

The Impact of Organizational Climate in Tuticorin Thermal Power Station

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Abstract

Background/Objectives: The objective is to analyse the factors enhancing the productivity, the significance of motivational factors, the organisational climate prevailing in TTPS, the attitude towards the motivational factors and to offer suggestions to TTPS management and Policy makers for getting maximum productivity. **Methods/Statistical Analysis:** About 100 samples contribute to the sampling frame of the study. The primary data consists of respondent's views, attitude measurement obtained through a well-framed interview questionnaire based on the objectives. The secondary data was collected from the records available in the organization. Percentage analysis is the simplest way of analysing inter-related characteristics of data. The bar charts and pie diagrams facilitate quick and accurate comparison of collected data as well as aid analytical thinking and investigation further. Chi-Square Test is generally employed to find out whether there is a significant difference between the level of attitude and independent variables at a specified level of significance. Rank correlation is applied to find out which pair of respondent groups that have the nearest approach to the concerned aspect. **Findings:** Some common indications of motivation are willingness to work, better output, definite sense of belonging and pride in the Organization. Some common indications of De-motivations are increased Absenteeism, excessive labour turn over, low output and productivity, increased rate of accidents and wastages, frustrations and unrest etc., when engineers are dissatisfied about their jobs; they are concerned about the environment in which they are working. On the other hand, when engineers feel good about their job, this has to do with the work itself. The first categories of needs are called Hygiene Factors (dissatisfies) and the second categories of needs are called as motivators. According to this, the absence of Hygiene factors may dissatisfy the workers, but will not de-motivate them. Similarly, in the presence of De-motivators, workers may be motivated, but their absence does not make them dissatisfied. To realize the above factors, the respondents were required to give their opinion regarding 14 statements about various Motivators / De-motivators as prevailing in TTPS. **Applications/Improvements:** In this study, an attempt has been made to analyse the motivational factors enhancing the productivity in Tuticorin Thermal Power Station, Tuticorin. On the whole the level of attitude of the engineers towards enhancing the productivity is medium. Based on the findings of the study some valuable suggestions have been offered. It is hoped that the findings and suggestions will be useful in improving/sustaining the motivational climate in Tuticorin Thermal Power Station, Tuticorin. This study is restricted to the Engineers of Tuticorin Thermal Power Station. Similar studies may be conducted on the workers to find out the motivational climate for the entire Organization. Similar studies may be conducted in Thermal Power Stations like Mettur Thermal Power Station, Neyveli Thermal Power Station and Power Stations belonging to the NTPC for the purpose of comparison.

Keywords: Job Satisfaction, Motivation, Motivators, Organizational Climate, Productivity

1. Introduction

Productivity is a new concept in the industrial world. Today every country wants to make rapid industrial development. But the industrial development depends on the productivity of industrial units. Tells productivity of any organization or work unit depends upon the people who work in that unit¹. Given the same inputs, people can produce more if they work more, thus increasing the productivity of the work unit. It may also be possible to get people to work more or work better in higher proportion with marginal increase in some inputs. How to make better work is an issue that requires an understanding of what motivates people to work more which in turn increases the productivity. High productivity means doing a piece of work in the shortest period of possible time incurring the least expenditure on inputs, without compromising of recycling wastages of all physical resources that are used, in the most cost – effective manner. Higher productivity means basically an increase of the output at a comparatively higher rate than the rate of increase of the expenditure incurred on the inputs².

For a higher managerial productivity all manager today have to, therefore, know not only what is meant by productivity but also how to measure it and be familiar with the various techniques of improving productivity, such as methods study, work measurement, manpower planning, SQC, PERT, fractional replication techniques of designing experiments and operations research for maximizing the utilization of resources and minimization of wastages, and the time required for performing various tasks or getting them executed. The organizations in order to get maximum productivity from the individuals, try to provide a positive motivational climate. Considering the importance of the workers motivation, the researcher wishes to conduct this study. A highly motivated employee will contribute his best to the organization. Productivity will increase & the labour turnover and absenteeism will be low. An attempt has been made in this study to analyse the various factors influencing productivity in Tuticorin Thermal Power Station. This organization is a public sector enterprise like and all public sector enterprises, the prevailing motivational factors influencing productivity may not be optimum. Hence there is a good reason to believe that the results of the study will be useful in improving productivity in this organization.

