C H A P T E R V

ANALYSIS OF DATA AND DISCUSSION

The present chapter deals with the analysis of the data and testing of the hypotheses. The statistical analysis includes finding out the relationship between the extent of awareness, adoption, internalization, process of self-perceived change orientation and the various predictor variables by using correlational techniques. Finally, multiple regression analysis has been carried out and multiple correlation between the predictor and the criterion variables has been found out.

The chapter has been divided into four sections. Section I deals with the descriptive statistics of the measures of various variables; Section II deals with correlations between the criterion and the predictor variables; Section III discusses the predictors of the diffusion process within the school system and; Section IV deals with the discussion and implications of the results of the study.

SECTION I

Descriptive statistics of dependent/criterion variables

1. Time of Awareness :

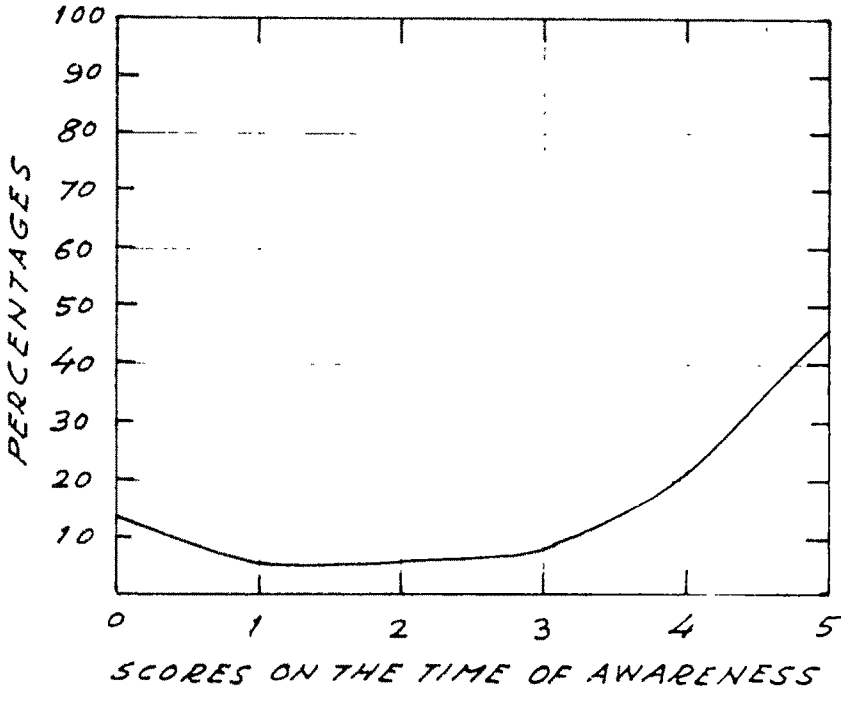
The frequency distribution, its percentage, the mean and the SD of the variable are given in Table 5.01.

Table 5.01 : Mean, SD of distribution of scores of the variable 'Time of Awareness'

Scores	f (Frequency)	Percentage	Mean	SD
5	206	46.61		
4	94	21.27		
3	35	7.92	3.59	1.77
2	28	6.33		
1	22	4.98		
0	57	12.89		

N = 442

From the table above and the Graph 1, it is revealed that the nature of the frequency distribution for this variable is not normal. It shows that nearly 46.61% of the teachers became aware of the innovation within one year after it was floated. Next year another 21.27% of teachers became aware of the innovation i.e. majority of them became aware at the early stage. The table also reveals that 12.89%



GRAPH 1. DISTRIBUTION OF SCORES OF THE TIME OF AWARENESS, FREQUENCIES HAVE BEEN REDUCED TO A PERCENTAGE BASIS.

of the teachers are laggards who did not take interest in the innovation and did not come to know about it or became aware about it too late.

This strange distribution of the frequency for this variable is perhaps due to the well-known 'Hawthorne effect'. The novelty of the innovation might have acted as a motivating factor and that is why majority of teachers became aware of the innovation at an early stage. Apart from this the power of the source i.e. of the Secondary School Certificate Examination Board which advocated for the innovation may also be a reason for a large number of teachers becoming aware of the innovation in its very starting. Along with this the extension centres also took the idea immediately and helped in the spread of the innovation faster. However, further studies are required to explore into the peculiar nature of the distribution and probe into the causes responsible for it.

2. Time of Adoption :

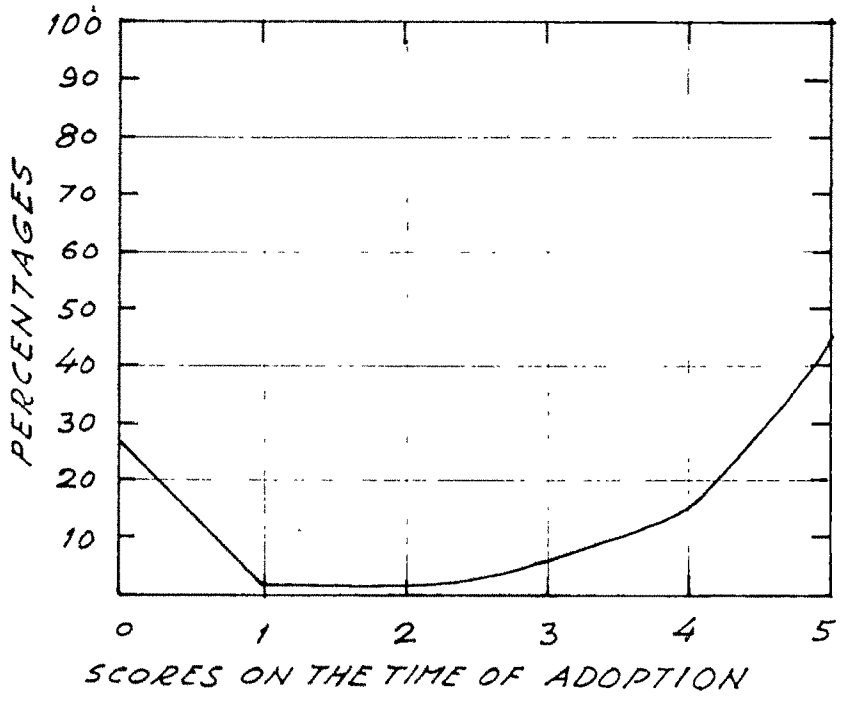
In Table 5.02 the frequency distribution for the criterion variable the 'time of adoption' of the innovation, its mean and the SD are given.

