

Parameter Identification for Expense Cost of Third Party Logistics Service Provider in Unorganized Urban India

Nishant Jain^{1*} Anshul Gangele² Neeraj Kumar³

¹ Research Scholar, Department of Mechanical Engineering, Suresh Gyan Vihar University, Jaipur, Rajasthan, India

^{2,3} Professor, Department of Mechanical Engineering, Suresh Gyan Vihar University, Jaipur, Rajasthan, India

Abstract – The truck Industry working in the Third Party Logistics service Provider in Unorganized urban India has been making losses from last decade. To reduce the losses and bring the Industry into Profit various Expense Cost Parameter has been identified and categories as Fixed cost and Variable cost Parameters. With the help of these parameter the truck owner can easily calculate the freight charges that will make the business profitable in the long term.

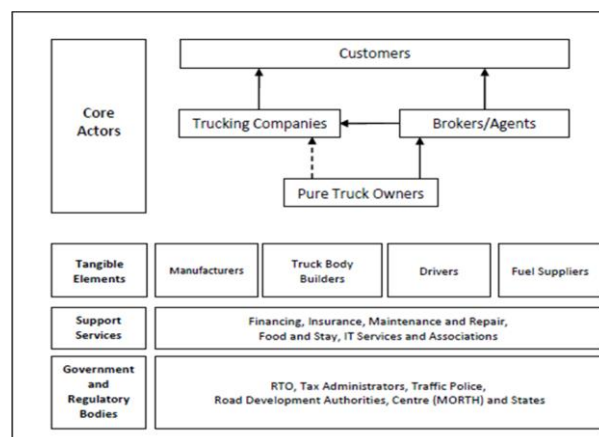
Keywords: Third Party Logistics service Provider, Expense Cost Parameter, Freight Charges

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INTRODUCTION

Though emerging as a dominant mode the road goods transport sector in India has hardly been able to emerge out of the traditional unorganized framework over a period of time. It has been a widespread feeling that the market structure of the industry in terms of the supply of services is very highly competitive. Customers move their goods almost entirely through third party logistics service providers of unorganized sector, rather than through their own fleet. This makes the trucking industry commercially very dynamic. Given the dominance of small operators, it is natural to expect a competitive regime to prevail[1].

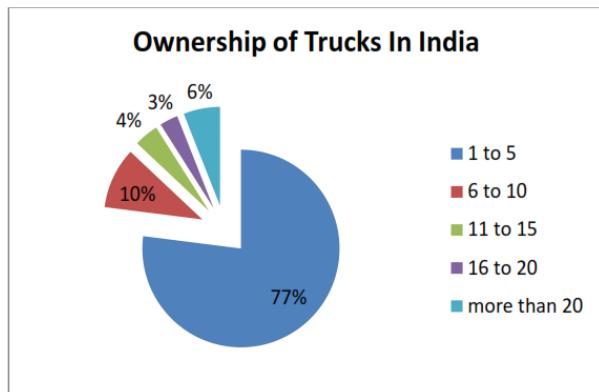
A report on “Trucking Sector in India” published by IIM AHMEDABAD defined the structure of the trucking Industry as having multiple actors (Figure 1). The core actors directly serving the customers are the trucking company and the brokers/agents. They are supported by the pure truck owners. The tangible elements for trucking: manufacturers, truck body builders, drivers and fuel suppliers support the core set of actors. Further an ecosystem is established between the core set of actors and support services, government and regulatory bodies.



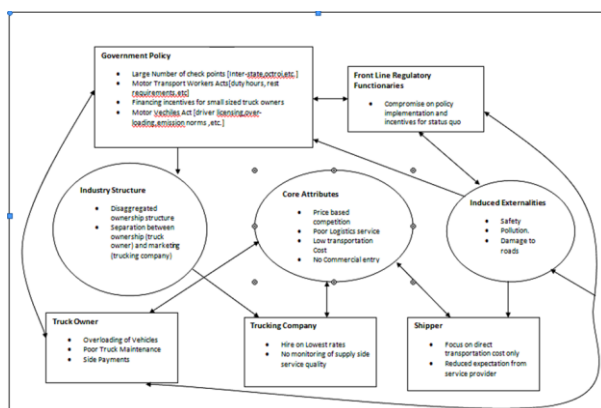
The Third Party Logistics service provider in unorganized urban India has been dominated by a fairly large proportion of the trucking industry (in terms of supply) has traditionally been the result of lower capital requirements, ease of obtaining truck driving licenses and permits, low mental skills as compared to physical abilities and easy availability of freight[2]. The fleet is primarily used for general goods transportation with the operators working on the basis of a hub and spoke distribution model.

