# CHAPTER IV

## ANALYSIS AND INTERPRETATION OF DATA


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4.5 Result of Testing the Fourth Null Hypothesis

## 4.1 Introduction

This chapter deals with the data collected by the tools described in the earlier chapter. Here each hypothesis has been examined against the results that are found after the statistical treatment of the data. All the raw data were given to the computer for statistical treatment.

## 4.2 Result of Testing the First Null Hypothesis

The first null hypothesis was :

There is no relationship between managerial effectiveness and intelligence of the educational managers.

To test this hypothesis product-moment correlation technique was used.

From Table-3, it is seen that for the top 15 school principals it was found to have a correlation of .172 and for bottom 15 principals it has a correlation of -.264. In both the cases the co-efficients of correlation are not significant at .05 level of significance because the table value of r is much

greater than these two values. So the null hypothesis is retained.

From the observed result it can be concluded that intelligence does not have a bearing on managerial effectiveness of the school principals.

Though it was expected logically that there would be a significant relationship between intelligence and managerial effectiveness of the educational managers of the school, the picture is totally different.

TABLE - 3

CORRELATION CO-EFFICIENTS OF MANAGERIAL EFFECTIVNESS WITH INTELLIGENCE, ACHIEVEMENT MOTIVATION AND ROLE STRESS

| | Top Group of Principals | Bottom Group of Principals |
|---|---|---|
| Intelligence | .172 | -.265 |
| Achievement Motivation | -.216 | .215 |
| Role Stress | -.425 | .001 |

From Table-4 it is seen that, the highest score of intelligence for the top group was 57 which was scored by only one principal. According to the Raven's Progressive Matrices he lies at the 95th percentile of the total score and got grade I which means "intellectually superior". The minimum score secured by the group was 31, that is, just one point above the median and belongs to grade III+. The mean score of this group is 44.87 which indicates average intelligence and the standard deviation is 6.84.

TABLE - 4

THE MEAN, S.D. MAXIMUM AND MINIMUM SCORES OF THE TOP GROUP ON THE FOUR VARIABLES

| Sl. No. | Variables | Scores For Top 15 Principals | | | |
|---|---|---|---|---|---|
| | | Mean | S.D. | Maximum Score | Minimum Score |
| 1. | Managerial Effectiveness | 226.55 | 13.52 | 250.43 | 211.00 |
| 2. | Intelligence | 44.87 | 6.84 | 57 | 31 |
| 3. | Achievement Motivation | 4.87 | 5.96 | 18 | -2 |
| 4. | Role Stress | 63.73 | 24.80 | 107 | 9 |

So it can be said that one can be an effective school management with only average intelligence. But if we look at the scores obtained by these 15 principals separately, it reveals a bit different picture from this generalized result for top group.

According to the test, there are eight principals who belong to the group of above average, amongst whom one has scored 'intellectually superior'. The interview with these principals revealed that they are more sharp and prompt in dealing with the problems of the school than the rest seven principals. They have a more matured and pointed idea about the management of the school than the others in the group.

On the other hand, for the bottom group of principals (Table-5) the highest score of intelligence was 44 which was scored by two principals and the minimum score was 17. The average performance of the total group was 33.73. Each one of this group had shown an intellectually average performance according to the test used. Out of 15 principals, four had scored even below the median point, that is, below 30, and two had just touched the median point. The standard deviation of the group was 8.14. So compared to the top group, this group is less homogenous in nature.

TABLE - 5

THE MEAN, S.D. MAXIMUM AND MINIMUM SCORES OF THE BOTTOM GROUP ON THE FOUR VARIABLES

| Sl. No. | Variables | Scores For Top 15 Principals | | | |
|---|---|---|---|---|---|
| | | Mean | S.D. | Maximum Score | Minimum Score |
| 1. | Managerial Effectiveness | 158.62 | 27.71 | 185 | 75 |
| 2. | Intelligence | 33.73 | 8.14 | 44 | 17 |
| 3. | Achievement Motivation | 2.67 | 4.48 | 14 | -2 |
| 4. | Role Stress | 74.40 | 28.39 | 118 | 17 |

In order to find out if there is any significant difference between the means of the two groups, t-test was done. The value of t was 4.07 which is much higher than the table value of t at .05 level (t=2.05), so there exists a significant difference between the two means.

