

Heavy containerised trucks creating pollution in transport of cars

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Abstract

This objective of study is intended to find the changing perception of general public on heavy containerized type of trucks specially used for transport of passenger cars in polluting the environment. This study will help logistics companies involved in shipment of goods through heavy containerized trucks to decide upon steps to be taken care for fast, safe and secure movement of goods alongside adhering to the pollution norms, so that the growth of these companies keeps on improving. Research conducted by me is descriptive in nature. Descriptive research has helped in developing the concept of established priorities, to divulge adequate information which helps in decision making and thus essential for making the study a success.

The operations of many transport companies like Maersk, TRP Logistics Pvt. Ltd., BLR Logistics (I) Ltd., Reliable Cargo Movers & Packers and Rio Logistics Pvt. Ltd. etc. should adopt a better strategy for faster movement of cargo, reducing turnaround time and simultaneously satisfying the public and the government on environmental degradation issues. Best strategy will be to cover all areas like reducing idling time, better truck driving, faster product movement, quality deliveries in terms of reliability and of course reduction in exhaust gases harmful for environment. Once the conservative thought would diminish, definitely the transport sector will grow with leaps and bounds to ultimately benefit all stakeholders.

Keywords: Logistics, Transport, Environment, Pollution, Reliability, Driving, Defense.

Introduction

Transport Industry Profile: Road transport means commutation of goods and personnel from one place to the other on roads. Road is a route between two destinations, which has been either paved or worked on to enable transportation by way of motorised and non-motorised carriages. The advantages of road transport in comparison to other means of transport are many, resulting in it being generally preferred mode. The investment required in road transport is very less compared to other modes of transport such as railways and air transport. The cost of construction, operating cost and maintaining of roads is cheaper than that of laying new railway lines.

Road transport system in India is having exceptional importance in economic development of the country. Road Transport can open up rural and remote areas of the country unreachable normally. In India various places still remain unconnected through railways, airways or water way like the upper reaches of Uttarakhand, Himachal Pradesh, West Bengal and North east. Under these circumstances road transport can easily access such remote areas where other means cannot penetrate. Road transport in India is contributing significantly towards the growth of gross domestic product of the country. In comparison to railways, road transport is more convenient, quicker and more adjustable.¹ For short distance travel, motor is the ideal mode of transport as it can collect and drop passenger and goods at any place. Road transport can also give door to door service which railways cannot even think of, as the consignee has to take deliveries from nearest railway station making it inconvenient at times. Road transport can become complementary to railway and other modes of transport. It is only through feeder

roads, railways can collect its passengers and goods easily. Railways cannot connect villages of the country without such roads, however road transport can easily connect railway stations with distant villages. Road transport is very much helpful to agricultural sector of the country as it provides easy and quick facilities for the marketing of agricultural produce especially fast perishable products like vegetables, fruits etc. It's the road transport which can help the farmers to bring their outputs to Mandis and also farm inputs like seeds etc. to the field. Road transport is very important for the industrial development of the country. Establishments of modern and heavy industries has become possible due to the construction of well-connected network of roads in the country. The North – South corridor and East – West Link Road are an example of increasing network of Roads. Road transport is generating huge number of employment in the country. Construction of roads is creating a great scope for employment as it can create a good number of man-days for ordinary labour. Road transport is important with reference to the defense sector too of the country. A sound defense mechanism can be maintained with the well-developed network of roads in border areas of the country. Construction of roads in inaccessible areas enables the defense force of the country to take control of such areas.

On the green initiatives front the ministry of road transport and highways² has recommended a policy “Vehicle Fleet modernization program”, wherein replacement of old, heavy commercial vehicles contributing maximum vehicular pollution will receive financial benefits like scrap value of discarded vehicle along with other incentives from OEMs apart from the incentives from government.