As a consequence highly fragmented truck ownership is sustained. 77% of the truck owners surveyed have up to 5 trucks. The percentage distribution of truck owners owning between 6 and 10 is 10%, 11 and 15 is 4%, 16 and 20 is 3% and more than 20 trucks is 6%. The above analysis confirms the fact that the small owners continue to dominate the sector. It is reported that many of

these small operators are attached to the transport companies.



The Third Party Logistics service provider in unorganized urban India is characterized by cut throat competition given the large number of truck owners. Market rates tend to get deflated with Every Fourth Truck Is Lying Idle [3] without load, because of which in spite of laws and regulations, the norm of violation supports and is supported by the small truck owner. Figure 3 describes this phenomenon as the 'Unholy Equilibrium in the Road Transportation Sector'.



Due to intense competition in the market for road goods services, freight rates are generally negotiable. There is no state at present which has fixed the freight rates. These are determined by the market forces of demand and supply and vary with physical terrain, road surface and volume of traffic in the regions, etc. Also as the Truck owner in the unorganized sector are not very educated they don't use any scientific method for calculation of freight charges because of which the in the long term truck owners get into debt [4].

OBJECTIVES

1. To identify the expense cost parameters for freight calculation so as to make the business sustainable in the long term
2. Define the Fixed cost Parameter and Variable cost Parameter.

METHODOLOGY

The existing literature dealing with the cost was perceived necessary to look at in the beginning. Given the enormity of the problem at hand, it was accordingly decided to undertake a limited but focused review, which would keep in view the need for identification of expense cost parameters in third Party Logistics service provider in unorganized sector of urban India [5]. For this interview of focus group was conducted of truck owners from various location of the country the list is given in the table with sample size as below :

Table 1

State of Registration with Sample Size

S. No.	State Name	No. Of Truck Owners
1	Madhya Pradesh	29
2	Uttar Pradesh	15
3	Delhi	19
4	Haryana	16
5	Bihar	08
6	West Bengal	05
7	Telangana	07
8	Andhra Pradesh	11
9	Rajasthan	26
10	Gujarat	16

The Parameter identified from the interview were as follows

1. **Cost Of Purchase:** The Amount Paid to Purchase the Truck. This cost can be as a full payment of the cost of the truck or the truck can be purchased on finance by part payment of about 10% and rest can be financed by the Bank or NBFC . The rate of Finance varies from 8.5% to 12 % per Annam.
2. **Additional Cost Post Purchase:** Most of The truck are purchased as chassis and body is to build on that chassis for it to be used commercially. The body types which are built can be Full Body that is the body is built up to the full height of the cabin, Half Body which is the body is built to the half size of that of the cabin, Flat bed to carry containers, etc. This building of body cost is additional to the cost along with this the owner has to pay the National Permit Cost, has to purchase ropes and tripals / Covers for the truck, pay for the insurance Premium.
3. **Purchase Type:** The truck purchased can be a New or a second hand Purchase. As the person involved in business of third party logistics in unorganized sector of

urban India are not very financially well to do and find it difficult to purchase a new truck the cost of which varies from around Rs 3000000 to 3900000 so they purchase truck from second hand market.

4. Insurance Premium Value: The Insurance Premium to be paid by the Truck Owner per Year. This is a must pay expense irrespective of whether the truck is in business or not. The cost of premium is calculated on the model and types of truck with the older the model the less is the cost. Also a bonus known as No Claim bonus is given by insurance companies if there is no claim of any insurance by the owner against any accident i.e. the truck has not faced any accident during the last year. The premium of insurance has two parts in its first is known as the First Party Insurance which covers the losses caused by accident to the truck and there is a Third Party Insurance premium amount that covers the losses caused to the person who meets with the accident with the truck.
5. Current Insurance Value: This is the value on which the first party Premium of truck is calculated which is based on deduction of depreciation of the vehicle over the years i.e. 10% per year from the day of purchase and restricted to 50% of bill value of Purchase.
6. Current Market Value: This is the actual value of the truck at which one can sell the truck in the open market. This value depends on many factors such as Model of the Truck i.e. year of Manufacturing of the Truck, condition of Engine, Condition of Tyres, Truck Body Condition, load carrying capacity of the truck, etc.
7. No. of Tires: Each truck has 2 tires in the Front and Each Axle in the rear has 4 tires with Multi Axle trucks. So Trucks that have 2 Rear Axle total tires are 10 and has a capacity of carrying 19 tons of load within permissible limit, similarly for a truck with 3 rear axle it has 14 tires in all and has a permissible load carrying capacity of 29 tons. In between this commercial Vehicle manufacturer has introduced a truck with 2 rear axle and an additional support axle in between the front and rear axles which can be activated to carry additional load making it a 12 wheel truck with a load carrying capacity of 24 tons.
8. Type of Loading: Each truck when loaded within the permissible load limit than it is defined as under load and if the trucks carry load beyond the permissible limit than that is known as Over Loading.