1.1 Motivational Factors in an Organization

Several studies have been conducted on various motivational factors enhancing the productivity of an organization. Observed that jobs in public sector are somewhat over – secure resulting in sub-optimization of the managerial resources and pay-wise, as compared to private sector's managers, they feel that they are under-paid³. Examined the major focus of this study was on the various factors that influence an employee's attitude and willingness to work in the content of the existing socio-economic conditions. This study was based on interviews and discussions with 100 employees of TTPS Tuticorin to examine the effect of various internal and external factors in the level of job satisfaction⁴. The main findings of this study reveal that most of the employees were satisfied with their jobs because it offered attractive pay scales, good working conditions and a healthy working atmosphere. On the other hand most of them are frustrated because of family problems. As far as internal motivations are concerned, the nature of relationship between line and staff has as important bearing in the level of job satisfaction. Moreover, all the employees felt that union was helpful to the employees in various ways. Participation in decision making is an important motivational factor among TTPS Tuticorin workers. Finally all the employees indicated a drive to acquire more facilities and power in their hands which showed that their behaviour was good oriented.

To conclude, the author feels that though both internal and external motivations factors contributed significantly towards enhancing the level of job satisfaction of TTPS Tuticorin employees, the latter were more significant. Focuses on the efforts of BHEL, increasing a productive organizational climate⁵. The author states that for introducing the productivity culture, they called for joint labour management. Study indicates appointment of a formal productivity department headed by a Productivity General Manager⁶. They had employed a Productivity coordinator in each work area to create awareness; they gave enormous attention for training communication and quality circles.

The success of their efforts was to the tune of 1.5% to turnover in tangible terms, and qualitative improvement in many areas like working conditions, reduction in rejection, increased safety, improved cash inflow, reduction in inventories, and reduction in work load, reduced operator fatigue and reduced downtime of machines. Concluded by saying that their sustained involvement

with the productivity effort gave them insights in the need to emphasis the right values like self-discipline and self-prioritization, free exchange of ideas and participation in their industries⁷.

The study will be helpful to both the TTPS management and similar power stations to provide an effective motivational climate for achieving higher productivity by workers. This study is focussed mainly on the workers of Tuticorin Thermal Power Station. Vision survival and growth of any organization depends considerably on the performance of its employees and the performance of an employer depends on two factors: Ability to Work and Will to Work^{8,9}.

The first is determined by the quality of education, training and experience that he has acquired. The second factor i.e., willingness to work is more difficult to manage as it involves change in behaviour and attitude of a person towards work so as to give overall better performance. Motivation and morale of people is the important group of human factors that determine productivity. Wage incentive schemes, labour participation in management, communication system, informed group relations, promotion policy, union management relations, quality of leadership etc. are the main factors governing employee's willingness to work. Working conditions like working hours, sanitation, ventilation, lighting, temperature, safety measures and welfare amenities like housing, schools, clubs, libraries, sub-sided canteen, transport etc. also influence the motivation and morale of employees which in turn increase the productivity. So it is proposed of conduct this study in TTPS. Also the study is limited based on three factors namely resource, time and individual perceptions. Present study will show the importance of various factors influencing productivity. The study will also provide an idea about workers' productivity in various departments and therefore it will be helpful for the management to take necessary steps to improve productivity of the entire organization.

Mission

- To analyse the various factors enhancing the productivity.
- To analyse the significance of motivational factors
- To analyse the motivational climate for Engineers prevailing in TTPS.
- To study the Engineers attitude towards the various motivational factors enhancing the productivity

- To offer suggestions to TTPS management and Policy makers so as to modify the present climate for getting maximum productivity.