Table 5.02 : Mean, SD of the distribution of scores of the variable 'Time of Adoption'

Scores	f (Frequency)	Percentage	Mean	SD
5	206	46.61		
4	70	15.84		
3	26	5.88	3.21	2.13
2	10	2.26		
1	9	2.04		
0	121	27.38		

N = 442

The nature of distribution for this variable is also unusual as it is in the case of the distribution for the other variable, the 'time of awareness'. This unusual nature of distribution is clearly seen from Graph 2. Table 5.02 shows that 46.61% of the teachers adopted the innovation within one year of becoming aware about it and thus the percentage of innovators is quite high. The percentage of teachers adopting the innovation within two years of becoming aware about it is 15.84%. Nearly 27.38% of teachers are laggards. Comparing Table 5.01 and 5.02 it appears that quite a good number of teachers did not adopt the innovation even after becoming aware of it. Only 12.89% were not aware



GRAPH 2. DISTRIBUTION OF SCORES OF THE 'TIME OF ADOPTION.' FREQUENCIES HAVE BEEN REDUCED TO A PERCENTAGE BASIS.

or became aware of the innovation late but nearly 27.38% of teachers did not adopt it or adopted it quite late. The percentage of laggards is also more. Only 26.02% of the teachers fall in the middle part of the curve which is classified as early majority, majority and late majority. The findings of this study are, thus, not in agreement with those of the past researches. The findings of the past researches summarised by Rogers (1962) show that only 2.5% are innovators, 16% are laggards and rest fall in the categories of early majority, majority and late majority. It is a general finding of the past researches that adoption curve of an innovation follows a bell-shaped curve when plotted over time. Carlson (1965) found that adoption curve is 'S' shaped when plotted on a cumulative basis. However, findings of this study do not agree with this. Non normal distribution of the scores of this variable is, perhaps again, due to the 'Hawthorne effect'. The newness of the innovation itself might have created a new zeal among the teachers and a large number of them adopted it soon after they came to know about it. Moreover, examination is a direct concern of teachers. As the S.S.C. Examination Board advocated for the innovation, teachers might have taken much interest and adopted it soon when they came to know about it.

Further enquiries are required to find out the nature of the distribution of adoption of innovations and reasons for a particular distribution pattern.

3. Internalization :

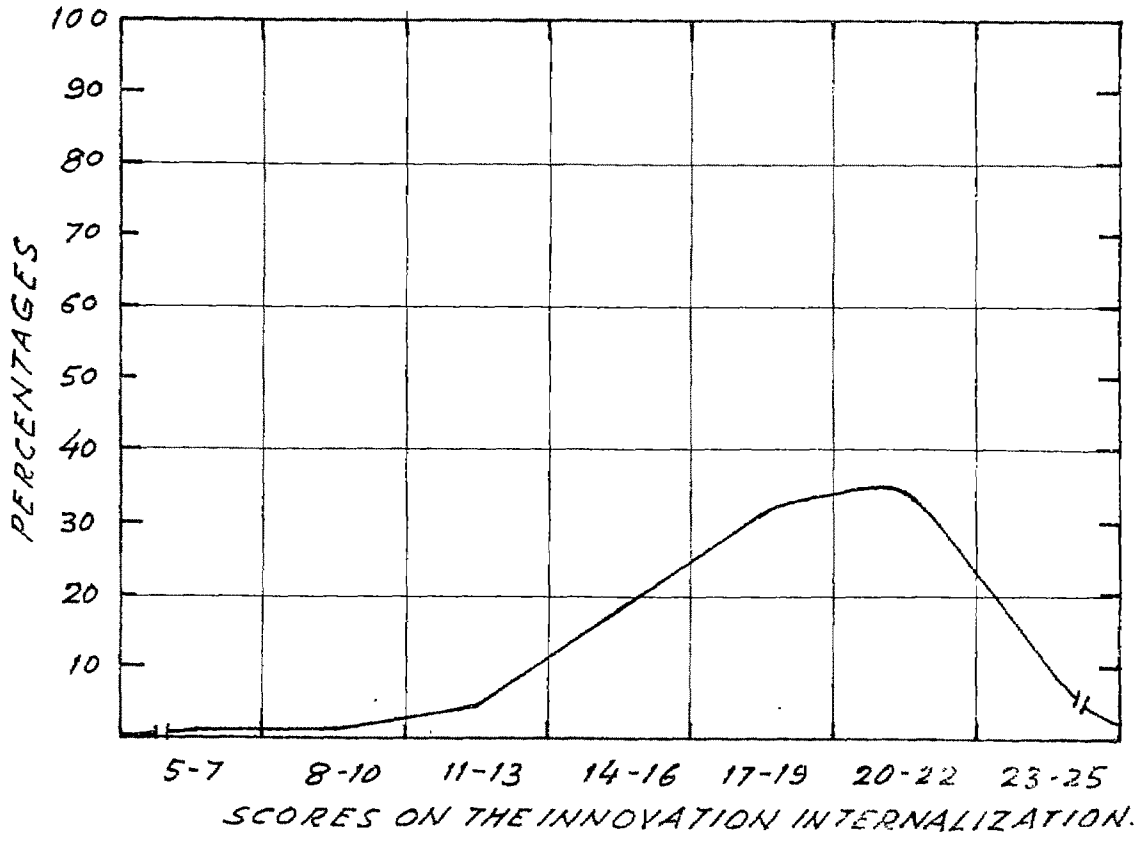
Table 5.03 contains the frequency distribution, the mean and the SD of the variable 'internalization.'

