FACTORS AFFECTING THE PERFORMANCE OF JKSRTC

Road transport has a crucial role to play in the economic and social development of a region. In fact, it is a basic infrastructure of economic development .The nation's road transport system is both a major component of the national economy and an important factor in shaping our life style, community development and industrial location patterns. Given the unique geographical features of Jammu and Kashmir State, as a whole and its regions and some in hospitable areas within it, the total connectivity cannot be expected through railways or any other means of transport except the road transport. The Jammu and Kashmir State Road Transport Corporation which came into existence in 1976 with the objective of providing to the public convenient transport system and also provide supportive service to the important sectors of tourism, trade, industry and other government and non-government agencies. The performance of Jammu and Kashmir State Road Transport Corporation evaluated in terms of profits shows a dismal picture .The present study is an attempt to assess the working of Jammu and Kashmir State Road Transport Corporation and identifying the various factors affecting the working of Jammu and Kashmir State Road Transport Corporation and suggesting measures for its improvement. The study reveals that various factors are responsible for the dismal performance of Jammu and Kashmir State Road Transport Corporation.

Introduction

Road Transport provides a vital umbilical cord for economic development and social integration of the country. It links up towns and villages and joins production and distribution centers. It brings together different socio-economic groups of people. Social and economic development of the hilly and remote areas, in particular, is immensely benefited by a well laid out road and road transport network. Given the unique geographical features of this state, as a whole and its regions and some inhospitable areas within it, the total connectivity cannot be expected through railways or any other means of transport except the road transport.

It has been seen throughout the history of development of any nation that a proper, extensive and efficient road transport has played a major role. In various reports and studies brought out by national and international committees of professionals, the importance of having a good, efficient and popular road transport has been duly highlighted as a major contributory

factor to the economic development of a region or a country .Even in the eighteenth century Adam Smith had appreciated the important role of transport. In fact, his theory of division of labour mainly rests on the expansion of markets possible by expansion of transport facilities. A state or a nation cannot proceed on the path of economic progress, unless it has a good system of transport which links up its different parts with one another and further different parts of the nation and the world with it.

The state of Jammu and Kashmir has remained economically backward mainly because of the lack of infrastructural facilities. The infrastructure in the state lacks all the important components like adequate and uninterrupted power supply, proper development of industrial areas, roads and communication within the state and with the rest of the country.

The state due to its geographical features and difficult terrains is primarily dependent on the road transport system. Official data relating to the contribution of various sectors towards State Domestic Product in the State of Jammu and Kashmir also reveals that transport has been the predominant element in the growth of the tertiary sector.

With respect to growth of road transport the state has made great headway as compared to other sectors of the economy. Both private and public sectors have contributed to it. So for as private and public fleet in the state is concerned, the total fleet from 1977-78 to 2018-19 has increased by 7283.24 percent. From 1977-78 to 2018-19 the number of buses/mini buses, trucks, taxies, private cars/ st. wagons, motor cycles / scooters, jeeps, auto rickshaws /tempos, tractors, trailors and others increased by 1466.17 percent, 1477.52 percent, 3724.06 percent, 15602.37 percent, 9408 percent, 727.38 percent, 11497.70 percent, 4320.06 percent, 1104.39 percent and 65926.58 percent respectively. From 1977-78 to 2018-19 the percentage of auto rickshaws /tempos, tractors, trailors and others to total fleet increased 2.45 percent, 3.49 percent, 0.37 percent and 0.32 percent to 7.20 percent, 7.42 percent, 12.53 percent and 11.71 percent whereas the percentage of buses/ mini buses, trucks, taxies, private cars/st. wagons, motor cycles/scooters and Jeeps to total fleet decreased from 8.51 percent, 17.62 percent, 4.85 percent, 13.72 percent, 41.21 percent and 7.47 percent to 3.29 percent, 5.55 percent, 1.00 percent to 13.55 percent, 11.02 percent and 0.07 percent respectively. Further the percentage share of buses to total buses from 1977-78 to 2018-19 in the private sector increased from 69.34 percent to 98.45 percent whereas the said percentage share in the public sector declined from 30.66 percent to 1.45 percent.