2. Significance of Productivity and Motivational Factors

Productivity is a relative term indicating the ratio between total output and the total input used therein. Emphasised efficient use of productivity resources may improve productivity but the volume of the production system whereas productivity reflects its efficiency¹⁰. Said Motivation is an important function in which every manager performs for actuating the people to work for the accomplishment of objectives of the organization¹¹. People are becoming more knowledgeable speedily and steadily. Productivity is defined as the ratio of output of the system to the input of system as defined by¹².

$$\text{Productivity} = \frac{\text{Output of the system}}{\text{Input of the system}} \quad (1)$$

Where output of the system means the amount produced or number of items produced, input means the various resources employed. Productivity means reaching the optimum level of performance with the minimum expenditure of resources. Productivity is a combination of effectiveness and efficiency of the enterprise, concerned with the performance. Efficiency is tied with the resource utilization.

2.1 Approaches to Motivation

Viewed the approach to motivation and human behaviour recognizes that people are complex¹³. This approach encounters some of the simplistic traditional assumptions about positive relationship between satisfaction and performance. Porter and Lawler contend that the above relationship should be expanded to include perceived equity or fairness as a variable that influences job behaviour. Perception is the way an individual views the job. The Figure 1 contains a simplified Porter and Lawler's model.

This view is further affected by what people expect to receive from jobs. If a worker is motivated to expend effort on his job, he expects to receive two types of rewards. (1) Intrinsic and (2) Extrinsic.

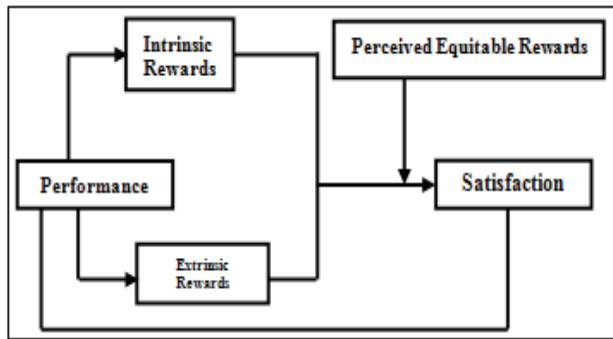


Figure 1. Simplified Porter and Lawler's Model.

3. Proposed Design

3.1 Research Methodology

Statistical tools have been used to analyse the effectiveness of present motivational climate and the attitude of personnel towards motivational factors in TTPS, Tuticorin.

3.2 Research Design

To measure the attitude of employees towards motivational factors, various statements with each response rated on a 5 point "LIKERT" type scale ranging from strongly agree to strongly disagree were used. In this study, convenience sampling method is chosen for drawing samples from various engineers shown in Table 1.

3.3 Sampling

Thus, 100 samples contribute to the sampling frame of the study.

Table 1. Samples from Various Engineers

Department	No. of Samples (Engineers)	Population (Engineers)
Operation Engineer	40	230
Maintenance Engineer	40	190
Administrative Engineer	20	80
Total	100	500

3.4 Data Collection Method

The data collected was based on primary data and secondary data. The primary data consists of respondent's views, attitude measurement obtained through a well-framed interview questionnaire based on the objectives. The secondary data was collected from the records available in the organization.

3.5 Simple Percentage Analysis

It is the simplest way of analysing inter-related characteristics of data. The bar charts and pie diagrams facilitate quick and accurate comparison of collected data as well as aid analytical thinking and investigation further.

