CHAPTER-I

INTRODUCTION AND METHODOLOGY

The curtain raising chapter of the thesis is ‘Introduction and Methodology’. The chapter throws light on evolution and rationale of public sector, growth of Public Sector Units (PSUs) and the types of public sector entities to focus on Public Transport Corporations which are in the ambit of the public enterprises. Covering the need for and scope of the study, the objectives of the study are articulated in the chapter. The methodological issues, hypothesis of the study, tools and techniques of analysis with a detailed formula frame, the limitations of the study besides the chapter design for the presentation of thesis form part of this chapter.

Introduction

The public sector in India has been emerged as an integral part of the economy in its growth and development process.\(^1\) It has been the backbone of Indian Economy and acted as a strategic mover of nation’s economic growth and development process especially after the attainment of independence and today they have undoubtedly attained the commanding heights of the economy.\(^2\) After globalization they have transformed temples of independent India to competitive business entities of modern India.

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In the process of economic development of India a vital role was assigned to the public sector and this role was enshrined in the Industrial Policy Resolution of 1948 and was further emphasized in the Industrial Policy Resolution, 1956. Public Sector in India was envisaged not only to control the triple bottom lines of Indian Economic Pyramid but also serve as a vehicle to promote balanced and equitable growth of the economy\(^3\). This led to the phenomenal growth of the Public Sector Enterprises in India at Centre and State levels during the planning period.

Throughout the developing world, the Public Enterprise (PE) is a major instrument for industrial and commercial development\(^4\). Public Enterprises also termed as State Enterprises or Government Enterprises constitute a major segment of the industrial activity in our country and these undertakings born as the outcome of the conscious policy of the government to speed up the industrialization of the country with a view to giving added impetus to economic growth as well as to achieve certain socio-economic goals as enunciated in Industrial Policy Resolution of the Government. These today cover a wide spectrum of activities in basic and strategic industries like steel, coal, minerals and consumer goods, trading and marketing activities, pharmaceuticals and fertilizers on the one hand, and consumer goods, trading and marketing activities, transportation services, contract and consultancy service, tourist services, financial services and development of small-scale industries, on the other. While some of these enterprises are operating under monopoly or near monopoly conditions, there are others working under competitive conditions.

\(^3\) Study Group On Reforms In State Public sector Undertakings, Planning Commission, Govt., Of India, Aug, 2002.

Public Sector is owned and financed by society\(^5\), thus aimed to maximize the welfare of the society\(^6\). Besides, fulfilling their social commitments, public sector enterprises are contributing significantly to the central exchequer through direct taxes and dividends. In simple terms, a public sector enterprise is an industrial, commercial or other economic activity owned and managed by the central or state government of jointly by both.

Sectors of economic activity which involve either monopoly conditions of strategic economic power or possession of large resource in private hands should be publicly owned and operated as public enterprises.\(^7\) It also means that public enterprise should make itself available for the building of economic overheads on the external economies like transport, power, fuel and basic capital goods without which increase in the production of consumption goods and services either on the required scale or necessary economic basis will not be possible.

**Evolution and Rationale of The Public Sector**

Though the public sector was started with greater vigor only after 1947, the idea of state owned undertakings was there long before. In south India, great dams and anicuts were built across the river Cauvery by the Chola Kings of the 11\(^{th}\) centuries. They are magnificent testimonials to the wisdom and foresight of the Cholas.

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India was not merely a country of temples. There was a good deal of economic development by the state, towards sustaining the life of the community and these dams and anicuts which were set up by the state for the benefit of the people are testimony enough to acknowledge the evolution of the public sector. Started by the great Chola Kings, the public sector went through periods of steady expansion until our country became a free nation. After 1947, the public sector became inevitable as the government realized that rapid economic development could be achieved only through state intervention on economic activates. The industrial policy resolutions of 1948 and 1956 clearly reflect the need for expanding the public sector.

The public sector has now grown tremendously and has become a leading light of our economy. There are several reasons for the creation and maintenance of public sector enterprises. First, there is persistence of monopoly power in many developing countries. Direct government control may be required to ensure that prices are not set above the marginal costs of producing the output. Moreover, certain goods and services that have a high social benefit are usually provided at a price below their costs or even free; hence the private sector has no incentive to produce such goods, and the government must be responsible for their provision.

Other reasons for the creation of PSUs include capital formation engaging in promising economic activities, the desire of some government of developing countries to gain national control over strategic sectors of the economy such as defence, over MNCs whose interests may not coincide with those of the country, or key sectors for planning purposes. Finally, ideological, social and welfare motives may be a factor in the creation of government undertakings.
Growth of Public Sector Undertakings

Government undertakings, both at central and state level, have, over the years, proliferated in terms of number, turnover, number of people employed, investments involved, and areas of activities covered. These public sector undertakings account for one-fourth of our GDP (Gross Domestic Product). They account for one-third of our exports. They have made significant contributions to import substitution. Industries like steel, aluminum and other non-ferrous metals, fertilizers, heavy engineering and oil have helped us save substantially on imports. Governments undertakings accounts for more than 70 per cent of the workers employed in the organized sector.

They have greatly reduced imbalances in regional development and have laid a strong base for the rapid development of our economy. Together with the undertakings in the private sector, government enterprises have greatly contributed to the transformation of our so called poor and traditional economy into a fast developing and fairly industrialized (India ranks among the top 20 industrialized countries in the world) country.

