Research Notes

Measuring Interpersonal Organizational Relationship in Development Administration

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AN efficient administrative machinery is an essential prerequisite for the success of agricultural development programs. It has been increasingly felt that agricultural development is a continuous process and that a dynamic administration is needed to execute its programs. Undoubtedly, the administration so far has been keeping pace with the changing approaches in agricultural development but the crucial factor of human approach in administration has been missing. This research work was primarily conducted to study interpersonal relations existing in five administrative units called community development blocks in Delhi Territory.

With the increased concretion in the study of society, measurements have become potent tolls for studying qualitative aspects of social events or phenomena. At present, the social scientists are not only interested in the study of the quantitative and manifest variables; they have also been trying to assign numerals even to various latent variables. This is, in fact, the need of the day. Social science research has reached a stage where quantification of properties and characteristics of objects are unavoidable. The only point of contention is the extent of sophistication desirable for measuring latent variables.

Study of administrative organizations in totality involves many qualitative variables that need to be measured for better understanding of the existing socio-psychological dimensions of human interaction. "Interpersonal relations" is one out of many such dimensions that calls for a scientific investigation based on quantified evidence. There is a need for such a measure so that something could be readily used by the officials interested in finding out the relationship pattern existing in their organizations The present research paper presents two such measurements evolved to study the relationship between superior officers and subordinates that existed in the five Community Development Blocks* in the Union Terri-

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* The Community Development Blocks (CD Blocks) are the lowest units of administrative hierarchy of rural development programs in all respects.

tory of Delhi (India). The two major sub-dimensions of interpersonal relations that were studied were: (1) relations in work situation and (2) relations in out-of-work situation.

These relations were studied between the following hierarchical levels in each of the five CD Blocks in the Union Territory of Delhi:

a) The Block Development Officer (BDO) and the Agricultural Extension Officers (AEOs);
b) the Block Development Officer and the Village Level Workers (VIWs); and
c) the Agricultural Extension Officers and the Village Level Workers.

The measurements were based on the *behavior pattern* of the superior officers (BDO and AEOs for the VLWs and BDO for the AEOs) which is assumed to reflect their attitudes. Studying attitudes and behavior of the superiors poses a problem for the researchers who could either watch people behaving or ask them about their own actions. Both these methods have serious limitations, the most important being the observer himself who might have either preconceived ideas or personal biases which could damage the accuracy of the study. More so, as Kerlinger[1] puts it, "the observer. . . can make quite incorrect inferences from observations due to human fallibility." Considering these difficulties in studying human behavior and attitudes, an objective procedure of observation in which degree of judg-

mental variance is relatively low has been preferred.

The scales evolved to measure interpersonal relations in work and out-of-work situations have immense practical value. First, the researchers in this field may use these tools to study the relationship patterns that exist in a CD or similar organization. Second, the administrators themselves may use these tools to know about their relations with others in the organization. Existence of more positive relations among the personnel within an organization has been found to have a favorable effect on their morale. Greer[2] and Mahur[3] have produced empirical evidences to this effect.

Interpersonal Relations

In the context of this research work, "interpersonal relations" denote relations among the CD personnel working in the CD Blocks of Delhi Territory. The relations in both the work (on-the-job) and out-of-work (off-the-job) situations have been studied. Relations in the work situation included a modification of Likert's item[4] on characteristics of organizations. These organizational tracts were: communication process and pattern, use of moti-

[1] Fred N. Kerlinger, *Foundations of Behavioral Research — Educational and Psychological Inquiry* (New York: Holt, Rinehart and Winston, 1964), p. 505.

[2] See F. N. Greer, *Small Group Effectiveness,* Institute Report No. 6 (Philadelphia: Institute Research on Human Relations, 1955).

[3] Prahlad Narai Mathur, *Human Relations in Package Programme Administration: Pali District* (unpublished Master's thesis. University of Kajasthan, 1962).

[4] Rensis Likert, "An Emerging Theory of Organization, Leadership, and Management," in Luigi Petrullo and Bernard M. Bass (eds.), *Leadership and Interpersonal Behavior* (New York: Holt, Rinehart and Winston, 1961), pp. 293-299.

vational force, interaction-influence process, decision-making process, goal setting in organization, control process, and performance. Relations in out-of-work situation, a new dimension included in this study, had items on: consultation pattern, collective participation, family mixing, after-office meetings, and mutual feelings of like and dislike.

Equal-Appearing Intervals

This method, originally evolved by Thurstone and Chave,[5] has been modified to evolve measurements of work and out-of-work relationship. The following discussion details the procedure that was used to arrive at the two interpersonal relations scales.

Collection of statements and editing

The first step in the scale construction was the collection of statements representing the "universe of content." Four main sources were used to collect the statements: (a) discussion on administrative problems with administrators and subordinate staff in the CD blocks; (b) reviewing pertinent literature; (c) personal experience; and (d) judges involved in scale construction. To begin with, the number of statements collected for the measurements of work and out-of-work relations were 64 and 30 respectively. Thereafter, the factual and ambiguous statements were eliminated and finally 59 and 27 statements respectively remained for the scale construction.
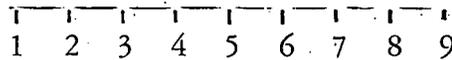
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[5] See L. L. Thurstone and E. J. Chave, *The Measurement of Attitude* (Chicago: University of Chicago Press, 1929).