3.6 Chi-Square Test

This test is generally employed to find out whether there is a significant difference between the level of attitude and independent variables at a specified level of significance referred from book by ¹⁴. The following formula is used to find out the value of χ^2 .

$$\chi^2(cv) = n \left\{ \sum \frac{N_{ij}^2}{n_{io} \times n_{oi}} \right\} \quad (2)$$

$$df = (r - 1)(c - 1) \quad (3)$$

3.7 Rank Correlation

Rank correlation is applied to find out which pair of respondent groups that have the nearest approach to the concerned aspect referred from book by ¹⁴. Spearman's Rank Correlation is given by the formula,

$$\chi^2(cv) = n \left\{ \frac{6 \sum D^2}{N^3 - N} \right\} \quad (4)$$

4. Analysis and Interpretation

4.1 Attitude of the Engineers towards Various Motivators/De-Motivators

Some common indications of motivation are willingness to work, better output, definite sense of belonging and pride in the Organization. Some common indications of De-motivation are increased Absenteeism, excessive

labour turn over, low output and productivity, increased rate of accidents and wastages, frustrations and unrest etc., when engineers are dissatisfied about their jobs; they are concerned about the environment in which they are working.

On the other hand, when engineers feel good about their job, this has to do with the work itself. The first categories of needs are called Hygiene Factors (dis-satisfiers) and the second categories of needs are called as motivators. According to this, the absence of Hygiene factors may dissatisfy the workers, but will not de-motivate them. Similarly, in the presence of De-motivators, workers may be motivated, but their absence does not make them dissatisfied. To realize the above factors, the respondents were required to give their opinion regarding 14 statements about various Motivators/De-motivators as prevailing in TTPS.

From the Table 2, it could be seen that as against a maximum score (Scale Value) of $5 \times 100 = 500$, the actual score is 369. The level of attitude is high.

The Figure 2 shows comparison within Organisation.

From the Table 3, the score of 233 as against a maximum possible 500 indicates that the capabilities of the engineers are not fully utilized by the Organization. The level of attitude in this aspect is poor.

Table 2. S1- Comparison within organisation

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	140
O.E.	40	155
A.E.	20	74
Total	100	369

M.E. – Maintenance Engineer; O.E. – Operation Engineer; A.E. – Administrative Engineer.

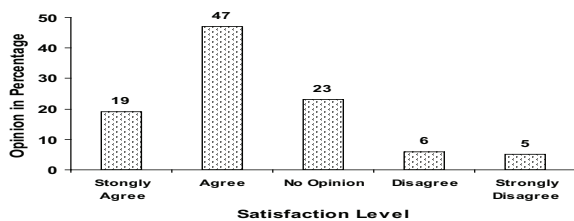


Figure 2. Comparison within Organisation.

Figure 3 shows utilization of capabilities.

From the Table 4, the score of 283 is not very good. The level of attitude is medium. The engineers feel that only limited opportunities are available for developing their skill. The management may provide new avenues for skills improvements.

The Figure 4 shows opportunities given to develop skills.

Table 3. S2 - Utilization of Capabilities

Engineer Group	Total Respondents	Total Scale Value
M.E	40	97
O.E	40	85
A.E	20	51
Total	100	233



Figure 3. Utilization of Capabilities.

Table 4. S3 - Opportunities Given to Develop Skills

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	124
O.E.	40	101
A.E.	20	58
Total	100	283



Figure 4. Opportunities Given to Develop Skills.

As shown in Table 5, the Score of 290 is less than the median (indifferent) score of 300. The level of attitude is medium. Hence, there is scope for giving more freedom to the engineers in decision making.

Figure 5 shows freedom given for decision making

Table 6 shows that the total score of 268 out of maximum possible score of 500 is less than the median (indifferent) score of 300. The level of attitude is medium. There is scope for improvement in communication. Operation Engineers are especially not satisfied with communications.

Figure 6 shows information regarding TTPS development.

From the Table 7, the score of 281 is just below the indifferent score of 300. Improvement in this regard is indicated. The level of attitude is medium.

Table 5. S4 - Freedom Given for Decision Making

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	119
O.E.	40	114
A.E.	20	57
Total	100	290

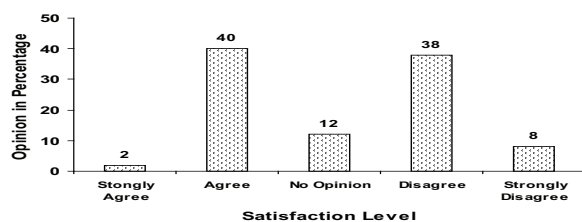


Figure 5. Freedom Given for Decision Making.

