India. However, it gives a overview of what the citizens of India think are better for the development of logistics and transportation. A few articles from the past, reports and newspaper clippings were taken into consideration for the purpose of this report as well.

This research is carried out on the topic of efficiency of transportation in Indian logistics system and strived to achieve the objectives of this research. Infrastructure development, problem, growth, investment and FDI all play of role the efficiency of transportation in Indian logistics system. Therefore, the analysis concludes that:

The first think for investment, Indian infrastructure have lots of opportunity to investment in mode of transportation. New NDA governments are open policy in 100% FDI in rail and civil aviation. Ministry of highway and road are take new technology and safety system about decrease a road accident and solve a problem of traffic. Indian government seeking a new ITS technology. New Era of social media, Ministry of Railways are solved a problem of passenger in traveling time. Indian rail announcement a high-speed train (talgo, bullet train), water vending machine, any emergency to contact no. and social media. These things feel to gape a relationship in people and government.

Last 5 year, Indian logistics are hiking a ranking of world map. New government is take new policy and technology about logistics growth. This research is show in Seaports highly developed in near future.

New Age people are like a good Governance, new Technology, and Digitization of service. Transportation is one of the most important factor for in logistics. Deployment Using technology and digitization of various process in logistics transportation can be improved as per the reputation. However, good governance is also a very important factor to improve transportation system.

Logistics involves a lot of aspects. As per the above-mentioned data logistics involves availability, customer services and supply chain visibility. With the improvement in technology all of this has become more effective. Like in all kinds of services customer service is also considered the most important aspect for growth in logistics.

Logistics doesn't only involve internal transfer of goods and services. Many of the goods and services and imported to India and the products from India are also transported outside of India. Sea ports by far are the most used means of transportation for logistics. The new GST bill passed in India a few months back has made logistics easy. The obvious reason being the goods are taxed only once all over India. In the past, taxes had to paid to all the states in India where the goods were sold.

5.3 Recommendation and Suggestion:

This research only cover some components of infrastructure and their impact and contribution of transportation. But there can be more components that are not covered by this research. So, in depth research covering all the aspects and also taking into consideration more respondents will give a better picture of the transportation and logistics system in India.

First, I would like to disclose that my independent study is quite useful for the MBA student because they can use this research methodology as a platform their research on the contribution of make in India in Indian transportation development more deeply. It is worthwhile for the MBA and PH. D student because they can understand the research methodology and how make in India or any program which is related with the economy affected their economy in negotiable way. We are still learnt in our International MBA program these things how evaluate any country logistics development by using a survey based research methodology and make a good decision. So, it's make a good and appropriate thing for helping in your research to understand the method of research.

Despite this research has only covered certain factor under make in India contribution for Indian economy development. I would like to recommend for these specific programs make in India, its overall is correct things but they must have need to more promote their program in India as well as in world because it's a big platform for the all-over business and economy development factor. Its program running by our honorable present Prime Minister Mr. Narendra Modi so it is must to go ahead like this by other government party in future. Make in India provided a big platform for the whole world to invite them to contribute or stable in India

for his own effort and make in India promise that we will provide them to a big and equitable platform. So it’s try to build up a big platform and giving your whole effort to promote the make in India program for all sector as well as Indian transportation deployment.

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Eifficency of Transportation in Indian Logistics System

QUESTIONS RESPONSES

Efficiency of Transportation in Indian Logistics

This is a survey to understand the importance of various means of transportation in the Indian Logistics system

Occupation

- ○ Government employee
- ○ Public
- ○ Student
- ○ Other

Which is the most important mode of transportation in Indian Logistics? *

- ○ Airports
- ○ Sea Ports
- ○ Railways
- ○ Road and highways

Which of these means of transportation do you think is important for the development *

- ☐ Airports
- ☐ Sea ports
- ☐ Railways
- ☐ Road and Highways

Eifficency of Transportation in Indian Logistics System

QUESTIONS RESPONSES

5. Expense

6. Customer service

7. Supply chain visibility

Which mode helps in distribution of raw material and agricultural product in industrial *