The Public Sector Undertakings (PSUs) are considered as major instruments of state intervention in economic activities in the developing economies. These countries were facing the problem of income and regional inequality along with the low level of employment and lack of skilled manpower. Further, the major contribution to Gross Domestic Product (GDP) in developing economies comes from the agricultural sector because of the weak industrial base and absence of service sector. At the same time, the low level of savings and poor infrastructure fail to encourage private investment.
Given the set-up of economic system, the state decided to come forward with a clear long-term development strategy. Thereby, the government followed a plan-led development strategy wherein the major role was given to the public sector. The objective behind the plan-led development strategy was to ensure efficient use of limited economic resources along with the social objective of growth with equity.  

However, the poor performance of Public Sector Enterprises (PSEs) in the 1980s made reform increasingly urgent in the context of the broader strategy of liberalization of the economy to deal with the perceived weaknesses of India’s development strategy in general and PSEs in particular. Lack of action and faulty actions may emerge in SOEs (State Owned Enterprises) for different reasons. It has been widely accepted that SOEs in India have remained in poor financial condition owing to political forces that constrain their function. This results in the bureaucratic interference that slows down decision making or making it financially irrational. In developing economies where unemployment rate is high, even declining SOEs continue their operations. Such organizations have increased inertia because of employment security and part of financial security provided by the government, high formalization and bureaucratic control.


Types of Public Enterprises

The Public Sector Undertakings are broadly classified into three categories.

1. Central Public Sector Enterprises (CPSEs)

The direct holding of Central Government in these enterprises is 51 per cent or more. As on 15th April, 2011, there were as many as 248 CPSEs (excluding 7 insurance companies). The number of profit making CPSEs has increased steadily from 143 CPSEs in 2004-05 to 160 CPSEs in 2007-08 and then declining to 158 for the years 2008-09 and 2009-10 with a total profit of Rs. 108435 crore.\(^\text{11}\)

2. Public Sector Banks (PSBs)

Banks where the direct holding of the Central / State Government is 51 per cent or more in these banks and the shares of these banks are listed on stock exchanges. As on 31\(^\text{st}\) March, 2011 there are 26 public sector banks functioning in India.

3. State Level Public Enterprises (SLPEs)

The State Public Sector Undertakings (PSUs) consist of State Government companies and Statutory Corporations established to carry out activities of commercial nature while keeping in view the welfare of the people and the direct holding of the State Government is 51 per cent or more. No regular survey is carried out for SLPEs. As on 31 March 2005, 1129 SLPEs were in operation.\(^\text{12}\) The majority of SLPEs about 50 per cent is in manufacturing sector followed by utility, promotional and welfare enterprises. It is also noteworthy that a considerable number of these enterprises are taken over sick units.

\(^{11}\) Public Enterprise Survey, Department Of Public Enterprises, New Delhi, 2009-10.

\(^{12}\) Eleventh Plan Draft, Planning Commission, Govt., Of India, 2012-17.
In Andhra Pradesh, the State PSUs occupy an important place in the State economy. As on 31 March 2011, there were 72 PSUs functioning in Andhra Pradesh. Out of these, 45 PSUs are working, and remaining 24 are not functioning. The remaining 3 PSUs are Statutory Corporations. Of these, no Company was listed on the stock exchange.

As on 31 March 2011, of the total investment in State PSUs, 99.46 per cent was in working PSUs and the remaining 0.54 per cent in non-working PSUs. This total investment consisted of 15.71 per cent towards capital and 84.29 per cent in long-term loans. The investment has grown by 56.93 per cent from Rs.31967.13 crore in 2005-06 to Rs. 50165.06 crore in 2010-11.

The working State PSUs registered a turnover of Rs. 61476.93 crore for 2010-11 as per their latest finalized accounts as of September, 2011. This turnover was equal to 10.83 per cent of State Gross Domestic Product (GDP) for 2010-11. The working State PSUs including working statutory corporations earned a profit of Rs. 238.56 crore in the aggregate for 2010-11. They had employed 2.64 lakh employees as on 31 March, 2011. Out of total 48 working PSUs’ in Andhra Pradesh, 28 PSUs earned profit of Rs. 922.95 crore and 9 PSUs incurred loss of Rs. 684.39 crore, four working PSUs’ prepared their accounts on a ‘no profit no loss’ basis and five PSU have not finalised their first accounts since incorporation and two PSUs prepared capital accounts.