State Road Transport Undertakings were created with the objective of supporting social and economic development by offering cheaper travel linking the hinterland with urban centers, subsidized service to the poor and students, better passenger amenities and well organized maintenance. Most of these social objectives were given priority in spite of their negative impact on State Road Transport Undertakings financial health.

The Jammu and Kashmir State Road Transport Corporation came into existence on 01-09-1976 under Road Transport Act of 1950 with the following objectives :

(a) To make the transport system advantageous and convenient to the public, tourism, trade, industry and various other agencies.

(b) To provide an efficient and economic road transport services for the travelling public both within the state and on the inter state routes.

(c) To provide for highly integrated transport system for carriage of essential commodities by the government agencies under the public distribution system.

Objectives of the Study

1. To identify the factors that led to the establishment of Jammu and Kashmir State Road Transport Corporation.
2. To analyze the performance of Jammu and Kashmir State Road Transport Corporation.
3. To examine relationship between losses and other variables.
4. To suggest measures for the improvement of the corporation.

Database and Methodology

The relevant data has been collected from secondary sources. The data concerning costs have been broadly divided into two categories, namely fixed and variable. The former include expenses which do not vary directly with output such as wages paid to permanent employees, insurance of vehicles, etc. whereas later category include such expenses which vary directly with output such as fuel, depreciation, etc. In order to evaluate the performance of Jammu and Kashmir State Road Transport Corporation data has been obtained on all crucial variables.

The relevant data regarding the aforesaid variables has been collected from the concerned department. Besides, the data published by Directorate of Economics and Statistics have been used to reflect the performance of the Corporation to observe the trends over the period in terms of various indicators of performance.

'Exponential Growth' has been calculated by solving equation of the form

$$y = ab^x$$

To get the value of b, the above equation has been put in logarithmic form of $\log y = \log a + x \log b$

To obtain the values of the constants a and b the two normal equations solved are

$\Sigma \log y = n \log a + \log b \Sigma x$

$\Sigma x \log y = \log a \Sigma x + \log b \Sigma x^2$

Linear trend line has been drawn by solving the equation of the form

$y = a+bt$

To obtain the values of constants a and b the two normal equations solved are

$$\Sigma y = na+b\Sigma t$$

$$\Sigma ty = a\Sigma t+b\Sigma t^2$$

Where n is the number of time series pairs (t,y) or number of observations.

To supplement tabular analysis, appropriate functional analysis throwing light on the contribution of specific inputs has been used, as this approach does not suffer from limitations of tabular approach. The unrestricted Cobb-Douglas function of the multivariate nature has been made use of to arrive at resource use efficiency in the corporation.

The usual form of the function, non-linear in character is given by the following equation :

$y= b_0 + b_1x_1+ b_2 x_2 + b_3x_3$ ---------- $+ b_nx_n$ – (i)

In our analysis, we also used the log-linear transformation of the said function and is stated as

$\log y=\log b_0 + b_1\log x_1 + b_2\log x_2 + b_3 \text{ Log } x_3 +$ -------- $+ b_n\log x_n$ – (ii)

Where y is dependent variable, x_1 through x_n are explanatory variables, b_0 is constant, b_1 through -----b_n are regression coefficients. In order to evaluate contribution of total variable cost (TVC) and total fixed cost (TFC) towards total sales value (TSV) contribution of each component of total variable cost (TVC) and total fixed cost (TFC) towards total sales value and contribution of total sales value (TSV), total fixed cost and total variable cost towards profits both linear and log linear estimates of the above mentioned function have been calculated along with T-Values, P-Values and R^2-Value which determines the total variation explained by the independent variables.

Usually the performance of state road transport corporation is evaluated in terms of profits. But its contribution cannot be evaluated only in terms of economic indicators.