Table 6. S5 - Information Regarding TTPS Development

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	123
O.E.	40	78
A.E.	20	67
Total	100	268

Figure 7 shows redressing the grievances impartially.

From the Table 8, the above score of 254 out of maximum possible score of 500 indicates that job rotation is not adopted liberally. The level of attitude is medium. Only the office staff seems to be satisfied in this aspect. Management should try more job rotations as this is an important motivator.

Figure 8 shows Job rotation.

From the Table 9, the above score of 223 out of the maximum possible score of 500 indicates that the level attitude is very poor. The Organization can take much more interest in bettering the personal welfare of the Engineers.

The Figure 9 shows personal welfare of the engineers.

From the Table 10, the above score of 325 out of the maximum possible score of 500 indicates that there is a

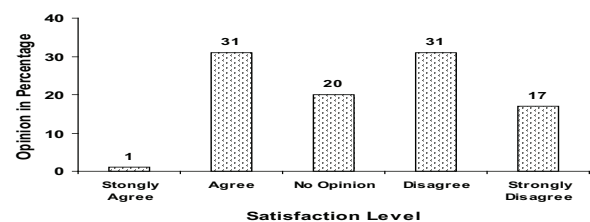


Figure 6. Information Regarding TTPS Development.

Table 7. S6 - Redressing the Grievances Impartially

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	124
O.E.	40	108
A.E.	20	49
Total	100	281

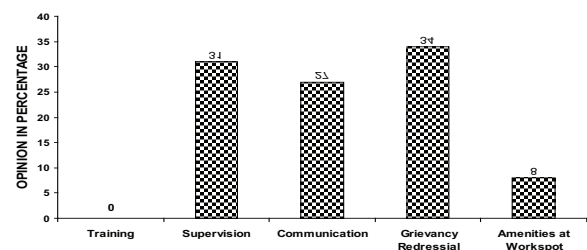
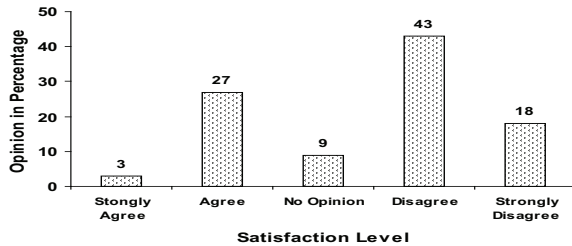


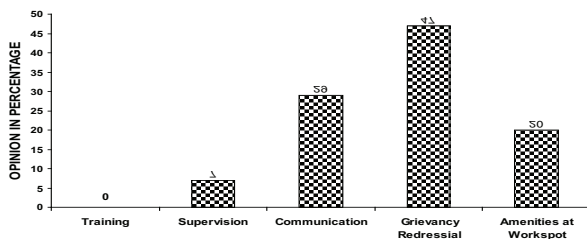
Figure 7. Redressing the Grievances Impartially.

Table 8. S7 - Job Rotation

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	80
O.E.	40	98
A.E.	20	76
Total	100	254

**Figure 8.** Job Rotation.**Table 9.** S8 - Personal Welfare of the Engineers

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	80
O.E.	40	94
A.E.	20	49
Total	100	223

**Figure 9.** Personal Welfare of the Engineers.

fair amount of team spirit existing in TTPS. The level of attitude is high.

The Figure 10 shows the existing Team spirit in TTPS.

In Table 11, as per the score of 324, the engineers feel that there is favouritism existing in TTPS. The level of attitude is medium. This needs rectification.

Table 10. S9 - Team Spirit Exists in TTPS

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	130
O.E.	40	138
A.E.	20	57
Total	100	325

**Figure 10.** Team Spirit Exists in TTPS.**Table 11.** S10 - Favouritism Exists in TTPS

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	134
O.E.	40	137
A.E.	20	53
Total	100	324

Figure 11 shows the existing level of Favouritism in TTPS.