The major contributors to profit were the Singareni Collieries Company Limited (Rs.351.37 crore), Andhra Pradesh Power Generation Corporation Limited (Rs.313.22 crore), Andhra Pradesh State Financial Corporation (Rs. 67.33 crore) and Transmission Corporation of Andhra Pradesh Limited (Rs.61.74 crore).
Heavy losses were incurred by Andhra Pradesh State Housing Corporation Limited (Rs.341.13 crore) and Andhra Pradesh State Road Transport Corporation (Rs.317.40 crore). The losses of PSUs are mainly attributable to deficiencies in financial management, planning, implementation of projects, running their operations and monitoring. Losses in Public Sector Undertakings have been a matter of great concern for the Governments, bureaucrats, educationists and every other person who has interest in the national economy.13

A.P. State Road Transport Corporation is one among the 37 State Road Transport Undertakings (STU) incorporated by Andhra Pradesh State Government under Section 3 of the Road Transport Corporations Act, 1950 as wholly owned Corporation or as Government Company under Companies Act, 1956 with a view to provide an efficient, adequate, economical and properly coordinated road transport. Public road transport plays a significant role in the development of economy of the country as a support system in carrying passengers to different places. This service is catered to by the State Transport Undertakings (STUs). Since 1932, the APSRTC has registered a steady growth from 27 buses and 166 employees to 22780 buses with 773 bus stations, 210 Depots and 1881 bus shelters and 115317 workforce as on 31st March, 2012. The buses of the Corporation cover 77.48 lakhs kilometers and carry 136.65 lakhs people to their destinations every day. They connect 23,338 villages to all major towns and cities in A.P which constitutes 83.01 per cent of road transport. APSRTC operates city, Mofussil, inter-state services connect towns and cities in the neighboring states of Tamilnadu, Karnataka, Maharashtra, Goa, Orissa and Chattisgarh.

The objective orientation, rationing and growth of Public Sector, both central and state level enterprises, are spectacular in India. But, due to the operational and managerial deficiencies and problems the spree of privatization started with a strong policy emphasis and reorientation of the Government philosophy since the initiation of economic reforms in 1991. The industrial policy statement announced by the GOI in July, 1991 envisaged the disinvestment of a part of the govt., holdings in the share capital of select Public enterprises in order to provide market discipline and to improve the performance of the public enterprises. The Arjun Sen Gupta Committee report also advocated that the Govt., should distance itself from the public sector.

On the other hand, wherever, the existence of public sector is imminent in view of the social objective and public welfare orientation, the imperative of improving the performance of public enterprises is emphasized. This is because the loss making or laming public enterprises are a drain on the public resources.

Thus, there is an underlying tone that the loss making and operationally and financially inefficient public enterprises need to have a turnaround through reorientation of their managerial and operational policies with the application of pragmatic strategies of turnaround addressing the realities and challenges of respective enterprises. Hence, the issue of organisational failure is of practical, political and academic interest. The challenge of grasping how failure is understood, and perhaps more importantly, recovered from, is the key driver of this thesis.
Need For The Study

APSRTC is the traditional and dominant state level public enterprise. Due to competition and lenience attitude of Government towards APSRTC, due to operational dilemmas and host of other reasons the corporation had been in the choppy waters financially and operations. The management of the corporation no doubt has been pursuing certain strategies of turnaround and implementing the capsules of corporate turnaround. But, still the corporation is laming and trailing behind. This may be due to heavy competition from the private sector operators, lack of professionalism and management, absence of conviction in administration, absence of objective oriented direction in turnaround strategies pursued.

APSRTC being a public service state-level government enterprise, the survival, success and the sustainability and commercial viability assume a dominant significance. In this direction, no research pursuit has so far been undertaken. To fill the niche, the present study on the ‘Dimensions And Strategies Of Turnaround Management - A Study With Reference To A.P. State Road Transport Corporation’ is felt imminent and imperative.

Period Of The Study

The study covers a period of 10 years between 2000 and 2010 for all pertinent analysis. For the purpose of operational and financial analysis besides the presentation of comprehensive profile of the Corporation the time period beyond the stated period of the study is covered.
Scope Of The Study

Though the study is broadly christened as turnaround management in public enterprises, the focus is specifically on the turnaround strategies with regard to A.P. State Road Transport Corporation. The study covers the operational and financial profile of the entity, the turnaround strategies adopted, their fit and implementation besides the turnaround strategies ought to be pursued the sustainability and the success of the corporation as a commercially viable entity in the arena of competition in the regime of reforms. The feel, perceptions and expectations of the management, the internal customers (employees), and the consuming public (commuters / passengers) are also elicited and analysed for presenting a comprehensive kaleidoscope of the turnaround scenario of the APSRTC.

Database and Methodology

The study is based both on the primary and secondary data. The sources of secondary include the office records, annual reports, performance and review reports of the corporation supported by the Comptroller & Auditor General (CAG) Commercial Reports. In addition, the published and unpublished data from the sources like Bureau of Public Enterprises (BPE, New Delhi), Standing Committee On Public Enterprises (SCOPE, New Delhi), Department of Public Enterprises, Government Of India, also form the basis of secondary data. The published articles from the standard journals and the literature from reputed books, unpublished dissertations constitute the armory of the researcher in the form of secondary data.
The primary data also provides for the core analytical framework of the study. For eliciting the present primary data the structured questionnaires for the cadre of management and also employees besides the semi-structured face-to-face interview with the commuters / passengers provide the base. The questionnaires are canvassed along the select sample of the respondents on random sampling basis after due pilot testing of the schedules.

**Objectives Of The Study**

The main objective of the study is to diagnose and evaluate the dimensions and strategies adopted by the A.P. State Road Transport Corporation for its turning around.

