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ABSTRACT

Electricity constitutes one of the key infrastructural inputs for socio-economic development of a country. In India, there is shortage of electricity which was recorded as high as 83,950 MU in 2009-10. Thermal power plants are the main source to supply electricity to major segment of India and fulfilling the electricity requirement of the country. As there is shortage of electricity, hence besides addition of more generating facilities, the efficiency analysis of existing power generating utilities is also needed to improve the performance of these utilities which could help to reduce demand supply gap. This study is an effort to analyze technical efficiency and managerial effectiveness of thermal power stations to find out the group of less efficient power plants and to find out the crucial managerial processes which need to be addressed for attaining higher level of effectiveness which will lead to overall improvement in performance. The thesis is divided into six chapters-

Chapter 1 focused on background, importance and need of research. It includes research objectives. The growth in generating capacity of Indian power sector in hydro, nuclear, renewable and thermal power generating capacity are elaborated in context of the study.

Chapter 2 Literature in respect of studies in the area of power sector, performance analysis of power sector including electricity generating plants are discussed showing gap in the area of evaluation of efficiency of thermal power plants. Literature comparing organizations on the basis of ownership are discussed elaborating difference in performance due to ownership.

Chapter 3 includes frame work for factors affecting efficiency and effectiveness of thermal power plants. Different processes and equipments affecting performance of thermal power plant have been discussed. Selection of variables for efficiency and effectiveness analysis discussed. Conversion of eight variables into 105 items for designing of questionnaire on the basis of different processes and equipments affecting performance of thermal power plant is presented.

Chapter 4 describes the research methodology, research design, research objectives and frame work of research. Three key hypothesis and nine sub hypothesis are identified. Design of questionnaire, analysis of data, application of statistical tools (data envelopment analysis- applied for efficiency analysis and t test- applied for effectiveness analysis) are discussed.

Chapter 5 presents the results of the analysis. Comparison of relative efficiency of thermal power stations among three clusters- center owned, state owned and private owned thermal power stations, segregated on the basis of owner ship are computed and presented. Comparison of effectiveness of managerial processes among central owned, state owned and private owned thermal power stations are also computed and discussed.

Chapter 6 presents key findings of study which are as under

Key findings

- Efficiency analysis of thermal power plants in India concluded that performance of central owned thermal power plant is better than state owned power plants in all three category (small, medium and large power plant category) indicating that central owned power plants are better managed in comparison to their counterparts of state owned power plants. Study also finds that performance of private owned and central owned power plants is almost equal or at par.
- Effectiveness analysis of managerial processes in thermal power plants concluded that managerial process are more effective in central owned thermal power plant in comparison to that in its counter part of state owned thermal power plants.