Classification of statements

The statements represented most of the characteristics of an organization as given by Likert. The characteristics themselves served as a basis for classifying the statements.

Scale values — involving judges

According to the demands of this technique, the statements were assigned values ranging from one to nine on a continuum. The purpose of this kind of assignment of values was to ascertain the nature of relationship shown by each of the items. Statements having values below fifty were considered to show negative relations while those above were considered to show positive relations.

$$ 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 $$

The scale values were assigned after ascertaining the opinions of the judges including CD administrators, college and university teachers, eminent public servants, sociologists and post-graduate students at the Indian Agricultural Research Institute, New Delhi. Fifty judges were involved in this exercise, although many researchers have concluded that even a small number of judges can be used to obtain reliable scale values.

Each statement could be placed in any of nine points of a continuum. The judges were asked to mark ($\sqrt{}$) on the point where they wanted to place a particular statement. They were also asked to add or modify statements to make them more useful.

Calculation of scale values

The scale value of statements is the median of the distribution of judgments for each of the statements. The formula used for calculating the scale value is as follows:

$$S = L + \frac{(0.50 - pb)\, i}{pw}$$

Where S = the median or scale value of the statement

L = the lower limit of the interval in which the median falls

pb = the sum of the proportions below the interval in which the median falls

pw = the proportion within the interval in which the median falls

i = the width of the interval (assumed to be 1.0).

Table 1 illustrates how the scale value is calculated.

TABLE 1

EXAMPLE OF A SCALE VALUE CALCULATION

MEASURE	POINTS ON THE CONTINUUM								
	1	2	3	4	5	6	7	8	9
Frequency	0	0	13	19	10	7	1	0	0
Proportion	0	0	.26	.38	.20	.14	.02	0	0
Cumulative Proportion	0	0	.26	.64	.84	.98	1.0	1.0	1.0

$$S = 3.5 + \frac{(.50 - .26)}{.38}\, 1$$

$$= 3.5 + (.63)\, 1 = 3.5 + .63$$

$$S = 4.13$$

To study variations in the judgments about the values of the statements, interquartile values were calculated for each statement. This 'Q' value contains the middle 50 per cent of the the judgments. Statements with high 'Q' values were considered unfit for scale construction.

The formula for calculating the 'Q' value of each statement is as follows:

$$Q = c_{75} - c_{25}$$

where Q is the inter quartile range; c_{75} is the 75th centile; and c_{25} is the 25th centile.

c_{75} and c_{25} have been calculated as follows:

$$c_{75} = L + \frac{(0.75 - pb)}{pw}\, i$$

and

$$c_{25} = L + \frac{(0.25 + pb)}{pw}\, i$$

Where L is the lower limit of the interval in which 75th centile or 25th centile falls; pb is the sum of the proportions below the interval in which the 75th centile or 25th centile falls; pw is the proportion within the interval in which the 75th centile or 25th centile falls; and it is the width of the interval (assumed to be 1.0).

The Scales

After obtaining the scale values and the 'Q' values of all the statements, only 17 statements were retained in each scale. To do this, the statements

were placed on the nine-point continuum at an interval of 0.5. The statements having scale values nearest to the desired points (viz. 1.0, 1.5, 2.0, 2.5, 3.0, etc.) and having smaller 'Q' values were selected. Care was taken to include eight positive, eight negative, and one neutral, statements. This was done in order to make the scale devoid of bias either towards the negative or the positive side. In the final scale, the items were randomly serialized from 1 to 17 so that neither negative nor positive statements appear continuously.

Reliability and Validity

The following tests were conducted to study the internal consistency, stability and content validity of the two scales developed here.

(1) *Test-retest.* This test was applied to find out the stability of the scales. The scales were administered twice to a group of twenty block personnel, other than respondents, at an interval of 15 days. The scores showed high correlation between the two sets of score values (+0.82 and +0.76 for work relations and out-of-work relations respectively), showing that the scales were stable.

(2) *Split-half technique.* A good scale should have significant internal consistency. An internal consistency test was applied to the two scales. The 17 statements were divided into two parts of nine each, the neutral statement going with both the halves. These halves were administered similarly to twenty block personnel, other

than the previous ones. The correlations ('r' values) obtained were: +78 and +0.82 for work and out-of-work relations scales respectively.

(3) *Self-rating scores.* Twenty block personnel rated themselves on the two nine-point continuance and then scored the ratings on the scales. The 'r' values were +0.86 and 0.70 showing that the scales were true measurements of the work and out-of-work relations.