The other peripheral objectives are:

1. to identify the result oriented top level change agent which orient to turnaround the corporation;
2. to present the genesis and development of SRTUs in India with exclusive focus on A.P. State Road Transport Corporation;
3. to review the credibility building actions implemented by A.P. State Road Transport Corporation for its turning around;
4. to analyse the performance of the A.P. State Road Transport Corporation;
5. to examine the strategies adopted by A.P. State Road Transport Corporation at different levels of operation.
6. to suggest policy measures for effective and efficient functioning of A.P. State Road Transport Corporation enable it to operate at a profitable level by employing specified turnaround strategies.
Sample Design

The origin of APSRTC dates back to June 1932, when it was first established as NSR-RTD (Nizam State Rail & Road Transport Department), a wing of Nizam State Railway in the erstwhile Hyderabad State with 27 buses and 166 employees. During the past 77 years, it has registered a steady growth from 27 to 22,265 buses with 767 bus stations, 210 Depots and 1880 bus shelters. The Corporation's buses cover 79.34 lakh KMs. and carry 127.09 lakh people to their destinations every day. They connect 24,336 villages to all major towns and cities in A.P which constitutes 95% of Road Transport. APSRTC operates to City and Moffusil areas. The Corporation's buses also ply to important towns and cities in the neighboring States of Tamilnadu, Karnataka, Maharashtra, Goa, Orissa and Chattisgarh.

The entire network is under the administrative control of 23 Regional Managers in 7 Zones. Zonal Head Quarters are at Hyderabad. APSRTC under the present name was established on 11th January 1958 in pursuance of the Road Transport Corporations Act 1950. As mentioned earlier the AP State Road Transport Corporation operates its buses under the administrative control of 7 Zones viz., Greater Hyderabad (24 depots), Hyderabad (28 depots), Karimnagar (37 depots), Vijayawada (32 depots), Vizianagaram (27 depots), Kadapa (31 depots) and Nellore (31 depots). These zones are considered as strata for the selection of the sample of the commuters as well as operational staff. In each of the zones 20 per cent (i.e. 42 depots) of the total (210 depots) depots was selected for collection of primary data. The stratified proportionate random sampling method is adopted for this study.
The depots selected for the sample (42 depots) has connected to urban, semi-urban and mofussil services. This study is confined to the 126 services (i.e., 42 depots multiplied by 3 aforecited services) operated by APSRTC in all regions. It is observed that in each service 25 commuters have been selected using purposive sampling method. Therefore, the questionnaire is canvassed among the 3150 commuters. Out of which, approximately 630 unfilled and unbiased responded questionnaires have been rejected. Hence, the study is confined to a total sample of 2520 commuters which is a representative of the heterogeneity of the respondents which justifies 95 per cent confidence limit.\(^\text{14}\)

The operational staff is a blended mix of front-line operational force consisting bus drivers and conductors, Traffic Inspectors (TIs) etc. Due diligence is taken in selecting a sample of operational staff considering their experience and educational qualification. In selecting sample of operational staff, purposive sampling method is adopted. The structured questionnaire is canvassed among 1512 operational staff with a blended mix 756 conductors and drivers each and 42 Traffic Inspectors. From the survey, it is observed that 16.6 per cent of the biased and unfilled subjects are rejected. Therefore, the study considers 83.34 per cent of the subjects which comprising of 630 conductors and drivers each and 42 Traffic Inspectors which is found to be satisfactory at 95 per cent level of significance.

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Table -1.1: Selection Of Sample Of Operational Staff

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Zone(s)</th>
<th>No. Of Depots</th>
<th>20% Of Depots</th>
<th>Services Selected (Urban+ Semi Urban+ Moffusil)</th>
<th>No Of Operational Staff Per Bus$</th>
<th>Rejected Unfilled Questionnaires</th>
<th>Selected Sample Of Operational Staff</th>
<th>Traffic Inspectors (Tis’*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greater Hyderabad</td>
<td>24</td>
<td>5</td>
<td>5 x 3= 15</td>
<td>15 services* (6conductors+6Drivers) = 180</td>
<td>22</td>
<td>158</td>
<td>1 Traffic Inspector from each selected Depot i.e., 42 depots x 1TI = 42</td>
</tr>
<tr>
<td>2</td>
<td>Hyderabad</td>
<td>28</td>
<td>6</td>
<td>6 x 3= 18</td>
<td>216</td>
<td>36</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Karimnagar</td>
<td>37</td>
<td>8</td>
<td>8 x3= 24</td>
<td>288</td>
<td>80</td>
<td>208</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Vijayawada</td>
<td>32</td>
<td>6</td>
<td>6 x 3=18</td>
<td>216</td>
<td>26</td>
<td>190</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Vizianagaram</td>
<td>27</td>
<td>5</td>
<td>5 x 3= 15</td>
<td>180</td>
<td>28</td>
<td>152</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Kadapa</td>
<td>31</td>
<td>6</td>
<td>6 x3= 18</td>
<td>216</td>
<td>35</td>
<td>181</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Nellore</td>
<td>31</td>
<td>6</td>
<td>6 x3= 18</td>
<td>216</td>
<td>25</td>
<td>191</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>210</strong></td>
<td><strong>42</strong></td>
<td><strong>126</strong></td>
<td><strong>1512</strong></td>
<td><strong>252</strong></td>
<td><strong>1260</strong></td>
<td></td>
</tr>
</tbody>
</table>

Therefore, total selected operational staff = 1260 (630 drivers + 630 conductors) + 42 TI’s = 1302