From the Table 12, the above score of 370 out of maximum possible score of 500 is a very good score indicates a high level of attitude. The Industrial climate in this regard is cordial and peaceful. This augurs well for the motivational climate.

The Figure 12 shows Industrial Climate in TTPS.

In Table 13, the score of 249 shows that the management is generally lenient. This is good so long as a lenient attitude does not lead to rank indiscipline among the engineers.

Figure 13 shows Stringent Disciplinary Measures adopted in TTPS.



Figure 11. Favouritism Exists in TTPS.

Table 12. S11 - Industrial Climate in TTPS

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	141
O.E.	40	157
A.E.	20	72
Total	100	370

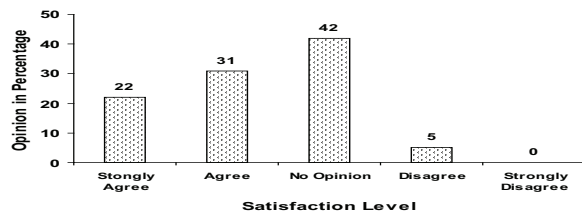


Figure 12. Industrial Climate in TTPS.

Table 13. S12 - Stringent Disciplinary Measures in TTPS

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	94
O.E.	40	104
A.E.	20	51
Total	100	249

From the Table 14, the score of 195 indicates a low level of attitude. The Engineers are highly dissatisfied with action taken on pollution control measures in TTPS. This needs improvement so as to create pollution free atmosphere.

Figure 14 shows the level of Pollution Control Measures.

As per the Table 15, the total scale value of 385 indicates a high level of attitude. It shows that in the opinion



Figure 13. Stringent Disciplinary Measures in TTPS.

Table 14. S13 - Pollution Control Measures - Satisfactory

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	83
O.E.	40	80
A.E.	20	32
Total	100	195

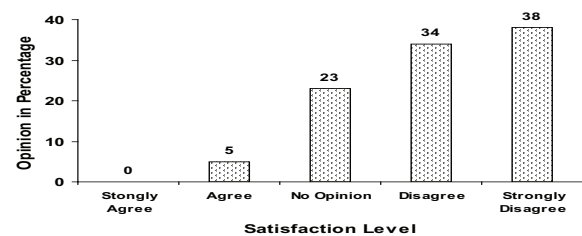


Figure 14. Pollution Control Measures.

Table 15. S14 - Unbiased Performance Appraisals in TTPS

Engineer Group	Total Respondents	Total Scale Value
M.E.	40	156
O.E.	40	154
A.E.	20	75
Total	100	385

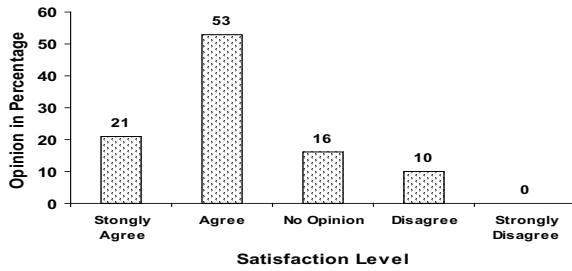


Figure 15. Unbiased Performance Appraisals in TTPS.

of the engineers, the performance appraisals are highly unbiased.

Figure 15 shows Unbiased Performance Appraisals in TTPS.

5. Cumulative Total Scale Values

In order to get overall pictures of the motivational climate prevailing in TTPS the cumulative total scale value is arrived at as shown in Table 16.

From the Table 16, the maximum possible score (scale value) is $14 \times 5 \times 100 = 7000$; the median (score of indifference) is $14 \times 3 \times 100 = 4200$.

As compared to the above, the actual score of 4049 indicates the level of attitude is MEDIUM. The specific scores against each of the statement will give an idea of the areas where improvements are warranted.