The performance of Jammu and Kashmir State Road Transport Corporation can be evaluated both in terms of economic and non- economic indicators because of (a) the state government is dependent upon the State Road Transport Corporation to perform during calamities and natural disasters, (b) the Jammu and Kashmir State Road Transport Corporation reacts and responds to a situation more quickly than any other governmental and non- governmental agency, (c) it prevents increase in tariff rates as in the absence of the public sector the private transporter will have the freedom to charge fare at sweet will, (d) the private sector is reluctant to operate on unremunerative routes. Moreover in most of the cases the traffic potential is uni-directional. Left to the private sector, government may not achieve the advantages available to various sections of the society, including the pilgrim tourist etc. (e) The Jammu and Kashmir State Road Transport Corporation has a satisfactory safety record and its enforcement is vigorously pursued by the corporation constantly. The rate of accident in the private sector is abnormally high.

The performance of Jammu and Kashmir State Road Transport Corporation evaluated in terms of profits shows a dismal picture as is the case with other public sector units in the state. It is clear from the analysis of the data that the losses of the unit increased continuously except for ten years. The compound growth rate of losses stands at 22.33 percent. One of the major factor determining profits is total cost. These costs have been rising continuously. The compound growth rate of total cost during the period under study has been 10.16 percent.

The analysis of the behavior of components of total cost shows that in the first decade of its operation the fixed cost and the variable cost almost move in the same direction but later these move in different directions. So for as growth rate of fixed cost and variable cost is concerned ,fixed costs have increased at a compound growth rate of 12.98 percent whereas variable costs have increased at a compound growth rate of 6.88 percent. The proportion of wage to total cost has increased over the period under study. From an initial estimate 26 percent increased to about 60 percent in 1994-95 after which it again started declining. The proportion of financial expenses to total cost is consistently

increasing throughout the period. The percentage of licenses and taxes, other charges, office expenses, insurance and fuel expenses is showing marginal variations over the period having little influence on the behaviour of cost. The other major item of cost is depreciation. The said percentage which was quite percentage high in the initial years hovering between nearly one - third and one - fifth decreased and reached a low of 7 percent in 2013-14.

With respect to components of variable cost fuel cost seems to be a major component of variable cost and depicts a rising trend over the period , the said proportion increased from 40 percent to 70 percent from 1976-77 to 2015-16 although there have been significant variations during the intervening years. The other expenses as a proportion of variable costs are declining from nearly 20 percent during the initial years of its operation to less than 1 percent in the year 2002-03 then again increased to about 5 percent in 2015-16.

The percentage of wage to fixed cost has remained high throughout its period of operation . The said proportion has hovered between 60 percent to 70 percent .The financial expenses component has consistently been increasing except for few years. The percentage of licenses and taxes to fixed cost has not been very high and has remained between 3 percent to 5 percent during most of the years of its operation. The percentage of other charges has declined from 1 percent to less than 1 percent over the period under study. Therefore the major items of fixed cost are wages, financial expenses, licences and taxes and other charges.

Analysis of various components of costs shows that these various components have contributed to the losses though the contribution of these components has been uneven. The dominant contributory inputs in this context are fuel cost, licences and taxes and insurance which are not within the control of management. The relevant input costs which are within the control of management are office expenses and other expenses.

The analysis of total cost and its major components and losses shows a consistent increase. It is interesting to note that although both total fixed cost and total variable cost are increasing overtime, the total variable cost was higher than total fixed cost up to 1986-87 but after1986-87 the total fixed costs have increased at a higher rate than the total variable cost and the gap between the two seems to be widening over the period. The excess

of total variable cost over total fixed cost up to 1986-87 shows that losses during these periods were much lower and manageable but after 1986-87 the sharp increase in the total fixed cost have resulted in much higher losses to the corporation. This clearly shows that input- proportions were relatively better in the pre-1986-87. The analysis further shows that fluctuations in fuel charges have greater impact on losses as compared to depreciation and other expenses. Further the expenses on business promotion and publicity cost seem to be almost negligible having little impact on profitability of the corporation.