$Total number of operational staff per bus as per Corporation Records=5 (1 Mechanic + 2 Drivers + 2 Conductors).
Table-1.2: Selection of Sample Of Commuters

<table>
<thead>
<tr>
<th>S. No</th>
<th>Zone</th>
<th>No. Of Depots</th>
<th>20% Of Depots</th>
<th>Services selected (Urban+ Semi Urban+ Muffosil)</th>
<th>Commuters (Bus seat Capacity x 50%)</th>
<th>Rejected Unfilled Questionnaires</th>
<th>Selected Sample of Commuters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greater Hyderabad</td>
<td>24</td>
<td>5</td>
<td>5 x 3=15</td>
<td>15 x 25=375</td>
<td>79</td>
<td>296</td>
</tr>
<tr>
<td>2</td>
<td>Hyderabad</td>
<td>28</td>
<td>6</td>
<td>6 x 3=18</td>
<td>18 x 25=450</td>
<td>96</td>
<td>354</td>
</tr>
<tr>
<td>3</td>
<td>Karimnagar</td>
<td>37</td>
<td>8</td>
<td>8 x3=24</td>
<td>24 x 25=600</td>
<td>177</td>
<td>423</td>
</tr>
<tr>
<td>4</td>
<td>Vijayawada</td>
<td>32</td>
<td>6</td>
<td>6 x 3=18</td>
<td>18 x 25=450</td>
<td>50</td>
<td>400</td>
</tr>
<tr>
<td>5</td>
<td>Vizianagaram</td>
<td>27</td>
<td>5</td>
<td>5 x 3=15</td>
<td>15 x 25=375</td>
<td>50</td>
<td>325</td>
</tr>
<tr>
<td>6</td>
<td>Kadapa</td>
<td>31</td>
<td>6</td>
<td>6 x3=18</td>
<td>18 x 25=450</td>
<td>67</td>
<td>383</td>
</tr>
<tr>
<td>7</td>
<td>Nellore</td>
<td>31</td>
<td>6</td>
<td>6 x3=18</td>
<td>18 x 25=450</td>
<td>111</td>
<td>339</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>210</strong></td>
<td><strong>42</strong></td>
<td></td>
<td><strong>3150</strong></td>
<td><strong>630</strong></td>
<td><strong>2520</strong></td>
</tr>
</tbody>
</table>

* Bus seat capacity at an average of 50 seats.

Note: Seating Capacity of buses – Category Wise

Table-1.3: Seating Capacity In Various Types Of Buses

<table>
<thead>
<tr>
<th>S. No</th>
<th>Bus Category</th>
<th>No. of Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Palle Velugu</td>
<td>59</td>
</tr>
<tr>
<td>2</td>
<td>Ordinary</td>
<td>59</td>
</tr>
<tr>
<td>3</td>
<td>Express</td>
<td>49</td>
</tr>
<tr>
<td>4</td>
<td>Deluxe</td>
<td>42</td>
</tr>
<tr>
<td>5</td>
<td>Hi tech</td>
<td>32</td>
</tr>
<tr>
<td>6</td>
<td>Garuda</td>
<td>55</td>
</tr>
<tr>
<td>7</td>
<td>Metro Liner</td>
<td>52</td>
</tr>
</tbody>
</table>

Average seating capacity 49.71 i.e., 50
Hypothesis Of The Study

A proposition is formulated for empirical testing, it is called a hypothesis. As a declarative statement about the relationship between two or more variables, a hypothesis is of a tentative and conjectural nature. For the purpose of the present study it is hypothesized that

H1: There is no significant difference in the most dissatisfying features in the services of APSRTC and tenure of usage of services.

H2: Is there any significant correlation between the reasons for inefficiency of the APSRTC as perceived by the commuters and the suggestions by them there of?

H3: Retrenchment strategies have a significant positive relationship on the organisational turnaround.

H4: Repositioning strategies have a significant positive relationship on the organisational turnaround.

H5: Reorganization strategies have a significant positive relationship on the organisational turnaround

H6: Financial Strategies have a significant positive relationship on the organisational turn around.

H7: The suggestions made by the commuters are significantly influence the strategies of turnaround implemented by APSRTC for its turning around.

Tools and Techniques Of Analysis

For the purpose of analysis and to facilitate interpretation simple statistical tools like percentages, averages, simple growth rate, compound annual growth rates, and Pearson Coefficient of Correlation are applied. Statistical tools such as Chi Square test, Independent sample t- test, Levene’s test for equality of variances, Kolmogorov- Smirnov test, Friedman’s test, Canonical Correlation Analysis and Exploratory Factor Analysis are used for testing the hypothesis on SPSS for Windows Version 16.0 are used for the purpose of extensive analysis. For the construct included in the study, unidimensionality was asserted using Confirmatory factor analysis (CFA) using Statistica 9.0 edition. The $\chi^2$, goodness of fit indices (GFI) and RMSEA measures were employed to examine the integrity of the construct.

(i) Simple Growth Rate

It merely gives the percentage of increase over the previous year i.e.

$$ g = \left\{ \frac{K_t - K_{t-1}}{K_{t-1}} \right\} \times 100 $$

$g$ = Growth Rate,
$K_t$, $K_{t-1}$ are the values of variables, and
$K$ in year’s $t$ and $t-1$ respectively

(ii) Compound Growth Rate

It works out change for a given period on the basis of the base year and the end year values, i.e.,

$$ g = \left\{ \frac{K_t}{K_0} \right\}^{1/t} - 1 \times 100$$
where $K_1$ and $K_0$ represents the values of variables at the end and base year respectively.