The big drivers of global business have major influence towards commercial vehicle business.³

Several global scale trends related to climate protection, resources competition, social change and demographic shifts in particular are fundamentally changing the rules of competition for the truck industry. The concern about climate change coupled with environmental regulation has led to a new commitment to increase fuel efficiency and reduce emissions.

Passenger Car Sector

The Indian car industry has undergone a tremendous transformation in the last few years. Not only has the number of models of a particular brand has increased, but the volumes are also growing. The car manufacturers have to tap new markets, which mean

they have to transport their sleek products to urban, semi-urban and rural destinations, most of which did not have existing road infrastructure. Therefore, the need to efficiently move passenger vehicles across the country, and onwards to ports for exports, has to be over-emphasized. Furthermore, with higher investment required to improve road infrastructure in order to sustain growth over the next upcoming decade, it is going to be imperative to strictly enforce truck - size and weight regulations to make optimum use of road investment. According to industry experts, 'Over laden axles on freeways would be detrimental to the pavements and necessitate significantly large maintenance budgets -- something that is clearly avoidable'.



Fig. 1

At present, passenger cars are mainly transported by car-carriers. These are truck chassis, converted into double-deckers body with arrangement to carry five-six cars for general hatchback category. With the booming car market, these carriers have been revving up handsome profits for their owners. However, the safety aspect of these carriers is called to question. According to transport experts, carriers tend to lose balance due to the excess top-deck (where three – four cars are loaded) weight as compared to only two – three cars may have been loaded in the lower deck. The arrangement, these experts feel, should be the other way round. The loading pattern, and the resulting accidents leads to damage of nearly 1,000 cars every year in accidents, leading to a loss of around Rs. 40 crores annually.⁴

In this context The Road Ministry, Government of India has issued a notification for implementing Bharat Standard VI from 01 April 2020 on all vehicles. This standard promotes development of new engines which comply with limits on emission of Nitrogen Oxides (NO_x) and particulates. Use of alternative power train technologies have also been recommended in the standards. These alternative technologies shall use natural gas, hybrid drives or fuel cells. In order to avoid ban on heavy trucks due to persistent air pollution in major cities like that happened in New Delhi where diesel trucks more than 15 years old have been banned, the truck manufacturer's country wide has adopted manufacturing BS VI standard engines. Later on in the main content there is a comparison shown for BS III

and BS VI standards. This has been hotly debated when the Supreme Court ordered for complete ban on sale of BS III standard vehicles with effect from 01 April 2017.⁵

Vehicle safety, quality and its minimum handling capacity, along with transportation costs are key issues for deciding about utilizing containerization. The introduction of larger and faster Trailer trucks has made containerized shipment an economic viable alternative. Furthermore, since standard containers on trailers adhere to Central Motor Vehicle Rules, 1989 and restrictions like height, width etc, therefore car transport will now conform to the specifications. Capt. Rajakrishnan said Maruti (transports cars through car-carriers and trains) has shown a lot of interest in the product, which will be leased out to them. Similarly Honda, Mitsubishi and Ford are positive about the product. Industry experts feel that from a logistics services provider's perspective, the ability to utilize the existing freight containers to transport cars within the country will go a long way towards developing incremental business opportunities cars as well eliminating the high capital needs for customized transporters. Furthermore, the capability of maximum utilization of transportation assets by supply-chain links would improve performance as well as reduce costs, he said.

"On the export side, the ability to rapidly move cars into foreign markets using conventional liner shipping sources without waiting to aggregate larger lots for specialized car carriers will greatly assist the

ability to reduce order-cycle times as well as current inventory carrying costs”, said Capt. Rajakrishnan.