Table 5.03 : Mean and SD of the distribution of scores of the variable 'Internalization'

Scores	f (Frequency)	Percentage	Mean	SD
23 - 25	40	9.05		
20 - 22	153	34.62		
17 - 19	140	31.67		
14 - 16	80	18.10	18.56	3.40
11 - 13	20	4.52		
8 - 10	5	1.13		
5 - 7	4	.91		

N = 442

Internalization of an innovation is left to the teacher. The attitudinal disposition of the teacher has much to do with assimilation of the innovation. The attitudinal disposition pattern of the individual is formed after becoming much acquainted with the innovation. Here he is not guided



GRAPH 3. DISTRIBUTION OF SCORES OF THE INNOVATION INTERNALIZATION. FREQUENCIES HAVE BEEN REDUCED TO A PERCENTAGE BASIS.

by sudden impulses and the 'Hawthorne effect' is less. The effect of novelty of the innovation is minimized. It is due to this that here we find a natural trend and the frequencies for this variable are normally distributed. For this variable we find an unimodel curve. The nature of this distribution has been graphically presented in Graph 3. The skewness and kurtosis for this distribution are -.3 and .275 respectively. The distribution for this variable is slightly negatively skewed. The kurtosis for the distribution is little greater than .263 (Kurtosis for a normal distribution) and so the distribution is a little platykurtic.

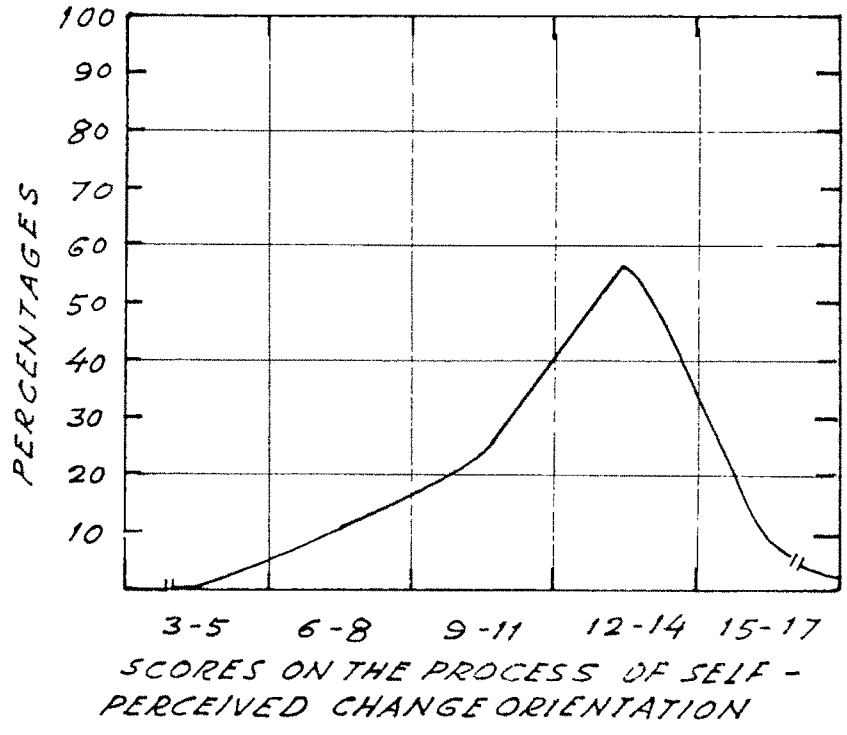
4. Process of Self-perceived Change Orientation :

The frequency distribution, the mean and the SD for the 'process of self-perceived change orientation' is given in Table 5.04.

Table 5.04 : Mean and SD of the distributioh of scores of the variable,' Process of Self-Perceived Change Orientation '

Scores	f (Frequency)	Percentage	Mean	SD
15 - 17	38	8.50		
12 - 14	251	56.79		
9 - 11	104	23.53	11.87	2.41
6 - 8	47	10.63		
3 - 5	2	.45		

N = 442



GRAPH 4. DISTRIBUTION OF SCORES OF THE PROCESS OF SELF-PERCEIVED CHANGE ORIENTATION. FREQUENCIES HAVE BEEN REDUCED TO A PERCENTAGE BASIS.

This variable shows teacher's attitude towards change in general. The distribution for this variable also follows an unimodal curve which approaches a normal distribution (Graph 4). The normality of the curve for this variable is also due to the fact that the teacher's attitude towards change is formed over a time and is not on a sudden decision which might have the 'Hawthorne effect'. The skewness and kurtosis for this distribution are -.55 and .270 respectively. The distribution for this variable is little negatively skewed compared to that of the internalization. The kurtosis for this distribution is little more than .263 and thus the curve is slightly platykurtic but approaches a normal curve.

Descriptive Statistics of Independent Variables

The basic descriptive statistics, viz., the central tendency as measured by mean and the variability as measured by standard deviation for all the continuous variables were found out. These statistics for the independent variables are given in Table 5.05.

Table 5.05 : Descriptive statistics of some independent variables

Sr.No.	Variable	Mean	SD
1.	Age	36.92	8.40
2.	Educational qualifications	4.39	2.17

(continued)

Table 5.05 (continued)

Sr.No.	Variable	Mean	SD
3.	Recency of training	3.44	1.17
4.	Experience	13.25	5.49
5.	Role satisfaction	12.53	2.13
6.	Feeling of security	8.12	1.66
7.	Perceived psychological distance between self and the principal	26.03	3.61
8.	Perceived psychological distance between other teachers and the principal	25.46	3.82
9.	Perceived source credibility of the principal	36.72	4.96
10.	Perceived change orientation of the principal	14.38	3.35
11.	Vertical communication	8.71	3.33
12.	Perceived principal's support of the innovation	12.88	2.41
13.	Self-designated opinion leadership	11.93	2.47
14.	Ascribed opinion leadership	3.11	2.97
15.	Perceived cohesiveness of the school faculty	17.71	2.53
16.	Perceived frequency of general horizontal communication	3.81	1.09
17.	Perceived frequency of horizontal communication about the innovation	3.58	1.08
18.	Teachers' perception of students' benefit from the innovation	4.36	0.71

(continued)

Table 5.05 (continued)

Sr.No.	Variable	Mean	SD
19.	Teachers' perception of students' attitude towards the innovation	4.17	0.77
20.	General mass-media exposure	18.12	3.48
21.	Professional communication behaviour	9.04	1.03
22.	Cosmopoliteness (Exposure to wider environment)	18.81	4.426
23.	Professional orientation	9.78	3.37
24.	Need for autonomy	12.46	2.40
25.	Conservatism Vs radicalism	16.22	5.34
26.	Attitude towards profession	7.01	1.42
27.	Socio-economic status	3.17	0.83
28.	Organisational climate	4.35	2.14

Amongst the independent variables sex and urban - rural background are dichotomous variables and therefore, mean and SD were not calculated for these two variables. As regards these two variables the actual number of teachers falling in each category and their percentage are given in Table 5.06.