't' is the time period between the base year and end year, and

'g' represents the compound growth rate.

(iii) Mean ($\bar{X}$)

The mean value is obtained by adding together all the items and by dividing the sum of the total by the number of items.

$$\bar{X} = \frac{X_1 + X_2 + X_3 + \ldots \ldots \ldots \ldots X_n}{N} = \frac{\sum X}{N}$$

Where, $\bar{X}$ = Arithmetic value

$\sum X$ = Sum of all the variables

$N$ = Number of variables

(iv) Standard Deviation

Standard deviation measures the absolute dispersion. A small standard deviation means a high degree of uniformity of the observations as well as homogeneity of series and a large standard deviation is opposite to small standard deviation. It may be calculated as follows:

$$\sigma = \sqrt{\frac{\sum x^2}{N}} \quad x = (X - \bar{X})$$

(v) Co-efficient of Correlation

It is a statistical device, which helps us in analyzing the co-variation between two or more series of variables. The co-efficient of correlation is denoted by the symbol 'r', the formula for computing 'r' which was propounded by "Karl Pearson" is:

$$r = \frac{\sum xy}{N \sigma_x \sigma_y}$$
where \( x = (X - \overline{X}) \) \quad \text{and} \quad y = (Y - \overline{Y})

\[ \sigma_x = \text{Standard Deviation of Series X} \]

\[ \sigma_y = \text{Standard Deviation of Series Y} \]

\[ N = \text{Number pairs or observations} \]

\[ r = \text{The Correlation Co-efficient.} \]

The value of correlation co-efficient, which is obtained by the above formula, shall always lies between \( \pm 1 \). If \( r = +1 \) it means that there is a perfect positive correlation between the variables. When \( r = -1 \), there is a perfect negative correlation between the variables. When \( r = 0 \) it means there is no relationship between the two variables.

**(vi) t-Test of a Correlation Co-Efficient**

It is assumed that the two series of variables originate from a bi-variate normal distribution, and that relationship is linear. To test the null hypothesis that the population value of ‘r’ is zero, the test static \( t \) is calculated.

\[
t = \frac{r}{\sqrt{1 - r^2}} \times \sqrt{n - 2}
\]

It is followed students t - distribution with \( (n-2) \) degrees of freedom. The tests will normally two-tailed but in certain cases would be one tailed.

**(vii) Cross Tabulation**

Cross Tabulation is a technique for comparing data from two or more categorical variables such as gender and selection by one’s company for an overseas assignment. Cross Tabulation is used with demographic variables and to study the target variables. The technique makes use of tables having rows and columns that correspond to the levels or code values of each variables category.

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The combination of the variables with their values produces cells. Each cell contains a count of the cases of joint classification i.e., the row, column and total percentages. The number of row cells and column cells is often used to designate the size of the table. Their row and column numbers individually identifies the cells. Row and column totals called marginals, appear at the bottom and right margins of the table. They show the counts and percentages of the separate rows and columns.

Cross Tabulation is a first step for identifying the relationships between variables. When the tables are constructed for statistical testing viz., Contingency Tables and the test determines the classification variables are independent of each other.

(viii) Chi - Square Test

Chi-Square is a test of agreement (or conformity or consistency) between a hypothetical and a sample distribution.

\[ \chi^2 = \sum_{i=1}^{k} \left( \frac{O_i - E_i}{E_i} \right)^2 \]

\[ \chi^2 = \text{Chi-Square} \]

\[ O_i = \text{Observed frequency in the } i^{th} \text{ category.} \]

\[ E_i = \text{Expected frequency in the } i^{th} \text{ category.} \]

(ix) Factor Analysis

Factor Analysis is a technique used to uncover the latent structure (dimensions) of a set of variables. It reduces attribute space from a larger number of variables to a smaller number of factors and as such is a ‘non-dependent’ procedure (i.e., it does not specify a dependent variable).
Factor analysis is commonly used in data reduction, scale development, for the evaluation of the psychometric quality of a measure, and the assessment of dimensionality of a set of variables. Regardless of purpose, factor analysis is used in the determination of a small number of factors based on a particular number of inter-related quantitative variables.

**Factor Analysis Model**

Each variable is expressed as a linear combination of factors. The factors consist of some common factors and a unique factor. The factor model is represented as:

\[ X_i = A_{i1}F_1 + A_{i2}F_2 + A_{i3}F_3 + \ldots + A_{im}F_m + V_i U_i \]

where

- \( X_i \) = \( i^{th} \) standardized variable
- \( A_{ij} \) = standardized multiple regression coefficient of var \( i \) on common factor \( j \)
- \( F_j \) = common factor \( j \)
- \( V_i \) = standardized regression coefficient of var \( i \) on unique factor \( i \)
- \( U_i \) = the unique factor for variable \( i \)
- \( m \) = number of common factors

The first sets of weights (factor score coefficients) are chosen so that the first factor explains the largest portion of the total variance. Then, a second set of weights can be selected, so that the second factor explains most of the residual variance, subject to being uncorrelated with the first factor. The same principle applied for selecting additional weights for the additional factors.
Statistics Associated with Factor Analysis

- **Bartlett's test of sphericity**: Bartlett's test of sphericity is used to test the hypothesis that the variables are uncorrelated in the population (i.e., the population correlation matrix is an identity matrix).