## 4.3 Result of Testing the Second Null Hypothesis

The second null hypothesis was :

There is no relationship between managerial

effectiveness and achievement motivation of the educational managers.

The product-moment correlation technique was used to test this hypothesis.

For top 15 principals the correlation was found to be -.216, and for the bottom group it was .215 (Table-3). Here, also the null hypothesis is retained at .05 level of significance as these two co-efficients are not significant, from which it can be said that managerial effectiveness of the school principals does not have any significant relationship with their achievement motivation. From the other statistics it is evident that the average performance of the top group of principals on TAT was 4.87 and the maximum score obtained was 18 and the minimum was -2 (Table-4).

For the bottom group, the mean was 2.67 and the maximum and minimum scores were 14 and -2 respectively (Table-5).

The t-test result shows that there is no significant difference between the two means - the top and the bottom groups, at .05 level.

The standard deviation of the top and bottom groups were 5.96 and 4.48 respectively, showing a relatively much homogeneity in the latter group.

## 4.4 Result of Testing the Third Null Hypothesis

The third null hypothesis was :
There is no relationship between managerial effectiveness and role stress of the educational managers.

To test this hypothesis product-moment correlation technique was used.

The result (Table-3) shows that for the top 15 principals the correlation between managerial effectiveness and role stress is -.425 and for bottom group it is .001. Both the co-efficients are not significant at .05 level of significance because the table value of r is much higher than what has been found. So the null hypothesis is retained which confirms that there is no significant relationship between managerial effectiveness and role stress of the educational mangers.

It is seen from the principals' response to the ORS scale, that for top 15 principals the average role stress score was 63.73 where the maximum score was 107 and the minimum was 9 (Table-4).

For the bottom group of principals the average score of role stress was 74.40 where the maximum score was 118 and minimum was 17 (Table-5).

The standard deviation scores for the top and the bottom group were 24.80 and 28.39 respectively, showing heterogeneity in both the groups.

Further, the t-test result shows that there was no significant difference between the means of the top and the bottom groups of principals.

In the Organizational Role Stress (ORS) scale there were ten types of role stresses to which the principals responded. The means of each of these role stresses were calculated for both th groups which is shown in Table-6.

TABLE - 6

MEANS OF TEN ROLE STRESSES IN ORS SCALE

| Sl. No. | Different role stresses according to ORS Scale | Means for Top 15 Principals | Means for Bottom 15 Principals |
|---|---|---|---|
| 1. | Inter Role Distance | 5.8 | 6.73 |
| 2. | Role Stagnation | 5.6 | 7.47 |
| 3. | Role Expectation Conflict | 6.87 | 6.93 |
| 4. | Role Erosion | 7.93 | 8.87 |
| 5. | Role Overload | 6 | 8.67 |
| 6. | Role Isolation | 6.2 | 8.2 |
| 7. | Personal Inadequacy | 6.93 | 7.87 |
| 8. | Self Role Distance | 6.53 | 7.47 |
| 9. | Role Ambiguity | 4.13 | 4.53 |
| 10. | Resource Inadequacy | 7.73 | 7.67 |

In order to find out the significance of the differences among the means of these ten role stresses, Analysis of variance (ANOVA) was used for both the groups. For the top 15 principals the F value was 1.55 (Table-7) and for the bottom 15 principals it was 1.44 (Table-8). These two F values were much less than the value of Fat .05 level : So it can be said that there was no significant difference between the means.