Table 5.06 : Distribution of sample according to sex and urban or rural background of the teachers

	Sex		Total	Background		Total
	Male	Female		Urban	Rural	
No. of teachers	394	48	442	168	274	442
Percentage	89.14	10.86	100	38.01	61.99	100

The above tabke shows that 89.14% of the teachers included in the sample were male and only 10.86% were female. Again 38.01% of teachers have stayed most of their life in urban area whereas 61.99% of teachers have stayed mostly in rural areas.

The teachers included in the sample were also classified according to the organisational climate of the school. Table 5.07 shows the number of teachers for each organisational climate group.

Table 5.07 : Classification of teachers according to the organisational climate of the schools

	Open	Auto-nomous	Contr-olled	Fami-liar	Pater-nal	Closed	Total
Number of teachers	72	54	88	43	73	112	442
Percentage	16.29	12.22	19.91	9.73	16.52	25.34	100

Table 5.07 shows that 16.29% of the teachers included were from open climate schools and 25.34% of the teachers from closed climate schools. Autonomous, controlled, familiar and paternal types of school included 12.22%, 19.91%, 9.73% and 16.52% of teachers respectively.

Table 5.08 : Classification of schools according to the organisational climate of the schools

	Open	Auto-nomous	Cont-rolled	Famili-ar	Pater-nal	Closed	Total
Number of schools	9	7	10	7	8	14	55
Percentage	16.36	12.73	18.18	12.73	14.55	25.45	100

Table 5.08 gives the number of schools under each climate group. This table reveals that 16.36% of the schools fall in open climate group and 25.45% of the schools belong to closed climate, 18.18% of the schools of Gujarat have controlled climate, 12.73% belong to autonomous and familiar climate group each. Tables 5.07 and 5.08 are in close agreement with each other. The percentage of teachers falling in each climate category is more or less same as that of the schools falling in each category.

SECTION II

This section of the chapter includes discussion of results of correlation of all the variables and testing of each hypothesis separately. The coefficients of correlation (product moment 'r') of all the independent variables with all the criterion variables are given in Table 5.09.

Table 5.09 : The coefficients of correlation of independent variables with the four criterion variables

Independent variables	Criterion variables			
	Time of Awareness	Time of adoption	Interna-lization	Process of self-perceived change orien-tation
1	2	3	4	5
1. Age	.15**	.12*	.08	.07
2. Sex	-.005	.04	-.01	- .02
3. Educational qualifications	-.06	.008	.006	- .099*
4. Recency of Training	-.08	-.03	-.01	-.01
5. Experience	.12*	.11*	.12*	.10*
6. Urban/Rural background	-.005	-.04	-.02	.06
7. Role satisfaction	-.01	.04	.18**	.14**
8. Feeling of security	.07	-.04	.14**	.13**

(continued)

Table 5.09 (continued)

1	2	3	4	5
9. Perceived psychological distance between self and the Principal	.07	-.002	.10*	.11*
10. Perceived psychological distance between other teachers and the Principal	.06	-.03	.11*	.13**
11. Perceived source credibility of the Principal	.02	.002	.09	.07
12. Perceived change orientation of the Principal	.02	.08	.35**	.43**
13. Vertical communication	.14**	.05	.14**	.06
14. Perceived Principal's support of the innovation	.02	.02	.13**	.15**
15. Self-designated opinion leadership	.22**	.18**	.12*	.13**
16. Ascribed opinion leadership	.11*	.15**	.19**	.13**
17. Perceived cohesiveness of the school faculty	.08	.02	.21**	.13**
18. Perceived frequency of general horizontal communication	.14**	.11*	.07	.008
19. Perceived frequency of horizontal communication about the innovation	.20**	.20**	.11*	.11*
20. Teachers' perception of students' benefit from the innovation	.04	.001	.48**	.23**

(continued)

Table 5.09 (continued)

1	2	3	4	5
21. Teachers' perception of students' attitude towards the innovation	.15**	.11*	.33**	.17**
22. General mass-media exposure	.16**	.12*	-.002	.04
23. Professional communication behaviour	.21**	.19**	.07	.09
24. Cosmopoliteness (Exposure to wider environment)	.21**	.16**	.16**	.19**
25. Professional orientation	.20**	.17**	.14**	.08
26. Need for autonomy	.03	.008	-.07	-.04
27. Conservatism vs radicalism	.04	-.02	.02	.08
28. Teachers' attitude towards teaching profession	.03	-.05	.07	.10*
29. Socio-economic status	-.15**	-.10*	-.10*	-.18**
30. Organisational Climate	.08	.015	-.05	-.009

N = 442

* Significant at .05 level of confidence

** Significant at .01 level of confidence

Variable 1 - Age :

The hypothesis formulated in the study for this variable is a null hypothesis.

> 'The age of the teacher is not related to the 'time of awareness,' the 'time of adoption', 'internalization' of an innovation and the 'process of self-perceived change orientation' - the four dimensions selected for measuring the diffusion process within the school system.'

Table 5.09 shows that the value of 'r' for the 'time of awareness' is significant at .01 level and the 'time of adoption' at .05 level. The 'r' values for 'internalization' and the 'process of self-perceived change orientation' are neither significant at .01 nor at .05 level of confidence. The hypothesis that age of the teacher has no relationship with the 'time of awareness' and the 'time of adoption' is rejected. The result of the study thus shows that older the teacher earlier he comes to know about the innovation and also adopts it earlier, compared to the teachers who are younger.

The hypothesis that age of the teacher has no relationship with the 'internalization' of the innovation and the 'process of self-perceived change orientation' is retained as the 'r'

values for these two variables are not significant. It shows that all the teachers whether young or old are equally prone to the 'internalization' of the innovation, and perceived themselves equally change oriented. Thus age has nothing to do either with the 'internalization' of an innovation or with the 'process of self-perceived change orientation.'

Hoffer and Stangland (1958), Beal and Rogers (1960) and Sheppard (1960) found that older the individual more innovative he is. Bhogle's (1969) study also reveals that older principals are more adoptive. However, Gross (1942), Rahudkar (1961), and Rogers (1961) concluded that younger persons were more innovative in their behaviour. Many studies, of course, did not find any significant relationship between age and innovativeness of the persons such as Carnic (1966), Lawrence (1967), Hinman (1968), Holdaway and Seger (1966). Carlson (1965) in his study of adoption in Allegheny County and West Virginia schools did not find any significant relationship with age and the rate of adoption. Buch (1972) also did not find any relationship between the age of the principals and adaptability of schools.