- **Correlation matrix**: A correlation matrix is a lower triangle matrix showing the simple correlations, $r$, between all possible pairs of variables included in the analysis. The diagonal elements all are 1.

- **Communality**: Amount of variance a variable shares with all the other variables. This is the proportion of variance explained by the common factors.

- **Eigen value**: Represents the total variance explained by each factor.

- **Factor loadings**: Correlations between the variables and the factors.

- **Factor matrix**: A factor matrix contains the factor loadings of all the variables on all the factors.

- **Factor scores**: Factor scores are composite scores estimated for each respondent on the derived factors.

- **Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy**: It is used to examine the appropriateness of factor analysis. High values (between 0.5 and 1.0) indicate appropriateness.

- **Percentage of variance**: The percentage of the total variance attributed to each factor.
**x) Independent t - Sample Test:** The Independent t -Sample Test evaluates the mean differences between two populations using the data from two separate samples. The identifying characteristics of the independent t - Sample Test measure the existence of two separate or independent samples between the variables. Thus, an independent t- sample test can be used to test the mean differences between two distinct populations or between two different treatment conditions.

**Equality of Variance (Homogeneity of Variance)**

The t-test with equal variance assumed is unreliable if the assumption of equal variance is violated. When comparing groups, their variances must be relatively similar for the first t-test to be used (Levene's test checks for this). If the significance for Levene's test is 0.05 or below, then the "Equal Variances Not Assumed" test (the one on the bottom) is used.

This test is only used when both:

- the two sample sizes (that is, the number, \(n\), of participants of each group) are equal;
- it can be assumed that the two distributions have the same variance.

The \(t\) statistic to test whether the means are different can be calculated as follows:

\[
t = \frac{\bar{X}_1 - \bar{X}_2}{S_{X_1X_2} \cdot \sqrt{\frac{2}{m}}}
\]

Where

\[
S_{X_1X_2} = \sqrt{\frac{S_{X_1}^2 + S_{X_2}^2}{2}}
\]
Here, is the $S_{X_1X_2}$ grand standard deviation (or pooled standard deviation), $1 = \text{group one}, 2 = \text{group two}$. The denominator of $t$ is the standard error of the difference between two means. For significance testing, the degrees of freedom for this test are $2n - 2$ where $n$ is the number of participants in each group.

**Levene’s test for Equality of Variances**

Levene's test is an inferential statistic used to assess the equality of variances in different samples. Levene's test assesses variances of the populations from which different samples are drawn are equal. It tests the null hypothesis that the population variances are equal (called homogeneity of variance). If the resulting $p$-value of Levene's test is less than some critical value (typically 0.05), the obtained differences in sample variances are unlikely to have occurred based on random sampling. Thus, the null hypothesis of equal variances is rejected and it is concluded that there is a difference between the variances in the population.

**xi) Kolmogorov - Smirnov Test**

Kolmogorov-Smirnov Test (K-S test) is a form of minimum distance estimation used as a nonparametric test of equality of one-dimensional probability distributions used to compare a sample with a reference probability distribution (one-sample K-S test), or to compare two samples (two-sample K-S test). The Kolmogorov-Smirnov statistic quantifies a distance between the empirical distribution function of the sample and the cumulative distribution function of the reference distribution, or between the empirical distribution functions of two samples. The Kolmogorov-Smirnov test may also be used to test whether two underlying one-dimensional probability distributions differ.
xii) Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is a statistical technique used to verify the factor structure of a set of observed variables. CFA allows the researcher to test the hypothesis that a relationship between observed variables and their underlying latent constructs exists. CFA specifically, relies on several statistical tests to determine the adequacy of model fit to the data. The chi-square test indicates the amount of difference between expected and observed covariance matrices. A chi-square value close to zero indicates little difference between the expected and observed covariance matrices. In addition, the probability level must be greater than 0.05 when chi-square is close to zero.

The Comparative Fit Index (CFI) is equal to the discrepancy function adjusted for sample size. CFI ranges from 0 to 1 with a larger value indicating better model fit. Acceptable model fit is indicated by a CFI value of 0.90 or greater Root Mean Square Error of Approximation (RMSEA) is related to residual in the model. RMSEA values range from 0 to 1 with a smaller RMSEA value indicating better model fit. Acceptable model fit is indicated by an RMSEA value of 0.06 or less.

xii) Friedman’s Test

The Friedman test is a test for comparing three or more related samples and which makes no assumptions about the underlying distribution of the data. The data is set out in a table comprising n rows by k columns. The data is then ranked across the rows and the mean rank for each column is compared. The differences between the sum of the ranks is evaluated by calculating the Friedman test statistic M:
\[ M = \frac{12}{nk(k+1)} \sum R_j^2 - 3n(k+1) \]

Where \( k = \) number of columns (often called “treatments”)

\( n = \) number of rows (often called “blocks”)

\( R_j = \) sum of the ranks in column \( j \).

If there is no significant difference between the sum of the ranks of each of the columns, then \( M \) will be small, but if at least one column shows significant difference then \( M \) will be larger.