Among the components of total variable cost fuel seems to be the dominant component in so far as losses suffered by the corporation are concerned. The said proportion hovered between 40 percent to 70 percent. It would not be out of place to mention here that fluctuations in fuel expenses are beyond the control of the management.

The performance of the corporation in terms of sales value has been quite satisfactory right from its inception except for few years. The sales value in the aforesaid period increased at a compound growth rate of 7.88 percent. The perusal of sales value and losses indicates that no firm relationship exists between the two indicating thereby that the price policy pursued by the management is not sound. It will not be out of place to mention here that the price policy is not within the competence of the management and is imposed upon it by external forces. The corporation also caters to the areas both in respect of passenger and goods transport, where private sector does not operate because of extremely low profitability or because of certainty of losses. The combined effect of imposed price by external agency and operation on non- profitable areas leads to uncertain relationship between sales value and losses.

The analysis of total cost and total revenue shows that total cost has remained above the total revenue throughout the period of nearly three decades. However in the initial years the gap between total cost and total revenue is not very wide up to 1989-90 but thereafter the gap between the two increase and so the resultant losses also increase.

The relationship between sales value and losses which normally should have been negative seem to be positive. The behaviour of sales value and loss shows that whereas sales value is moving upwards over the period the losses are increasing consistently over the period with minor oscillations during the intervening periods.

1.Relationship between total sales value with total variable cost and total fixed cost.

$y= b_0 + b_1x_1+ b_2 x_2$

$y= - 148.297 + 0.092^* + 1.342^*$

(76.474) (0.030) (0.075)

$\log y=\log b_0 + b_1\log x_1 + b_2\log x_2$

$\log y =0.015^0+0.\ 107^0+0.927^*$

(0.132) (0.046) (0.083)

y= total sales value

b_0=constant of intercept

x_1= total fixed cost

x_2= total variable cost

A quantitative relationship between total sales value with total variable cost and total fixed cost were attempted by fitting a multiple regression equation.

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^{0} Not significant

* Significant at 99 percent probability

** Significant at 95 percent probability

(figures in parenthesis are standard errors

The linear estimates reveal that there is a positive relationship between total sales value with total variable cost and total fixed cost. Both estimates are statistically significant at 99 percent probability level respectively. A one unit change in total fixed cost will change total sales value by 0.092 while as one change in total variable cost will increase total sales value by 1.342 units. Though both variables are positively related with sales value but total variable cost seems to have high positive correlation with total sales value compared to total fixed cost. The coefficient of determination works out to be =.97 or 97.9 percent. Log linear model also depicts positive relationship between total sales value with total variable cost and total fixed cost and total variable cost emerged statistically significant at 99 percent probability level. A one unit change in total fixed cost will change total sales value by 0.107 units while as one unit change in total variable cost will increase total sales value by 0.927units. The positive sign on coefficients of both variables indicates their direct impact on total sales value. The total variable cost again shows a high positive correlation with total sales value in log linear model. The coefficient of determination works out to be 99 percent. Thus from this analysis we conclude that total sales value is positively related with total variable cost and total fixed cost.

2. Relationship between total sales value with components of total variable cost and total fixed cost.

$y= b_0 + b_1x_1+ b_2 x_2 + b_3x_3 + b_4x_4+ b_5 x_5 + b_6x_6 + b_7x_7+ b_8 x_8 + b_9x_9 + b_{10}x_{10}$

$y = -94.981^{0} + 0.2355^{0} - 0.157^{0} + 1.145^{0} + 7.210^{0} - 9.806^{0} + 11.275^{0}$
(146.728) (0.112) (0.124) (1.284) (4.301) (10.738) (11.814)

$+ 1.477^{*} + 0.852^{0} - 22.987^{0} + 0.996^{0}$
(0.136) (0.309) (35.455) (0.581)