Environment literally means surroundings and everything that affect an organism during its lifetime. In another words “Environment is sum total of water, air and land around us, their interrelation ship among themselves and with the human being, plants and animals and property”. Environmental studies by NEERI etc. opens an approach towards understanding of earth and the impact of human activities on environment. In order to cater to the increasing demand there is huge enlargement of human activity. After 1991 which saw LPG, to achieve economic progress, India too did not bother about environment and went ahead with cutting of trees, changing land usage, shrinking water bodies for expanding city dwellings and of course increasing the traffic movement. Air pollution is one such type of creation of increased Human activity that refers to contamination of air irrespective of outdoor or indoors activity. A physical, biological or chemical change in the atmosphere can be termed as air pollution. General perception is that pollution occurs due to release of harmful gases, dust, and smoke into atmosphere, making it difficult for plants, animals and humans to breathe clean air.

With the progress and development in the country, air pollution increase came along, which can be inside homes from chul has, commercial buildings having huge air conditioners or even the countryside. Consequently there has been an increase in various

diseases caused by air pollution varying from breathing problem to lung cancer and finally incremental death rate. Air pollution not only affect people but also damages the whole ecosystem in which living things are harmed to such an extent that cause extinction in some cases. Air pollution has reached such an alarming stage that it affects the earth's atmosphere and allow more harmful radiation from the sun. Consequently, polluted atmosphere around earth has become an insulator which is preventing heat from escaping back. That is why there is a global rise in temperature which scientists refer to as “global warming”. This rise in temperature affects world food supply and increasing sea level, increasing probability of tropical diseases. Presently earth is the only planet in the universe which is suitable for life. Air and water is needed for all living being's survival. Earth provides these essentials resources and man uses them. The over usage in long term has led to increasing pollution problems that is hazardous.

Many industries have come up owing to urbanization. Furthermore, there is an ever increasing demand of vehicles as means of commutation which are using fuels like petrol and diesel. Heavy amount of carbon monoxide, hydrocarbon, sulfur-dioxide and many more greenhouse gases are emitted in the air. The poisonous gases, chemicals and dust released into the air fall back on earth as acid rain harming crops and life. This has caused various harmful diseases.



Fig. 2

The Supreme Court authorized Environment Pollution Control Authority (EPCA) in October 2016 and directed vehicle manufacturers that non BS IV will not be registered with effect from 01 April 2017 and gave time to these manufacturers to dispose off their BS III vehicles before that date. Moreover it was also expected that these vehicle manufacturers will stop producing BS III vehicle henceforth and also upgrade their production line with BS IV standards. An article in the Times of India clearly shows how the vehicle manufacturers flout such directives expecting that the Supreme Court will extend the deadline. They went to the court hoping for relief as they pleaded for allowing sale of BS III vehicles that has already been

manufactured and dispatched to dealers. While their plea received support from central government, SC was in no mood to relent and it pressed for sale of only BS IV vehicles which are less polluting and more efficient after 01 April 2017. Top commercial vehicle manufacturers such as Tata motors, Ashok Leyland and Mahindra & Mahindra and two wheeler majors like Hero Motors, Honda and TVS held near junk inventory worth over 12000 crore after Supreme Court disallowed sale and registration of BS III vehicles from April 1, 2017.⁶ These companies also faced wrath from their dealers who complained of inventory holding costs, possible default on bank loans taken to buy stocks and left with non-standard inventory.

Table 1: BS III inventory of Top makers as on March 20, 2017

Hitting Dead End			
Commercial Vehicles:		Two-Wheelers:	
Tata Motors	45774	Hero Motors	297577
M&M	20824	Honda	225599
Ashok Leyland	17449	TVS	78891
Total	96724	Total	671305
Four Wheelers (Total)	16198	Three Wheelers (Total)	40048

Another article on the same topic covered the news about how the BS III inventory was disposed off by the dealers in Bhopal. After the SC announced ban on selling BS III vehicles from April 1, the dealers were in a spot regarding existing stock.⁷ It was not logical for them to wait for decision of manufacturers, so they announced discounts unilaterally according to affordability. Later the discounts were increased as manufacturers also chipped in to help clear off the stocks. Dealers for some two wheelers announced discount up to Rs. 25000/- by 30th March 2017, but on witnessing massive crowds thronging their showrooms in Bhopal in a bid to cash in on heavy discounts being offered on BS III vehicles, they started reducing the discounts. Finally on 31st they offered only Rs. 5000/-. A dealer had to close down the showroom on the last day as its stocks of BSIII exhausted and people were not ready to understand that the discount was only meant for these vehicles and not on new standard vehicles. A dealer said “Nobody was ready to listen; in view of the scenario we deemed it better to close the outlet on 31st as we had exhausted entire stock of BSIII vehicles on the previous day itself”.