6. Comparison of Engineer's Group Influencing Level of Attitude based on Chi-square Test

Chi-square test is applied to find out if there is a statistically significant difference in the level of attitude of 1. Engineer Groups, 2. Income Groups and 3. Age Groups.

6.1 Engineer Group (Occupation) Influencing the Level of Attitude

H_0 : The group (occupation) of the engineer does not influence the level of attitude.

Table 17 shows, ENGINEER GROUP (OCCUPATION) INFLUENCING THE LEVEL OF ATTITUDE, the Calculation

Table 16. Cumulative Total Scale Values

Statements	Engineer Groups Scale Value			
	M.E.	O.E.	A.E.	TOTAL
S1	140	155	74	369
S2	97	85	51	233
S3	124	101	58	283
S4	119	114	57	290
S5	123	78	67	268
S6	124	108	49	281
S7	80	98	76	254
S8	80	94	49	223
S9	130	138	57	325
S10	134	137	53	324
S11	141	157	72	370
S12	94	104	51	249
S13	83	80	32	195
S14	156	154	75	385
TOTAL	1625	1603	821	4049

Table 17. Engineer Group (Occupation) Influencing the Level of Attitude

Engineer Group	Total Respondents	% of the Total	Total Scale Value
M.E.	40	40	1667
O.E.	40	40	1595
A.E.	20	20	845
TOTAL	100	100	4107

$$df = 2; \chi^2(CV) = 2.47 \quad \chi^2(TV) = 5.99$$

shows that the calculated value of chi-square is less than tabulated value at 5% significant level.

H_1 : There is no significant relationship between the group (occupation) of the engineers and the level of the attitude.

6.2 Income Level Influencing the Level of Attitude

H_0 : The income does not influence the level of attitude of the engineer.

Table 18. Income Level Influencing the Level of Attitude

Income Group	Total Respondents	% of the Total	Total Scale Value
Rs.10000 - 14000	24	24	911
Rs.14000 - 18000	51	51	2065
Rs.18000 - 22000	23	23	1029
Total	100	100	4107

$$df = 2; x^2(CV) = 2.47 \quad x^2(TV) = 5.99$$

Table 19. Age Factor Influencing the Level of Attitude

Age Group	Total Respondents	% of THE Total	Total Scale Value
25-35	32	32	1264
35-45	47	47	2012
Above 45	21	21	831
Total	100	100	4107

$$df = 2; x^2(CV) = 2.47 \quad x^2(TV) = 5.99$$

Table 18 shows, income level influencing the level of attitude.

H_1 : There is a significant relationship between the income level of the engineers and level of attitude.

6.3 Age Factor Influencing the Level of Attitude

H_0 : The age of the engineer does not influence the level of attitude.

The Table 19 shows, age factor influencing the level of attitude.

H_1 : There is a significant relationship between the age group of the engineers and level of attitude.

7. Opinion/Attitude towards Privatisation/Corporatisation

Respondents were asked to give their opinion regarding the following 6 statements about the proposed privatization/corporatisation of the power sectors.

Table 20. Opinion/attitude towards privatisation/corporatisation

Statements	Engineer Groups Scale Value			
	M.E	O.E.	A.E.	Total
1	096	101	053	250
2	088	093	054	235
3	105	102	051	258
4	110	092	060	262
5	090	111	054	255
6	081	075	042	198
Total	570	574	314	1458

Privatisation/Corporatisation will lead to

- Increased Efficiency.
- Increased Power Tariff.
- Better Service to the Public.
- Higher Earnings for the Engineers.
- Higher Tax Revenue for the Government.
- Lessor Job Security for the Engineers.

Table 20 shows, the opinion/attitude towards privatisation/corporatisation. Against a maximum possible score of 3000 the actual score is only 1458. This shows a very low level of attitude towards Privatization. The engineers seem to be opposed to Privatisation/Corporatisation.