Variable 2 - Sex :

The hypothesis for this variable is ,

'Sex of the teacher is not related to any of the four dimensions constituting the diffusion process within the institution, viz. the 'time of awareness', the 'time of adoption', 'internalization' of an innovation, and the 'process of self-perceived change orientation.'

The value of 'r' for any of the criterion variables is neither significant at .01 level nor at .05 level of confidence. The hypothesis that sex of the teacher has no relationship with any of the four dimensions of diffusion, viz. the 'time of awareness', the 'time of adoption', 'internalization' of the innovation and the 'process of self-perceived change orientation' is retained. There is no difference between male or female teachers' 'time of awareness', 'time of adoption', 'internalization' of the innovation and the 'process of self-perceived change orientation.'

Rogers, Joyce et. al. (1966) in their Thailand study found that the secondary school teachers who perceived innovations as more beneficial were males. The authors did not find any significant relationship with the 'time of awareness' and the 'time of adoption' of innovations and sex of the teachers. Dohmann (1970) concluded that sex of the teachers does not affect his receptiveness to change, whereas Zimmerman (1970) concluded that innovators were more likely to be males. Mininberg (1970) found that male teachers

perceived themselves more participating in decision making.

Variable 3 - Educational Qualifications :

The hypothesis for this variable is,

'Educational qualifications of a teacher has a significant positive relationship with the 'time of awareness' of an innovation, 'time of its adoption', its 'internalization' and the 'process of self-perceived change orientation'.

The value of 'r' for the first three criterion variables is not significant at .01 or .05 level. Surprisingly this variable has got a negative relationship with the fourth criterion variable i.e. the 'process of self-perceived change orientation'. The value of 'r' is -.099 which is significant at .05 level. The hypothesis thus, that educational qualifications of a teacher has a significant positive relationship with the 'time of awareness,' 'time of adoption', 'internalization' and the 'process of self-perceived change orientation', is rejected. The results of this study prove that the 'time of awareness' of an innovation, the 'time of adoption' and the 'internalization' of the innovation are not influenced by the educational qualifications of the person. The results also show that more qualified teachers do not perceive themselves to be change oriented.

Most of the past researches specially in the field of rural sociology, however, show that there is a positive relationship between the educational level and innovativeness of an individual. Hobbs (1960), Rahim (1961), Sheppard(1960) Coughenour (1960b), Rogers and Pitzer (1960) found the level of education positively related to innovativeness. Carlson (1965), in his study of Allegheny County found that amount of education is significantly correlated (r = .40) to the rate of adoption. Rogers, Joyce and others (1966) in their Thailand study found that the teachers and principals who become aware of new educational techniques earlier, tend to have higher educational qualifications than their fellow teachers and principals. However, they did not find any relationship between the amount of education and the 'time of adoption' of an innovation. Lin Nan et al. (1966) found both the 'time of awareness' and 'internalization' significantly (r=.22 and .25) respectively), related to the educational level. Zimmerman (1970) found that innovators had more graduate school education. Marion (1966) found no relationship between amount of education and Principal's innovativeness. Carlson (1965) also found no relationship between amount of education and the rate of adoption in West Virginia study. Bhogle (1969) also did not find any relationship between level of education and adoption of innovations. Buch (1972) found that there is

no relationship between educational level of the Principal and school adaptability. Thus even in the field of education many studies report that amount of education has no relationship with the person's innovativeness. The reason may be that a clear-cut relationship is difficult to establish with adoption of new practices as years of schooling are related to other factors likely to condition the adoption rates, for example, age, social status of the teachers etc.

Variable 4 - Recency of Training :

The hypothesis to be tested is,

'Recency of training of the individual is not related significantly to any of the four dimensions selected to measure the diffusion process within the school system.'

The 'r' values of this variable with all the four criterion variables are not significant at .01 or .05 level of confidence. This shows that recency of training has no relationship with any of the criterion variables selected for the study and therefore, the hypothesis is retained.

Carlson (1965) found a positive significant relationship (r = .32 significant at .05 level) with the recency of training and the rate of adoption of the superintendents of Allegheny County. At the same time he found that no significant

relationship exists between the recency of training and the rate of adoption of innovations from the sample of West Virginia schools.

Variable 5 - Experience (as a teacher) :

The hypothesis to be tested is,

'Teacher's experience in his profession has no relationship with any of the four dimensions selected in the present study to measure the diffusion process within the school system.'

The 'r' values of this variable with all the criterion variables are significant at .05 level and, therefore, the null hypothesis formulated for the variable is rejected. The results of this analysis show that the teacher's experience in his profession has significant positive relationship with the 'time of adoption', the 'time of awareness', 'internalization' and the 'process of self-perceived change orientation' i.e. the diffusion process within the school system.' More experienced is the teacher earlier he comes to know about innovations, adopts them earlier, more is the internalization and perceives himself as more change oriented. Thus teaching experience of the teacher does help in the diffusion of an innovation process within the school system.

This finding is supported by many past researches. Rogers, Joyce et al. (1966), Holdaway (1968) and Seger (1966), Klingenberg

(1967), Bhogle (1969) have concluded that the individual's experience in the profession and his innovativeness have significant positive relationship. Zimmerman (1970) found that the individuals who were identified as innovators had more teaching experience. Mininberg (1970) concluded that the years of service correlated positively with the perceived involvement in innovative activity. Penny (1970) studied the characteristics of educators involved in the change process and found that participants had a greater number of years of work experience. Dohmann (1970), however, concluded that no amount of teacher experience significantly affects a teacher's receptiveness to change. Buch (1972) found that experience of the Principal as a teacher or as a Principal does not contribute to the adaptability of the school.

Variable 6 - Urban and Rural Background :

The hypothesis for this variable is,

'Urban background of a teacher is positively related to all the four dimensions of the diffusion process within the school.'

The 'r' values of this variable for all the four criterion variables are not significant even at .05 level. This shows that teacher's urban and rural background has no relationship with any of the criterion variables and hence with the diffusion of innovation within the school system.

The hypothesis, therefore, is rejected.