9. Type of Use: Trucks are used to transport loads from point to point. Depending on the distance between the loading and unloading point use of the trucks has been classified as

- A. Local: The Trucks which are used for transportation of Load within a periphery of 50 Kms.
- B. Short Distance: The Trucks which are used for transportation of Load within a periphery of 100 Kms.
- C. Long Distance: The Trucks which are used for transportation of Load for distance more than 100 Kms.

10. Route On Which Business is carried out: This parameter identifies the route on which the truck carries out the business. This parameter is important as from this expensive like toll tax, state border tax, delay due to traffic, availability of load from other side, etc can be known which add to the cost of transportation.

11. Diesel Consumption Per KM: This is the major and direct cost.

12. Per Day Allowance To Driver / Cleaner: This is the amount which can be categorized under travelling allowance to be given to the Staff of the truck while they are on the travel.

13. Salary to Driver / Cleaner: Salary given to the staff irrespective of whether the truck is in working condition or not.

14. Permit Type: Each Truck requires Permit for executing business which can be National Permit which allows the truck to work throughout the country, this Permit is given if applied with a permit fee for 12 years to a new truck post which the truck can only work for within the state in which it has been registered. State Permit is automatically issued to the truck with registration and Permit Fee on Quarterly basis / Yearly basis / Life Time Tax is to be paid by the truck owner as per the policy of the state.

15. Accident Cost: This is the cost of repair that is to be paid by the Truck Owner when a truck meets an Accident.

Though the Truck is insured with first Party Insurance in which the insurance company covers the losses but as with time there is a depreciation of machinery takes place and also there are parts like parts made out of Plastics and fiber are not full

covered so only a part of total bill is paid as claim amount by the Insurance company and the difference of amount of repairs is to be paid by the truck owner.

16. Average Daily Travel of Trucks: This provides with Kilometers that a truck travels on an average per day when in business. Having this information helps in identifying the time cost of the capital.
 17. Number of Days for which Truck is in working: Transport industry has not being doing from last 10 years. The result of which has been that the non-organized sector which do not have long term contract and work on day in day out contract basis don't get load for transport throughout the year and this parameter identifies the number of days in a year that the truck is in business.
 18. Average Travel of Truck without Load: Trucks do not get the entire load from one place or from where they are positioned after unloading. The trucks have to travel to the warehouses which may be located in the outscored of the city or even in other city/town. While traveling to these places the truck have to travel without any load and are not paid for this trip/travel.
 19. Average Load Carried by Truck: This parameter identifies the load that the truck carries in trip on an average in under load / Over Load Condition. This parameter effects the overall maintenance cycle of the truck as more ware and tier take place when overloaded and vice versa.
 20. Toll Tax: As the National / State highways has developed in the country, the trucks cost of maintenance has gone down and traffic movement on the highways has improved but this has resulted in an attional cost that the truck owner has to pay to use these highways in form of Toll Taxes.
- The Rates of these toll taxes are different for state and National Highways for each state.
21. Transaction Costs (Loading / Unloading / Commission): The Unorganized sector largely depends on local commission agents of the city / place where there truck is for loads, as they are the means of contact between the trader / warehouse manager and trucker. To provide this service the Commission Agent charges a Fee than can range from Rs 300 to Rs 2000 depending on the freight charges and goods. The Truck Owner has to pay the loading and Unloading charges for the goods that is loaded on the truck which varies from load to load i.e. for

grains it may be Rs 8-10 per 100 Kgs to Rs 50-75 per 100 Kgs for goods like Tendu leafs.