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^{0} Not significant
* Significant at 99 percent probability
** Significant at 95 percent probability
(figures in parenthesis are standard errors

y= total sales value

b_0= constant of intercept

x_1 = Wages
x_2 = Financial Expenses
x_3 = Licences and Taxes
x_4= Other Charges
x_5 = Office Expenses
x_6 = Insurance
x_7= Fuel Cost
x_8 = Depreciation
x_9 = Business Promotion and Publicity
x_{10}= Other Expenses

By regressing total sales value on all the ten explanatory variables, the results show that only fuel emerged out statistically significant at 99 percent probability level. The positive sign on wages, licences and taxes, other charges, insurance, fuel, depreciation and other expenses indicates their direct relation with total sales value. A one unit change in wages, licences and taxes, other charges, insurance, fuel and other expenses will change sales value by 0.2355, 1.145, 7.210, 11.275, 1.477, 0.852 and 0.996 units respectively. The negative sign on financial expenses, office expenses, business promotion and publicity indicate their inverse relation with total negative profits. A one unit change in financial expenses, office expenses, business promotion and publicity will change total sales value by 0.157, 9.806 and 22.987 units respectively. The coefficient of determination works out to be 99 percent.

3Relationship between total negative profits with total variable cost, total fixed cost and sales value.

$y= b_0 + b_1x_1+ b_2 x_2 + b_3x_3$

$y = 85.360^0 – 1.978^* – 1.114^* + 1.102^*$

(48.471) (0.020) (0.147) (0.105)

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^{0} Not significant

* Significant at 99 percent probability

** Significant at 95 percent probability

(figures in parenthesis are standard errors

y= total loss

b_0=constant of intercept

x_1= total fixed cost

x_2= total variable cost

x_3= total sales value

The relationship between total negative profits with total variable cost, total fixed cost and total sales value indicates a positive relationship between total negative profits and total sales value while as negative relationship is observed between total negative profits with total variable cost and total fixed cost. A one (01) unit change in total sales value changes total negative profits by 1.10 units while as one (01) change in total fixed cost and total variable cost will change total negative profits by 1.98 and 1.11 units respectively. The estimates have emerged out statistically significant at 99 percent probability level. The coefficient of determination works out to be =.99. Thus from this analysis we conclude that profitability of the corporation is directly affected by sales value while as costs affect it indirectly.

4. Relationship between total loss with components of total variable cost and total fixed cost.

$y= b_0 + b_1x_1+ b_2 x_2 + b_3x_3 + b_4x_4+ b_5 x_5 + b_6x_6 + b_7x_7+ b_8 x_8 + b_9x_9 + b_{10}x_{10}$

$y = 268.429^0 – 0.726^* – 1.116^* + 1.034^0 + 4.577^0 – 12.818^0$

(161.300) (0.153) (0.170) (1.760) (5.893) (14.713)

$+ 9.409^0+ 0.530^0 – 0.281^0 – 62.970^0 + 0.070^0$

(16.187) (0.186) (0.424) (48.580) (0.795)

y= Total Loss

b_0= Constant of Intercept

x_1 = Wages

x_2 = Financial Expenses

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^{0} Not significant

* Significant at 99 percent probability

** Significant at 95 percent probability

(figures in parenthesis are standard errors)

x_3 = Licences and Taxes
x_4= Other Charges
x_5 = Office Expenses
x_6 = Insurance
x_7= Fuel Cost
x_8 = Depreciation
x_9 = Business Promotion and Publicity
x_{10}= Other Expenses

By regressing total negative profits on all the ten explanatory variables, the results show that only wages and financial expenses have emerged out statistically significant at 99 percent probability level respectively. The negative sign on wages, financial expenses, office expenses, depreciation and business promotion and publicity indicate their inverse relation with total negative profits and positive sign on licences and taxes, other charges insurance, fuel and other expenses indicates their direct relation with total negative profits. A one unit change in wages, financial expenses, office expenses, depreciation and business promotion and publicity will change negative profits by 0.726, 1.116, 12.818, 0.281 and 62.970 units respectively. A one unit change in licences and taxes, other charges insurance, fuel and other expenses will change negative profits by 1.034, 4.577, 9.409, 0.530, 0.141 and 0.070 units respectively. The coefficient of determination works out to be =.99. Thus in case of negative profits business promotion and publicity, insurance, office expenses and other expenses are more important than other variables.