BS or Bharat Standard for vehicles and the fuel used by them was formulated based on the emissions of vehicles and filtration process used to convert oil extracted from oil wells and converted into various petroleum products including the byproducts like Bitumen etc. These standards were similar to European Standards, Euro I, Euro II etc. BS III came into force in 2005 when two stroke engines were phased out as they were considered to be the most polluting engines and

emitted all types of harmful gases. In 2010, BS IV was introduced and it took 7 years to finally implement it across the country that too due to directives of the Supreme Court. BS IV standards tightened further emissions limits of NO_x and hydrocarbons. Under this standard auto manufacturers have to fit an “evaporative emission control unit” which reduces the amount of fuel that evaporates from a parked vehicle. This is all an attempt to keep Air Pollution under check.

Materials and Methods

Cum Results

Study of Data Related to Perception of Public with Respect to Transport Sector: For this study, a well-defined structured questionnaire has been prepared. For validating the questionnaire, reliability and validity of the items was examined as per explanation ahead. For

reliability this instrument has scored chronbach alpha value .65 and it is found that instrument is reliable enough. For validity two expert has examined this questionnaire and gave their nod for continuing this instrument.

Data has collected in offline mode, 50 candidates has filled this questionnaire after collecting the data sorting and tabulation of data is done in MS Excel and used for analysis purpose.

Data analysis has been compiled in the following table based on questions asked on various variables like preference of transport type, safety and security of transport type and engine compliances etc.

Table 2: Demographics of the respondents

S. No	Criteria	Occupation	Gender	Percentage
1	Age (20 – 25)	Students	Male Female	15% 5%
2	Age (26 – 35)	Service / Self employed	Male Female	35% 15%
3	Age (36 – 45)	Business / Top level Executives	Male Female	20% 10%

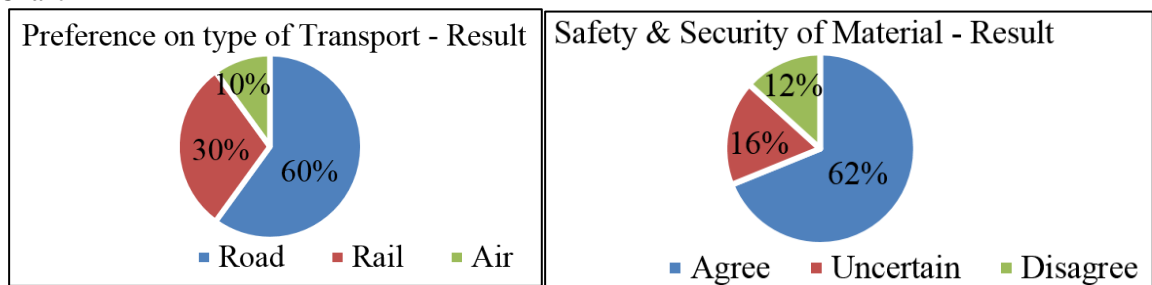
Total 100%

Note: Pie Charts and Graphs are made for the first two options only shown in the table as the third option is notional in nature.