8. Ranking of Existing Perquisites

Engineer's welfare measures are one of the important motivating factors. Through an attractive package of welfare measures, the management can undoubtedly attract and retain better people. This enables the engineers to enjoy a fuller and richer life and partly economic to improve their efficiency and partly civic to develop among them a sense of responsibility and dignity as noble citizen of the Nation.

The Table 21 shows, the ranking of existing perquisites, as the perquisites rank high in the opinion of the engineers, the organization should be careful when any downsizing of the above perquisites are considered as an economy measure.

9. Rank Correlation

In order to find out which pair of engineer groups will have the nearest attitude towards the existing perquisites.

Rank correlation between the following pairs is calculated as follows. Spearman's Rank Correlation is given by the formula.

$$R = 1 - \left\{ \frac{6 \sum D^2}{n^3 - n} \right\} \quad (5)$$

In view of the above, the respondents were asked to rank the following perquisites provided to the engineers by assigning an appropriate rank as per their opinion.

- Generation (Production) Incentive.
- Rent free accommodation.
- Free Electricity and Water Supply.
- School/Hospital Facilities.
- Medical Reimbursement.
- Transport Facilities.

Table 21. Ranking of existing perquisites

Perquisites	Rank
Rent free Accommodation	First
Retirement Benefits	Second
Free Electricity and Water Supply	Third
Leave Benefits	Fourth
Generation (Production) Incentive	Fifth

- Leave Travel Concession.
- Leave Benefits such as Earned Leave, Medical Leave, Maternity Leave, Study Leave etc.,
- Loans for House Building, Purchasing of Vehicles/Computers, Education of Wards, Marriage of Children etc.,
- Retirement Benefits such as Gratuity, Pension, Encashment of Leave etc.

The Table 22 shows, the rank as per respondents opinion.

- Rank correlation between maintenance engineers and operation engineers.
 $R = 1 - [6 \times 6 / (10^3 - 10)]$
 $= 1 - 36/990$
 $= 0.964$
- Rank correlation between maintenance engineers and operation engineers.
 $R = 1 - [6 \times 8 / (10^3 - 10)]$
 $= 1 - 48/990$
 $= 0.952$
- Rank correlation between maintenance engineers and operation engineers.
 $R = 1 - [6 \times 10 / (10^3 - 10)]$
 $= 1 - 60/990$
 $= 0.939$

Table 22. Rank As Per Respondents Opinion

Statement	M.E.	O.E.	A.E.	[R1-R2] ²	[R1-R3] ²	[R2-R3] ²
S1	5	5	4	0	1	1
S2	1	1	1	0	0	0
S3	3	2	3	1	0	1
S4	8	7	9	1	1	4
S5	6	6	6	0	0	0
S6	10	10	10	1	1	0
S7	4	9	8	1	4	1
S8	7	4	5	0	1	1
S9	2	8	7	1	0	1
S10		3	2	1	0	1
$\sum D_2$				6	8	10

$$df = 2; x^2(CV) = 2.47 \quad x^2(TV) = 5.99$$

From the co-efficient of correlation, it is obvious that each pair of engineers have highly correlated approach as could be seen from the value of co-efficient which are nearly 1 (one). However Maintenance Engineers and Operation Engineers are nearer in their approach.

10. Conclusion and Future Work

In this study, an attempt has been made to analyse the motivational factors enhancing the productivity in Tuticorin Thermal Power Station, Tuticorin. On the whole the level of attitude of the engineers towards enhancing the productivity is medium. Based on the findings of the study some valuable suggestions have been offered. It is hoped that the findings and suggestions will be useful in improving/sustaining the motivational climate in Tuticorin Thermal Power Station, Tuticorin. This study is restricted to the Engineers of Tuticorin Thermal Power Station. Similar studies may be conducted on the workers (who are basically illiterate/semiliterate) to find out the motivational climate for the entire Organization). Similar studies may be conducted in Thermal Power Stations like Mettur Thermal Power Station, Neyveli Thermal Power Station and Power Stations belonging to the national Thermal Power Corporation for the purpose of comparison.

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