Measuring Relations

The respondents were asked to mark (√) on any of the five alternatives — strongly agree, agree, undecided, disagree and strongly disagree — given against each statement of the scales. The scales, thus, showed the trends of relationships existing between the superiors and subordinates. Each respondent was placed on the similar nine-point continuum (used for assigning values to the statements) by calculating the median of all the scale values of those statements with which the respondent agreed or strongly agreed. If the respondents had agreed with odd number of statements, the scale value of the middle statement was the score for the respondent. If he had agreed with an even number of statements, the mean value was calculated by using the following formula:

$$\text{Median} = s + \frac{(S - s)}{2}$$

Where s is the scale value of the upper middle statement; and S is the scale value of the lower middle statement.

S is always greater than s. For instance, a respondent may have marked (V) against statements with the following scale values:

3.5, 4.0, 4.5, and 6.0

In this case the nature of the relationship expressed by the respondent will be the median of these figures:

$$M = 4.0 + \frac{(4.5 - 4.0)}{2} = 4.25$$

The resulting scales measuring on-the-job and out-of-work relations are shown in Tables 2 and 3, respectively. The corresponding scale values are placed in brackets after each statement.

These scales can be used to measure interpersonal relations in the two above-mentioned settings in the CD blocks or in any other similar organization.

TABLE 2

SCALE TO MEASURE WORK RELATIONS

Scale values given in brackets.

Items	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. Superior Officer helps the subordinate maintain good relationship with co-workers. (8.0)	—	—	—	—	—
2. Superior Officer shows no concern for the needs and interests of the subordinate. (3.5)	—	—	—	—	—
3. Superior Officer introduces subordinate to visitors in a routine manner only. (4.5)	—	—	—	—	—
4. Superior Officer adequately uses the existing structure for interaction (committees, subcommittees, etc.) (7.0)	—	—	—	—	—
5. Superior Officer considers subordinate first as human being and then as subordinate. (9.0)	—	—	—	—	—
6. Subordinate cannot approach the superior as and when he needs or likes. (2.0)	—	—	—	—	—

TABLE 2 (Continued)

Items	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
7. Superior Officer kills opportunity for education and training of subordinate. (1.0)	—	—	—	—	—
8. Superior Officer allows subordinate to take part in discussion as a matter of concession. (5.0)	—	—	—	—	—
9. Superior Officer hesitates in giving adequate authority to subordinate along with responsibility. (2.5)	—	—	—	—	—
10. Superior Officer considers problems of subordinate as criticism of his own work. (3.0)	—		—	—	—
11. Superior Officer shows courtesy to subordinate at work. (5.5)	—	—	—	—	—
12. Superior Officer tries to maintain free and friendly atmosphere in the discussion with the subordinate. (8.5)	—	—	—	—	—
13. Superior Officer is not considerate of the mistakes of subordinate. (1.5)	—	—	—	—	—
14. Superior Officer takes initiative in work. (7.5)	—	—	—	—	—
15. Superior Officer makes administration an instructive experience for the subordinate. (6.0)	—	—	—		—
16. Superior Officer gives formal touch to the official correspondence with the subordinate. (4.0)	—	—	—	—	—
17. Superior Officer frequently discusses issues with subordinate. (6.5)	—	—	—		—

TABLE 3

SCALE TO MEASURE OUT-OF-WORK RELATIONS

Scale values given in brackets.

Items	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. Superior Officer does not like to visit the subordinate's family even in case of an emergency. (1.5)	—	—	—	—	—
2. Superior Officer's behaviour is unpredictable. (5.0)	—	—	—	—	—
3. Superior Officer likes to visit subordinate's family only on occasions. (6.0)	—	—	—	—	—
4. Superior Officer imposes his personality over subordinate in off-the-job talks. (3.5)	—	—	—	—	—
5. Superior Officer is status-conscious and does not mix freely with the subordinate. (3.0)	—	—	—	—	—
6. Superior Officer encourages his family to enjoy picnics, parties, games etc. with the family members of the subordinate. (6.5)	—	—	—	—	—
7. Superior Officer shares common hobbies like reciting poems, jokes, etc. with the subordinate. (9.0)	—	—	—	—	—
8. Superior Officer discourages subordinate to have after-office contacts even if necessary. (2.0)	—	—	—	—	—
9. Superior Officer wants subordinate to be good to him irrespective of his being good to the subordinate. (5.5)	—	—	—	—	—
10. Superior Officer feels free with the subordinate in informal gathering. (7.0)	—	—	—	—	—

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TABLE 3 (Continued)

Items	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
11. Superior Officer takes pleasure in introducing the subordinate to others in informal gathering. (8.0)	—	—	—	—	—
12. Superior Officer does not allow even his children to mix with the children of the subordinate. (1.0)	—	—	—	—	—
13. Superior Officer wants good relations in off-the-job situations with the higher authorities only and not with subordinate. (4.0)	—	—	—	—	—
14. Superior Officer surpasses status barriers with the subordinate. (7.5)	—	—	—	—	—
15. Superior Officer greets the subordinate if the subordinate miss to greet him. (8.5)	—	—	—	—	—
16. Superior Officer is suspicious of the informal get-together of the subordinates. (4.5)	—	—	—	—	—
17. Superior Officer does not relish subordinate to express views freely on non-job matters. (2.5)	—	—	—	—	—