- Airports
- Sea ports
- Railways
- Road and Highways

Which mode helps in export-import in logistics system? *

- Airports
- Sea ports
- Railways
- Road and highways

Which mode contributes the highest GDP in India's economy in your opinion? *

- Airports
- Ports
- Railways
- Road and highways

Eifficency of Transportation in Indian Logistics System

QUESTIONS RESPONSES

- Road and highways

Which is the most secure mode in Indian Transportation according to you? *

- Airports
- Sea ports
- Railways
- Road and higlyways

What impact do you think will the new GST bill have on the logistics systems in India *

- Positive
- Negative

Which transportation mode generates more job opportunity? *

- Airports
- Sea ports
- Railways
- Road and highways

In your opinion, how we can improve transportation system? *

- 100% FDI
- Awareness
- Technology and digitization

Eifficency of Transportation in Indian Logistics System

QUESTIONS RESPONSES

- Railways
- Road and highways

Which transportation mode has improved in the last 5 years? *

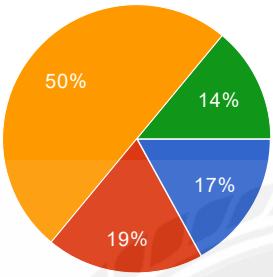
- Airports
- Sea ports
- Railways
- Road and highways

101 responses

View all responses Publish analytics

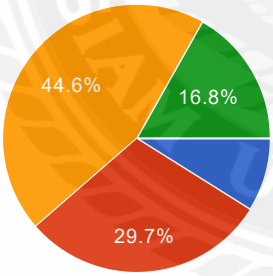
Summary

Occupation



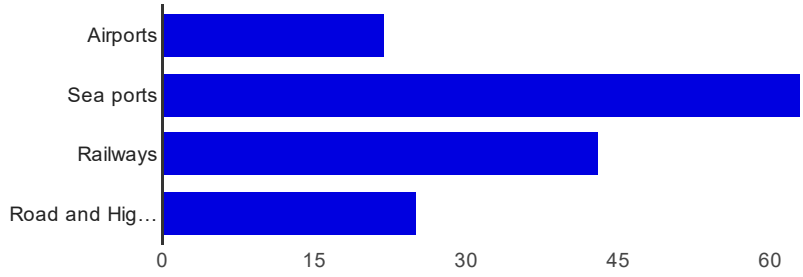
Government employee	**17**	17%
Public	**19**	19%
Student	**50**	50%
Other	**14**	14%

Which is the most important mode of transportation in Indian Logistics?

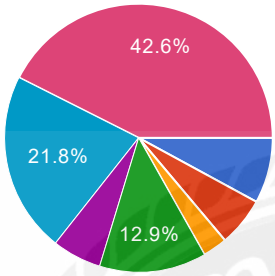


Airports	**9**	8.9%
Sea Ports	**30**	29.7%
Railways	**45**	44.6%
Road and highways	**17**	16.8%

Which of these means of transportation do you think is important for the development of Logistics in India?

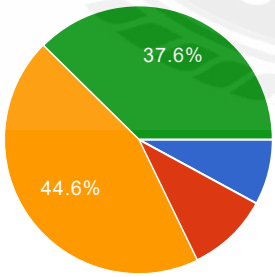


In your opinion, which of these areas are most important for transportation logistics to grow?



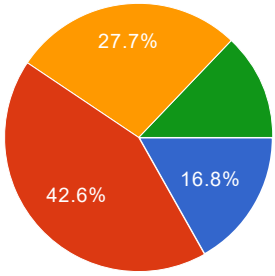
Reliability	**8**	7.9%
Availability	**6**	5.9%
Transit	**3**	3%
On-time	**13**	12.9%
Expense	**6**	5.9%
Customer service	**22**	21.8%
Supply chain visibility	**43**	42.6%

Which mode helps in distribution of raw material and agricultural product in industrial sector?