The findings of this study are in conformity with the findings of Rogers, Joyce et al. (1966) who, in their Thailand study, did not find any relationship between teacher's and Principal's duration in urban residence and their innovativeness.

Variable 7 - Role Satisfaction :

The hypothesis is,

'Role satisfaction of the teacher has a significant positive relationship with all the four dimensions of the diffusion process that are selected in the present study.'

The coefficients of correlation for this variable with the 'time of awareness' and the 'time of adoption' of the innovation are not significant. The hypothesis, therefore, for these variables that there is a significant positive relationship between 'role satisfaction' and the 'time of awareness' and the 'time of adoption' of the innovation, is rejected. The 'r' values between role satisfaction and 'internalization' of an innovation and the 'process of self-perceived change orientation' are significant at .01 level. The hypothesis for these two variables is retained i.e. there is a significant positive relationship between 'role satisfaction' of a teacher and 'internalization' of an innovation and the

'process of self-perceived change orientation'. From the results of the present study it is concluded that teacher's satisfaction in his job does not help him in becoming aware of the innovations and adopt it earlier compared to those who are not satisfied with their teaching job. But, 'role satisfaction' of the teacher helps him to perceive himself as more change oriented and it helps in the process of 'internalization' of innovations. Greater the teacher is satisfied in performing his job he thinks himself to be change oriented and develops a more positive attitude for an innovation leading to its internalization.

Lin Nan et al. (1966) in their study of the 'Diffusion of an innovation in Three Michigan Schools' found a positive relationship between 'self-perceived change orientation' and the 'role satisfaction' of the teacher but they did not find any significant relationship between the 'time of awareness', 'internalization' and 'role satisfaction' of the teachers. In another study Rogers, Joyce et al. (1966) found a significant relationship between the 'time of adoption' and 'self-perceived change orientation' and 'role satisfaction' of the teacher. Buch (1972) concluded that the degree of 'role satisfaction' of the Principal does not contribute to the school adaptability.

Variable 8 - Feeling of Security :

The hypothesis is ,

'Feeling of security is positively related to all the four dimensions of the diffusion process within the institution.'

Table 5.09 reveals that feeling of security has significant positive relationship with 'internalization' and 'self-perceived change orientation' and the values of 'r' for these variables are significant at .01 level. It does not have any significant relationship with the 'time of awareness' and the 'time of adoption'. The hypothesis, therefore, that the 'feeling of security' is positively related to the 'time of awareness' and the 'time of adoption' is rejected. Thus 'feeling of security' in the job has no relationship with the 'time of awareness' and the 'time of adoption' of the innovation. The hypothesis that the 'feeling of security' is positively related to the 'internalization' and the process of 'self-perceived change orientation' is accepted. The result of the study thus reveals that more secure the teacher feels in his job more is the 'internalization' of an innovation and he perceives himself to be more change oriented.

The results of this study for the third and fourth criterion variables are in conformity with the findings of Mcclellan (1952), Rogers (1962), Ray, Johns and others (1963),

Bohlen (1962), Lippitt et al. (1958), and Buch (1972). Holdaway and Seger (1966) found anxiety of the individual hindering his innovativeness. However, Marion (1966), Lin Nan et al. (1966), and Rogers, Joyce et al. (1966) did not find any relationship between this variable and innovativeness of the teachers.

Variable 9 - Perceived Psychological Distance between Self and the Principal

The hypothesis is,

'Perceived psychological distance between self and the principal is negatively related to all the four dimensions of the diffusion process within the school system.'

From Table 5.09 it is seen that the 'perceived psychological distance between self and the principal' has no relationship with the 'time of awareness' and the 'time of adoption'. Therefore, the hypothesis that the 'perceived psychological distance between self and the principal' is negatively related to 'time of awareness' and the 'time of adoption' is rejected. Thus teacher's perception of psychological distance between self and the principal does not influence the 'time of awareness' or the 'time of adoption'. The table also reveals that r values between 'perceived psychological distance between self and the principal' and

'internalization' and the 'process of self-perceived change orientation' are significant at .05 level. The positive value of 'r' shows that less the psychological distance, better is the process of 'internalization' and more is the 'process of self-perceived change orientation.' Therefore, the hypothesis that 'perceived psychological distance between self and the principal' is negatively related to the 'internalization' and the 'process of self-perceived change orientation' is retained.

Findings of this study support the findings of Rogers, Joyce et al. (1966). In their Thailand study they came to the conclusion that the Thai Principal who tends to become aware of educational innovations tends to perceive lesser psychological distance between himself and his changwad education officer. Lin Nan et al. (1966) and Rogers, Joyce et al. (1966) did not find any significant relationship between 'perceived psychological distance between the principal and the teachers' and the 'time of awareness' as well as the 'time of adoption' of innovations. The variable was found to have a significant relationship with 'self-perceived change orientation' and 'perceived beneficiality of the innovations' in studies mentioned above.

Variable 10 - Perceived psychological distance between other teachers and the principal :

The hypothesis is,

'Perceived psychological distance between other teachers and the principal has a significant negative relationship with all the four dimensions of the diffusion process, viz. the 'time of awareness', the 'time of adoption', 'internalization', and the 'process of self-perceived change orientation.'

The coefficients of correlation between this variable and the 'time of awareness' as well as the 'time of adoption' are not significant. The hypothesis that the 'perceived psychological distance between other teachers and the principal' is negatively related to the 'time of awareness' and the 'time of adoption' is rejected. 'Perceived psychological distance between other teachers and the principal' does not influence the 'time of awareness' and the 'time of adoption' of any innovation by the teacher. The correlation between 'perceived psychological distance between other teachers and the principal' and 'internalization' of the innovation as well as 'self-perceived change orientation' is positive and significant at .01 level. This shows that lesser the 'perceived psychological distance between school faculty and the principal', more is the 'internalization' of the innovation

and more change oriented the teacher perceives himself to be. Therefore, the hypothesis that 'perceived psychological distance between other teachers and the principal' and 'internalization' of the innovation and the 'process of self-perceived change orientation' are negatively related, is upheld.