**xiii) Canonical Analysis**

Canonical analysis allows us to study the properties of measurement scales and items that make them up. Canonical analysis is a multivariate technique which is concerned with determining the relationships between groups of variables in a data set. The data set is split into two groups; let’s call these groups X and Y, based on some common characteristics.

The purpose of Canonical analysis is then to find the relationship between X and Y, i.e., some form of X represents Y. It works by finding the linear combination of X variables, i.e. \( X_1, X_2 \) etc and linear combination of Y variables, i.e. \( Y_1, Y_2 \) etc which are most highly correlated. This combination is known as the "first canonical variates" which are usually denoted \( U_1 \) and \( V_1 \), with the pair of \( U_1 \) and \( V_1 \) being called a "canonical function". The next canonical function, \( U_2 \) and \( V_2 \) are then restricted so that they are uncorrelated with \( U_1 \) and \( V_1 \). Everything is scaled so that the variance equals 1.
xiv) **Multi Dimensional Scaling**

Multidimensional scaling (MDS) is a series of techniques that helps the analyst to identify key dimensions underlying respondents’ evaluations of objects. It is often used in Marketing to identify key dimensions underlying customer evaluations of products, services or companies. Multidimensional scaling can help determine:

- What dimensions respondents use when evaluating objects?
- How many dimensions they may use in a particular situation?
- The relative importance of each dimension, and
- How the objects are related perceptually?

The purpose of MDS is to transform respondents judgments of similarity or preference into distances represented in multidimensional space. The resulting perceptual maps show the relative positioning of all objects. Multidimensional scaling is based on the comparison of objects. Any object (product, service, image, etc.) can be thought of as having both perceived and objective dimensions. Perceptual mapping, and Multi-Dimensional Scaling in particular, is most appropriate for achieving two objectives:

1. As an exploratory technique to identify unrecognized dimensions affecting behavior.
2. As a means of obtaining comparative evaluations of objects when the specific bases of comparison are unknown or indefinable.
The strength of perceptual mapping is its ability to infer dimensions without the need for defined attributes. In a simple analogy, it is like providing the dependent variable (similarity among objects) and figuring out what the independent variables (perceptual dimension) must be.

The researcher must define a multidimensional scaling analysis through three key decisions viz., a) selecting the objects that will be evaluated, b) deciding whether similarities or preference is to be analyzed and c) choosing whether the analysis will be performed at the group or individual level. The determination of how many dimensions are actually represented in the data is generally reached through one of three approaches: subjective evaluation, screen plots of the stress measures, or an overall index of fit.

One of the objectives of the analyst should be to obtain the best fit with the smallest possible number of dimensions. Interpretation of solutions derived in more than three dimensions is extremely difficult and usually is not worth the improvement in fit. The analyst typically makes a subjective evaluation of the spatial maps and determines whether the configuration looks reasonable. This question must be considered, because at a later stage the dimensions will need to be interpreted and explained. A second approach is used as a stress measure, which indicates the proportion of the variance of the disparities not accounted for by the MDS model. This measurement varies according to the type of program and the data being analyzed. Kruskal’s stress is the most commonly used measure for determining a model’s goodness of fit, and is provided in SPSS. Stress is minimized when the objects are placed in a configuration so that the distances between the objects best match the original distances.
A problem found in using stress, however, is analogous to that of $R^2$ in multiple regressions in that stress always improves with increased dimensions. A trade-off must then be made between fit of the solution and the number of dimensions. We can plot the stress value against the number of factors to help us determine the optimal number of dimensions, in a similar technique to using a Screen Plot in Factor Analysis. We can also use an $R^2$ measure as an index of fit, indicating the proportion of variance of the disparities accounted for by the MDS procedure.

**Limitations of The Study**

Though the study is designed schematically it is not without certain limitations. Some of which are as follows:

a) As the study is based upon primary as well as secondary data, the secondary data sources vary widely in reporting. Difficulties are faced in authenticating the data with a reference to the official records.

b) As the A.P. State Level Public Sector Undertakings experienced delay in annual account reporting updated information could not be obtained.

c) In collecting the primary data, respondents bias do exist.

d) The percentages and averages are rounded off to the nearest decimal point thus lacking exactness.
CHAPTERISATION

For a comprehensive presentation the study is capsuled into the following chapter setting.

Chapter-I is Introduction and Methodology which provides a canvas of the objectives of the study, hypotheses, the period of study and scope of the study, database and methodology, the sample design, tools of analysis and the limitations of the study.

Chapter-II is a brief of the Review of Literature. Various studies relating to the State Road Transport Corporations (SRTCs’) and the Turnaround Management (TM) are briefly reviewed in the chapter.

Chapter-III articulates the Issues, Intricacies and Strategies Of Turnaround Management.

Chapter-IV presents A Scenario of SRTUs in India.

Chapter-V presents the Profile and Analysis of The Operational And Financial Scenario Of A.P. State Road Transport Corporation (APSRTC).

Chapter-VI analyses the Perceptions Of Commuters as well as the Managerial Staff Of The Corporation on the Issues, Intricacies and Strategies Of Turnaround of APSRTC.

The last and the final Chapter-VII of the thesis presents the Observations emanating from the study and the pertinent Suggestions for future policy orientation.