TABLE - 7

SUMMARY OF ANOVA FOR THE TOP GROUP

| Source of Variation | df | Sums of Squares | Mean Square (Variance) | F |
|---|---|---|---|---|
| Among the means of Conditions | 9 | 164.69 | 18.299 | 1.55 |
| Within Conditions | 140 | 1657.40 | 11.840 | |

TABLE - 8

SUMMARY OF ANOVA FOR THE BOTTOM GROUP

| Source of Variation | df | Sums of Squares | Mean Square (Variance) | F |
|---|---|---|---|---|
| Among the means of Conditions | 9 | 203.36 | 22.60 | 1.44 |
| Within Conditions | 140 | 2195.60 | 15.68 | |

The correlation co-efficients of each of these ten role stresses with managerial effectiveness were calculated which are given in Table-9, none of these correlation co-efficients were significant at .05 level.

TABLE - 9

CORRELATION CO-EFFICIENTS OF TEN ROLE STRESSES

WITH MANMAGERIAL EFFECTIVENESS

| Sl. No. | Different role stresses according to ORS Scale | Correlation Coefficients For top 15 Principals | Correlation Coefficients For bottom15 Principals |
|---|---|---|---|
| 1. | Inter Role Distance | - .18 | - .23 |
| 2. | Role Stagnation | - .06 | - .08 |
| 3. | Role Expectation Conflict | - .26 | - .04 |
| 4. | Role Erosion | - .49 | - .05 |
| 5. | Role Overload | - .18 | - .20 |
| 6. | Role Isolation | - .15 | - .02 |
| 7. | Personal Inadequacy | - .24 | .002 |
| 8. | Self Role Distance | - .23 | .05 |
| 9. | Role Ambiguity | - .43 | .19 |
| 10. | Resource Inadequacy | - .49 | - .15 |

## 4.5 Result of Testing the Fourth Null Hypothesis

The fourth null hypothesis was :

There is no significant contribution of intelligence, achievement motivation and role stress together in predicting the managerial effectiveness of educational managers.

As the predictive value of all the variables together - intelligence, achievement motivation and role stress, in determining managerial effectiveness was saught, multiple regression correlation technique was used.

The result for the top group of principals shows (Table-10) that F = 2.071 and P (Tail) = 0.1624. Since P (Tail) value is greater than 0.05, the null hypothesis is accepted at 0.05 level of significance. This means that the linear regression of managerial effectiveness on the variables intelligence, achievement motivation and role stress, does not explain the data.

Multiple R-square for this group of principals shows that only 36.09% of the total variation in mangerial effectiveness is explained by intelligence, achievement motivation and role stress which is not significant at 0.05 level of significance.

Similarly, for the bottom group (Table-11) of principals F = .337 and P (Tail) = .7991. Here also P (Tail) value is greater than 0.05 and, thereby, the null hypothesis is retained at 0.05 level of significance. For this group the Multiple R-square is only 0.0842

which shows that 8.4% of the total variation in managerial effectiveness of the bottom group is explained by intelligence, achievement motivation and role stress which is not significant at 0.05 level of significance.

TABLE - 10

MULTIPLE REGRESSION FOR THE TOP GROUP

| Analysis of Variance | | | | | |
|---|---|---|---|---|---|
| | Sum of Squares | df | Mean Square | F Ratio | P (Tail) |
| Regression | 923.5764 | 3 | 307.8588 | | |
| Residual | 1635.4946 | 11 | 148.6813 | 2.071 | 0.1624 |

* Multiple R - Square = 0.3609

TABLE - 11

MULTIPLE REGRESSION FOR THE BOTTOM GROUP

| Analysis of Variance | | | | | |
|---|---|---|---|---|---|
| | Sum of Squares | df | Mean Square | F Ratio | P (Tail) |
| Regression | 904.6466 | 3 | 301.5489 | 0.337 | 0.7991 |
| Residual | 9845.2148 | 11 | 895.0195 | | |

* Multiple R - Square = 0.0842