Lin Nan et al. (1966), Rogers, Joyce et al. (1966) did not find any relationship between 'perceived psychological distance between other teachers and the principal' and the 'time of awareness', the 'time of adoption' and 'internalization'. They found a negative relationship between 'perceived psychological distance between other teachers and the principal' and 'self-perceived change orientation' and 'perceived beneficiality of the innovations'. In their Thailand study, Rogers, Joyce et al. (1966) concluded that the teacher who perceives innovations as more beneficial perceives less psychological distance between the principal and the school faculty. Buch (1972) concluded that principal's perception of equalitarian relationship with the district education officer does not affect school adaptability whereas with that of the training college staff promotes school adaptability.

Variable 11 - Perceived source credibility of the principal :

The hypothesis is,

' Teacher's perceived source credibility of the principal is positively related to all the four dimensions of diffusion process selected in the present study.'

The coefficients of correlation between 'perceived source credibility of the principal' and the 'time of awareness', the 'time of adoption', 'internalization' of the innovation and the 'process of self-perceived change orientation' are not significant at either .01 or .05 confidence level. Therefore, the hypothesis of existence of a significant positive relationship between 'perceived source credibility of the principal' and the 'time of awareness', the 'time of adoption', 'internalization' of the innovation by the teacher and the 'process of self-perceived change orientation' of the teacher, is rejected. The results reveal that 'teachers' perception of principal's source credibility' does not have effect on any of the four dimensions of diffusion within the school system.

In a study by Lin Nan et al. (1966) the variable was found to have a significant positive relationship with the 'time of adoption' and 'self-perceived change orientation of teachers.'

Variable 12 - Perceived change orientation of the principal:

The hypothesis to be tested is,

'Teachers's perception of change orientation of the principal has a significant positive relationship with all the four dependent variables taken in the present investigation.'

Table 5.09 shows that coefficients of correlation between 'perceived change orientation of the principal' and the 'time of awareness' as well as the 'time of adoption' are too low to be significant at either .01 or .05 level of confidence. This shows that teachers' perception of change orientation of the principal is neither related to the 'time of awareness' nor to the 'time of adoption'. Therefore, the hypothesis of a significant positive relationship assumed to be existing between above mentioned variables is rejected. The coefficients of correlation between 'perceived change orientation of the principal' and 'internalization' of an innovation and the 'process of self-perceived change orientation' are quite high (r=.35 and .43 respectively) and significant at .01 level. The hypothesis regarding these two variables that there is a significant positive relationship between 'perceived change orientation of the principal' and 'internalization' of an innovation and the 'process of self-perceived change orientation' is accepted. This shows that where teachers feel that the principal welcomes change, they also develop an attitude of accepting change and they think that they are more change oriented. However, this perception of the principal's

welcoming change does not affect the 'time of awareness' and the 'time of adoption' of any innovation.

Lin Nan et al. (1966) in their Michigan study found this variable having positive significant relationship only with 'self-perceived change orientation' of the teachers and did not find any relationship with the 'time of awareness' and the 'time of adoption'. Rogers, Joyce et al. (1966) found that the variable has a significant positive relationship with the 'time of awareness' of the teachers. Buch (1972) found that principal's perception of the change orientation of his superior i.e. the district education officer and training college personnel do not influence school adaptability.

Variable 13 - Perceived frequency of vertical communication:

The hypothesis is,

'Teachers' perceived frequency of vertical communication has a significant positive relationship with all the four dimensions of the diffusion process included in the study. '

It is interesting to note from Table 5.09 that the variable 'perceived frequency of vertical communication' has a significant positive relationship with the 'time of awareness' and 'internalization' but it does not have significant relationship with the 'time of adoption' and the 'process of self-perceived change orientation.' Therefore, the hypothesis

for the two criterion variables, viz. the 'time of awareness' and 'internalization' is accepted, and the hypothesis that teacher's perceived frequency of vertical communication' has a significant positive relationship with the 'time of adoption' and 'self-perceived change orientation is rejected. It is interesting to note that the teachers who communicate with the principal come to know about the innovations earlier. It also helps them in internalization of the innovation, but the frequency of vertical communication' does not help in adopting the innovation nor does it help in modifying their attitude towards change in general.

This variable was found to have no significant relationship with teachers' innovativeness by Lin Nan et al. (1966). However, in their Thailand study Rogers, Joyce et al. (1966) concluded that the teachers who perceive innovations as more beneficial tend to communicate more with the principal about educational matters.

Variable 14 - Perceived principals' support of the innovation :

The hypothesis for the study is,

'Perception of the principal's support of the innovation by the teachers is positively related to the four dimensions of the diffusion process

within the school, viz. the 'time of awareness', the 'time of adoption,' 'internalization' of an innovation and the 'process of self-perceived change orientation.'

It is quite strange to find that teachers' perception of principal's support of the innovation does not have any significant relationship with the 'time of awareness' or the 'time of adoption' and therefore, the hypothesis that perception of the principal's support of the innovation by the teacher is positively related to the 'time of awareness' and the 'time of adoption' is rejected. However, this variable has a significant positive relationship with 'internalization' of the innovation and the 'process of self-perceived change orientation.' The 'r' values for both the variables are significant at .01 level. Therefore, the hypothesis that perception of the principal's support of the innovation by the teacher is positively related to the 'internalization' of the innovation and the 'process of self-perceived change orientation' is accepted. The results thus show that when the teacher thinks that the principal supports the innovation his attitude towards the innovation is more favourable and he accepts it easily. This thinking makes him more change oriented.

Lin Nan et al. (1966) did not find any significant relationship with this variable and the 'time of awareness', 'internalization' and 'self-perceived change orientation'. Dohmann (1970), however, found teachers strongly endorsing the support by the principal as essential to successful innovation.

Variable 15 - Self-designated opinion leadership :

The hypothesis is,

'self-designated opinion leadership of the teachers has a significant positive relationship with the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation.'

Table 5.09 reveals that the 'r' values between this variable and all the criterion variables are significant either at .01 or at .05 level.The relationship between this variable and all the four criterion variables is positive. The hypothesis that there is a significant positive relationship with 'self-designated opinion leadership' and all the four dimensions of the diffusion process viz. the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation' is retained. The teachers who think themselves as the leader of the group are likely to become aware about

innovations earlier, and adopt them earlier. These teachers have also got much more favourable attitude towards a particular innovation and change process in general.