5. Relationship between total revenue with total variable cost and total fixed cost.

$$y= b_0 + b_1x_1+ b_2 x_2$$

$$y = -77.823+ 0.137^* + 1.314^*$$

$$(95.896) \quad (0.037) \quad (0.094)$$

$$\log y=\log b_0 + b_1\log x_1 + b_2\log x_2$$

$$\log y = 0.229^0+ 0.103^0 + 0.875^*$$

$$(0.139) \quad (0.049) \quad (0.087)$$

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^{0} Not significant

* Significant at 99 percent probability

** Significant at 95 percent probability

(figures in parenthesis are standard errors)

y= total revenue

b_0=constant of intercept

x_1= total fixed cost

x_2= total variable cost

A quantitative relationship between total revenue with total variable cost and total fixed cost were attempted by fitting a multiple regression equation . The estimates are almost same as in case of linear estimates. A positive relationship exists between total revenue with total variable cost and total fixed cost. Both estimates are statistically significant at 99 percent probability level respectively. A one unit change in total fixed cost will change total revenue by 0.14 units while as one change in total variable cost will increase total revenue by 1.31 units. Though both variables are positively related with total revenue but total variable cost seems to have high positive correlation with total revenue compared to total fixed cost. Both estimates are statistically significant at 99 percent probability level respectively. The coefficient of determination works out to be =.98. Log linear model also depicts positive relationship between total revenue with variable cost and fixed cost and variable cost emerged statistically significant at 99 percent probability level. A one unit change in total fixed cost will change total revenue by 0.10 units. while as one unit change in total variable cost will change total revenue by 0.87 units. The positive sign on coefficients of both variables indicates their direct impact on total revenue. The total variable cost again shows a high positive correlation with total revenue in log linear model. The coefficient of determination works out to be =.97. Thus from this analysis we c onclude that total revenue is positively related with total variable cost and total fixed cost.

6. Relationship between total revenue with components of total variable cost and total fixed cost.

$$y= b_0 + b_1x_1+ b_2 x_2 + b_3x_3 + b_4x_4+ b_5 x_5 + b_6x_6 + b_7x_7+ b_8 x_8 + b_9x_9 + b_{10}x_{10}$$

$$y= 3.108^0 + 0.280^0 - 0.108^0 + 1.957^0 + 6.995^0 - 21.592^0 + 14.440^0 + 1.471^* + 0.862^0 - 48.005^0 + 1.165^0$$

(204.144) (0.155) (0.172) (1.787) (5.984) (14.940) (16.436) (0.189) (0.431) (49.329) (0.808))

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^{0} Not significant

* Significant at 99 percent probability

y= total revenue

b_0=constant of intercept

x_1 = Wages
x_2 = Financial Expenses
x_3 = Licences and Taxes
x_4= Other Charges
x_5 = Office Expenses
x_6 = Insurance
x_7= Fuel Cost
x_8 = Depreciation
x_9 = Business Promotion and Publicity
x_{10}= Other Expenses

By regressing total revenue on all the ten explanatory variables, the results show that only wages and fuel have emerged out statistically significant at 95 and 99 percent probability level respectively. The positive sign on all these variables indicates their direct relation with total revenue. A one unit change in wages, licences and taxes, other charges, insurance, fuel, depreciation and other expenses will bring out 0.280, 1.957, 6.995, 14.440, 1.471, 0.862 and 1.165 units change in total revenue respectively. A negative sign on coefficient of financial expenses, office expenses, business promotion and publicity indicates indirect impact on total revenue. A one unit change (increase/decrease) in financial expenses, office expenses, business promotion and publicity will change (decrease/increase) total revenue by 0.108, 21.592 and 48.005 units respectively. The coefficient of determination works out to be =.98

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^{0} Not significant

* Significant at 99 percent probability

** Significant at 95 percent probability

(figures in parenthesis are standard errors)

CONCLUSION

The regressing analysis reveals that there is a positive relationship between total sales value with total variable cost and total fixed cost. Though both variables are positively related with sales value but total variable cost seems to have high positive correlation with total sales value compared to total fixed cost.