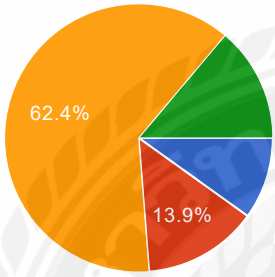
Airports	**8**	7.9%
Sea ports	**10**	9.9%
Railways	**45**	44.6%
Road and Highways	**38**	37.6%

Which mode helps in export-import in logistics system?



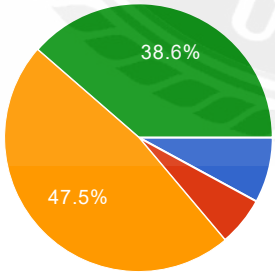
Airports	**17**	16.8%
Sea ports	**43**	42.6%
Railways	**28**	27.7%
Road and highways	**13**	12.9%

Which mode contributes the highest GDP in India's economy in your opinion?



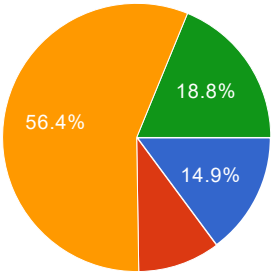
Airports	**10**	9.9%
Ports	**14**	13.9%
Railways	**63**	62.4%
Road and highways	**14**	13.9%

Which mode are easily available in Indian transportation?



Airports	**8**	7.9%
Sea ports	**6**	5.9%
Railways	**48**	47.5%
Road and highways	**39**	38.6%

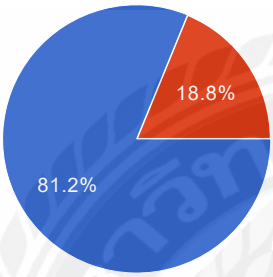
Which is the most secure mode in Indian Transportation according to you?



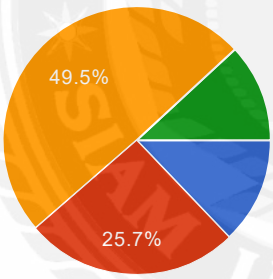
Sea ports	**10**	9.9%
Railways	**57**	56.4%
Road and higlyways	**19**	18.8%

What impact do you think will the new GST bill have on the logistics systems in India

Positive	**82**	81.2%
Negative	**19**	18.8%

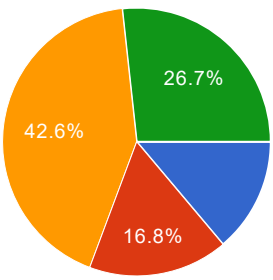


Which transportation mode generates more job opportunity?



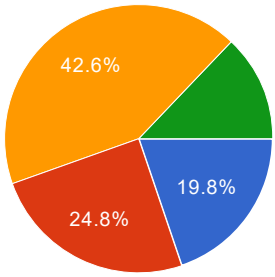
Airports	**13**	12.9%
Sea ports	**26**	25.7%
Railways	**50**	49.5%
Road and highways	**12**	11.9%

In your opinion, how we can improve transportation system?



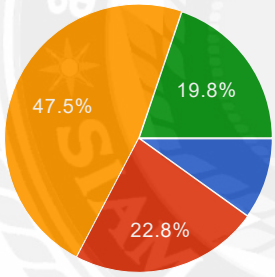
100% FDI	**14**	13.9%
Awareness	**17**	16.8%
Technology and digitization	**43**	42.6%
Good governance	**27**	26.7%

Which means of transportation has better prospect in the near future?



Airports	**20**	19.8%
Sea ports	**25**	24.8%
Railways	**43**	42.6%
Road and highways	**13**	12.9%

Which transportation mode has improved in the last 5 years?



Airports	**10**	9.9%
Sea ports	**23**	22.8%
Railways	**48**	47.5%
Road and highways	**20**	19.8%

Number of daily responses