Table 3

S. No.	Preference on type of Transport	Result	Safety & Security of Material	Result	Pricing of Transport affordable	Result
1	Road	60%	Agree	62%	Road	58%
2	Rail	30%	Uncertain	16%	Rail	24%
3	Air	10%	Disagree	12%	Air	18%
	Total	100%	Total	100%	Total	100%
Result	It is clear that maximum people like Road Transport to send their household goods to the place they are shifting etc		Some people are who not satisfied (disagree) and are uncertain with the safety issue comprise of a major chunk of 28% and cannot be ignored. Sector should improve its safety standards to gain confidence of these people		Road Transport should keep their prices affordable in order to gain confidence of public perception	

Pie Charts given below is based on Result arrived in above table (first two options only): -

Pie Chart 1**Table 4**

S. No.	Knowledge of BS Standards	Result	Heavy Containerized trucks Environment friendly	Result	Heavy Containerized trucks fuel efficient	Result
1	Known	48%	Agree	36%	Agree	18%
2	Uncertain	16%	Uncertain	50%	Uncertain	30%
3	Not known	36%	Disagree	4%	Disagree	52%
	Total	100%	Total	100%	Total	100%
Result	People should be made aware about the standards, only then we will be able to analyse the problem being raised in this assignment properly and justifiably. Government has to bring out details of these standards through advertisements and seminars and workshops in which awareness is increased over a long period		Since almost 54 % are either uncertain or do not agree that Truck engines are safe for environment, it seems that the general public has not been made aware of their compliances by either the manufacturers or the government. So people will carry general perception that heavy containerized trucks are bad for environment		General perception public carries about containerized trucks is that they are not fuel efficient. This perception must also be changed from the manufacturer's side. The old school of thought in this regard must change and it must be accepted that these days as power of trucks are increasing, their fuel consumption per kilometer is decreasing	

Pie Charts given below is based on Result arrived in above table (first two options only):

Pie Chart 2

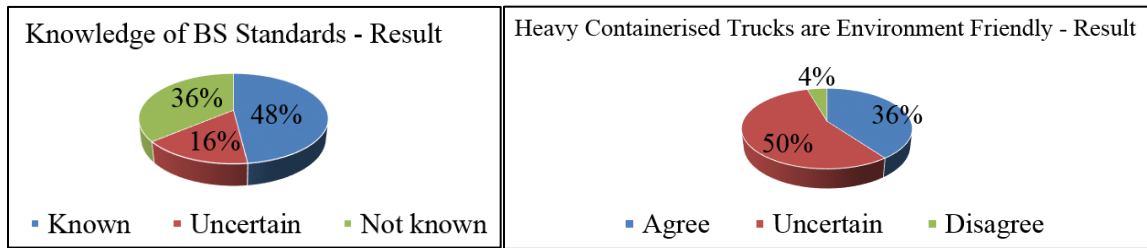


Table 5

S. No.	Heavy Containerized trucks are need of future	Result	Passenger Cars transport through Heavy Containerized trucks	Result	Passenger Cars transport through Railways	Result
1	Agree	82%	Agree	46%	Agree	25%
2	Uncertain	10%	Uncertain	30%	Uncertain	26%
3	Disagree	8%	Disagree	24%	Disagree	49%
	Total	100%	Total	100%	Total	100%
Result	Containerized trucks are in demand		It was clear that maximum of the respondents have told that passenger cars transport is not economical through these type of trucks as they can hardly hold 6 to 10 hatchback type of cars, 4 to 6 sedan type and 4 to 6 SUVs		From the total of 50 respondents 10% has given the response as strongly agree and 14% have given agree with rail transport being suitable mode of transporting passenger cars. It seems that people understand that railways prefer passenger trains over freight trains and therefore they are slow in reaching destinations. Moreover Rail network are not covered up to several dealers destination	

Graphs given below is based on Result arrived in above table (first two options only):