22. Police Expense: While on road the truck has to pass various borders of district / state which belong to different judistrictaion and as there are many laws like there should be 2 drivers, no over loading that can be in terms of permissible weight or permissible height and width,etc and the drivers are not very much educated. Due to which the trucker has to pay bribe to the police so as to continue the journey.
23. Maintenance: Any machinery for its proper working without failure requires maintenance which can be time out maintenance or periodic maintenance. Truck has various parts which require timely maintenance to give optimum output. The following are the main parts and parameters that are required to be maintained on periodic baises:
 - A. Tires: This is the most important part of the truck which directly affect the performance. There are various type of tires that are available to be used in the truck that main classification being Naylon Tires and Radial Tyres. The service life of Radial Tires is about 65000 Kms and that of Naylon Tires is about 40000 Kms.

Nylon Tires are low cost tires as compared to Radial Tires but gives 66% service as compared the Radial tires.

The combination of tire price and tire wear makeup tire costs. Tires are weight sensitive and wear more with more weight. Tire life is independent of weight below 3,500 pounds per tire (Faucett and Associates, 1991). Weights above 3,500 pounds result in a .7 increase in wear for each 1 percent increase in weight.

 - B. Engine Oil, Gear Box Oil and Other Lubricants: For Smooth working of the Engine timely replacement of Engine Oil, Transmission Oil and Other Lubricants is required. Each Commercial Vehicle manufacturer recommended the type of Oil that is to be used and the time in which it is to be replaced but in practical the owner replaces the oils and other lubricants in about 20000 Kms.
 - C. Tyre Greasing: At every 10000 Kms the Tyres are required to be greased that is lubricants are applied so as to reduce the friction within the axle and the other parts of tyres when in motion.

- D. Suspension Maintenance: The Suspension System of the trucks have leaf spring suspension which requires replacement of bushes, central bolt, etc as per the service manual but mostly this is done at an interval of 50000 Kms run.
- E. Body Maintenance: With time and travel the body of the truck requires maintenance after about every 150000 Kms under standard loading conditions, but if the truck is used for overloading goods then the body maintenance will be required in about 80000-100000 Kms of travel.
- F. Fuel Pump Maintenance: The maintenance of Fuel Pump in normal loading condition is required after about every 150000 Kms but if the truck is used for overloading goods then the maintenance will be required in about 30000-40000 Kms of travel.
- G. Clutch Plate Replacement: The maintenance of Clutch Plate in normal loading condition is required after about every 80000 Kms but if the truck is used for overloading goods then the maintenance will be required in about 20000-30000 Kms of travel.
- H. Engine Overhauling: The maintenance Engine in normal loading condition is required after about every 200000-300000 Kms but if the truck is used for overloading goods then the maintenance will be required in about 50000-75000 Kms of travel.
- I. Miscellaneous On Road Maintenance: While on Road the truck may need Maintenance like repair of Tyres, Oil Gauging, minor electrical faults repairs like replacement of bulbs, horn, etc.
24. Return on Investment

It is a specific charge against the capital invested and reflects a needed return for economic justification of investment. In costing out a particular service, the corollary to return on investment (equity capital) is interest charges which are incurred on debt capital. The interest and return on investment reflect the alternative returns that could have been realized by the owner of that capital, whether debt or equity.

25. Depreciation

The concept of depreciation is not what a firm is allowed to take off on its tax forms. Depreciation can be considered either arising from use or time. In most economic engineering it is based on a charge related to time, or the estimated useful life in years. Firm equipment costs, mostly tractors and trailers, are developed by subtracting the salvage value from

the purchase price and dividing this figure by the estimated useful life in years. This results in the amount of depreciation costs that are incurred within a given year.

RESULTS & CONCLUSIONS

From the interview of the truck owners of third Party logistics service providers in unorganized sector of urban India 25 cost parameters has been identified which can be bifurcated into fixed cost Parameter and Variable Cost Parameters for freight cost calculation of trucks which are listed in the table as

Parameter	Fixed Cost	Variable Cost
Cost Of Purchase	X	
Insurance Premium Value	X	
No. of Tyres		X
Type of Loading		X
Type Of Use		X
Fuel Consumption		X
Per Day Allowance To Driver / Cleaner		X
Salary to Driver / Cleaner	X	
Permit Cost	X	
Accident Cost		X
Average Daily Travel of Trucks		X
Number of Days for which Truck is in working		X
Average Travel of Truck without Load		X
Toll Tax		X
Transaction Costs		X
Police Expense		X
Maintenance		X
Return on Investment	X	
Depreciation	X	

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Corresponding Author

Nishant Jain*

Research Scholar, Department of Mechanical Engineering, Suresh Gyan Vihar University, Jaipur, Rajasthan, India