Results of multiple regression equation show a positive relationship exists between total revenue with total variable cost and total fixed cost. Though both variables are positively related with total revenue but total variable cost seems to have high positive correlation with total revenue compared to total fixed cost.

The performance of Jammu and Kashmir State Road Transport Corporation has been influenced by economic as well as non- economic factors. Therefore policy measures aiming at making the Corporation economically viable should aim at improvement of roads, restriction on plying of private vehicles on nationalized routes, improving the infrastructure in workshops, improving labour- management relations, replacing over aged fleet, ensuring quick release of payments by government and semi-government organizations, adoption of rational price policy, commercial exploitation of immovable assets, adoption of fuel conservation measures and framing and implementing a proper comprehensive transport policy which will put the Corporation on the right track.

Thus improving of roads, restriction on plying of private vehicles on nationalized routes, improving the infrastructure in workshops, improving labour- management relations, replacing over aged fleet, quick release of payments by government organizations, adoption of rational price policy, commercial exploitation of immovable assets, adoption of fuel conservation measures and framing and implementing a proper comprehensive transport policy will improve the performance of the Corporation and put it on the right track.

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1. Relationship between total sales value with total variable cost and total fixed cost.

Reference Period	Value	TFC	TVC	R^2
1976-77 to 2016-17	Absolute Value	+ 0.092*	+ 1.342*	.98
1976-77 to 2016-17	Log Value	$+0.107^0$	+0.927*	.98

2. Relationship between total sales value with components of total variable cost and total fixed cost.

Reference Period	Value	Wages	Financial Expenses	Licences & Taxes	Other Charges	Office Expenses	Insurance	Fuel Charges	Depreciation	Business Promotion & Publicity
1976-77 to 2016-17	Absolute Value	0.2355^0	-0.157^0	$+1.145^0$	$+7.210^0$	-9.806^0	11.275^0	1.477*	0.852^0	-22.987^0

3. Relationship between total negative profits with total variable cost, total fixed cost and sales value.

Reference Period	Value	TFC	TVC	TSV	R^2
1976-77 to 2016-17	Absolute Value	– 1. 978*	– 1.114*	+ 1.102*	.99

4. Relationship between total negative profits with components of total variable cost and total fixed cost.

Reference Period	Value	Wages	Financial Expenses	Licences & Taxes	Other Charges	Office Expenses	Insurance	Fuel Charges	Depreciation	Business Promotion & Publicity	Other Expenses	R^2
1976-77 to 2016-17	Absolute Value	– 0.726*	– 1.116*	+ 1.034^0	+ 4.577^0	– 12.818^0	+ 9.409^0	+ 0.530^0	– 0.281^0	– 62.970^0	+ 0.070^0	.99

5. Relationship between total revenue with total variable cost and total fixed cost.

Reference Period	Value	TFC	TVC	R^2
1976-77 to 2016-17	Absolute Value	+ 0. 137*	+ 1.314*	.97
1976-77 to 2016-17	Log Value	+ 0.103^0	+ 0.875*	.97

6. Relationship between total revenue value with components of total variable cost and total fixed cost.

Reference Period	Value	Wages	Financial Expenses	Licences & Taxes	Other Charges	Office Expenses	Insurance	Fuel Charges	Depreciation	Business Promotion & Publicity	Other Expenses	R^2
1976-77 to 2016-17	Absolute Value	+ 0.280^0	– 0.108^0	+ 1.957^0	+ 6.995^0	– 21.592^0	+ 14.440^0	+ 1.471*	0.862^0	– 48.005^0	+ 1.165^0	.98