Graph 1

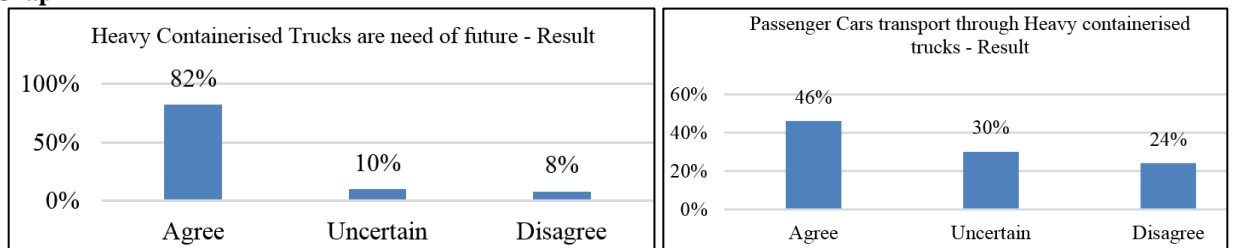
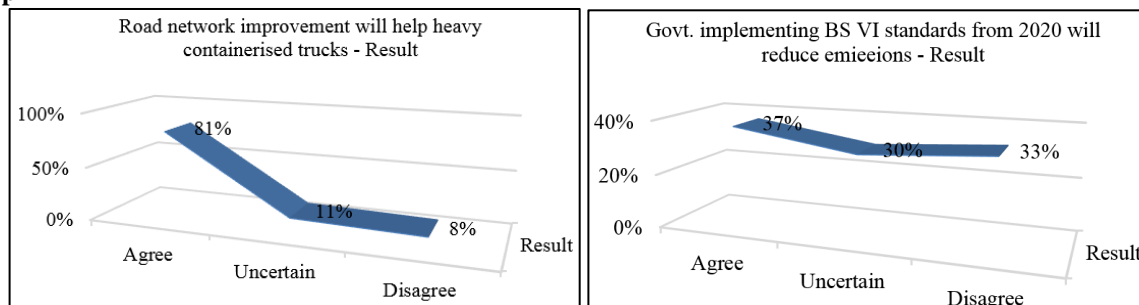


Table 6

S. No.	Road network improvement will help Heavy Containerized trucks	Result	Government implementing BS VI standards from 2020 will reduce harmful emissions	Result	Passenger Cars transport through Waterways	Result
1	Agree	81%	Agree	37%	Agree	13%
2	Uncertain	11%	Uncertain	30%	Uncertain	47%
3	Disagree	8%	Disagree	33%	Disagree	40%
	Total	100%	Total	100%	Total	100%
Result	Once the Road network and quality of Roads increase, the fuel efficiency of heavy trucks will automatically improve, this will also reduce their emissions and help the cities to be rid of air pollution		Government has to sensitize the public about Bharat Standards which apply on emission control of vehicles so the people can report of non-compliance		Although the public has not agreed with the new concept but once its utility, safety, economical pricing and environmental friendly transport advantages become popular, this will be the most preferred type of transport.	

Graphs given below is based on Result arrived in above table (first two options only):

Graph 2



Conclusion

1. The faith of people in road transport should be improved by the sector.
2. Road Transport industry should bring down the prices of transportation and also issue promotional material comparing their prices with rail and air transport.
3. Government should advertise environmental standards for road vehicles so that when someone is seen running engines emitting gases, should be immediately penalized.
4. Truck engines these days have become fuel efficient and this fact should be brought to the notice of courts and general public by manufacturers. BS VI is an example of fuel efficient engines.
5. Heavy containerized trucks should be directly assembled with light weight material to make them more fuel efficient as well as research should be encouraged to reduce emissions.
6. Containerized trucks should be preferred for transport of goods.
7. Design changes to be incorporated for accommodating more passenger cars in a containerized truck so that it becomes less costly, more efficient transportation as well as reaching destinations where there is no rail or air connectivity.
8. Government should support truck manufacturers in research work to bring out fuel efficient and environmental friendly engines.
9. Courts should take a lenient view on environmental issues for road transport as containerized trucks are the need of the hour and a major contributor for the economic progress of the country.

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