Lin Nan et al. (1966) found this variable having a significant positive relationship with 'internalization' and no relationship with the 'time of adoption' or the 'process of self-perceived change orientation.' Rogers, Joyce et al. (1966) in their Thailand study concluded that teachers who are aware and adopt innovations early, tend to be high on self-designated opinion leadership and see themselves as opinion leaders.

Variable 16 - Peer-ascribed opinion leadership :

The hypothesis for this variable is,

'Peer-ascribed opinion leadership' of teachers has a significant positive relationship with all the four dimensions of the diffusion process within the school.'

The coefficients of correlation between 'peer-ascribed opinion leadership' and the 'time of awareness', the 'time of adoption', 'internalization', and the 'process of self-perceived change orientation' are positive and significant. Therefore, the hypothesis that there is a significant positive relationship between 'peer-ascribed opinion leadership and all the four dimensions of the diffusion process

is accepted.Thus it can be concluded that the teachers who are perceived as opinion-leaders by their colleagues become aware about the innovations, adopt them early and are also likely to have a more favourable attitude towards an innovation and change process in general.

Mechling (1970) found that the teachers who were regarded by their peers as science opinion leaders neither adopted nor diffused significantly science teaching innovations, Lin Nan et al. (1966) also did not find any relationship between the 'time of adoption' and 'internalization' in the study conducted in Michigan. Their study reports a negative relationship between this variable and the 'process of self-perceived change orientation.'

Variable 17 - Perceived cohesiveness of the school faculty :

The hypothesis is,

' Perceived cohensiveness of the school faculty has a significant positive relationship with the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation' of the teachers.'

As Table 5.09 reveals that the coefficients of correlation between the variable and the first two criterion variables i.e. the 'time of awareness' and 'time of adoption' are not

significant either at .01 or at .05 level of confidence, the hypothesis regarding these variables therefore, is rejected. The coefficient of correlation between the variable and the other two criterion variables i.e. 'internalization' and the 'process of self-perceived change orientation' are significant at .ol level of confidence. The hypothesis for the variable regarding the third and the fourth criterion variable is retained. The results thus reflect that the 'teachers' perception of the cohesiveness of the faculty' does not influence the 'time of awareness' or the 'time of adoption' of an innovation. Teachers' attitude towards a particular innovation and change process in general is affected in positive direction by his thinking of existence of friendly relations among his colleagues. When the teacher thinks that there is much cohesiveness among the staff members he accepts an innovation easily and internalization of the innovation is easier; he also thinks himself to be more change oriented.

Lin Nan et al. (1966) found a positive significant relationship between the variable and the 'time of adoption' and 'self-perceived change orientation', but they did not find any relationship with the 'internalization' of innovations. Rogers, Joyce et al. (1966) did not find any

relationship between this variable and the 'time of awareness' or the 'time of adoption', but it was found to be related to the teachers' 'perceived beneficiality of innovations.'

Variable 18 - Perceived frequency of general horizontal communication behaviour :

The hypothesis is,

' 'Perceived frequency of general horizontal communication has a positive relationship with the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived' change orientation of the teachers'.'

As Table 5.09 shows, this variable has a significant positive correlation with the 'time of awareness' and the 'time of adoption' but does not have any significant relationship with 'internalization' and the 'process of self-perceived change orientation.' Therefore, the hypothesis regarding the relationship between the variable and the first two criterion variables is retained and that with the third and fourth criterion variables is rejected. The findings of the study thus show that more is the perception of the exchange of ideas due to interaction between teachers, earlier the teachers come to know about innovations and adopt it. However, perception of general inter-action between colleagues does not influence 'internalization' and

the 'process of self-perceived change orientation' of the teacher.

This finding supports the finding of Michigan study by Lin Nan et al. (1966). Rogers, Joyce et al. (1966) found no significant relationship between reported frequency of general horizontal communication behaviour and teachers' 'time of awareness', 'time of adoption' and 'perceived beneficiality' of the innovation.

Variable 19 - Perceived frequency of horizontal communication about the innovation :

The hypothesis is,

'Perceived frequency of horizontal communication about the innovation is positively related to the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceved change orientation'.

This variable has a significant positive relationship with all the four criterion variables. The coefficients of correlation between this variable and the first two criterion variables are significant at .01 level and that with the third and fourth are at .05 level. Therefore, the hypothesis that there is a significant positive relationship

between the frequency of the horizontal communication about the innovation and the 'time of awareness', the 'time of adoption', its 'internalization' and the 'process of self-perceived change orientation' stands true. The findings of the study thus reveal that the interaction among the staff members about an innovation has direct bearing on the 'time of its awareness' and it seems to be quite natural. This also helps the teachers in adopting the innovation earlier and building up a favourable attitude for the innovation and hence stimulating the internalization of the innovation. Such inter-action also helps in developing favourable attitude towards the change process in general.

The finding is in conformity with that of Lin Nan et al. (1966) and Rogers, Joyce et al. (1966).

Variable 20 - Teachers' perception of students' benefit from the innovation :

The hypothesis is,

' Perception of the students' benefit from the innovation has a significant positive relationship with the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation.'

The coefficients of correlation between the variable and the first two criterion variables are not significant at

either of the .05 or .01 level, whereas the same are significant at .01 level for the other two variables i.e. 'internalization' and the 'process of self-perceived change orientation.' Therefore, the hypothesis that there is a positive relationship between the 'teachers' perception of the students' benefit from the innovation' and the 'time of awareness' and the 'time of adoption' is rejected. It is somewhat unnatural to find that the 'perception of students' benefit from the innovation does not influence the 'time of awareness' and specially the 'time of adoption' of the innovation. However, 'teachers' perception of students' benefit from the innovation does influence the 'internalization' of the innovation and the 'process of self-perceived change orientation' as the coefficients of correlation are positive and significant at .01 level. The hypothesis that there is a positive relationship between teachers' perception of students' benefit from the innovation' and 'internalization' and the 'process of self-perceived change orientation' is retained. The results thus show that more the teacher perceives that the students are benefited from the innovation, more is the internalization of the innovation and more change oriented the teacher thinks himself to be.

The findings of the study are in conformity with the findings of Michigan study by Lin Nan et al. (1966) and Thailand study by Rogers, Joyce et al. (1966) except their findings of a significant positive relationship of the variable with the 'time of awareness' in Thailand study.

Variable 21 - Teachers' perception of students' attitude towards the innovation :

The hypothesis is,

'Teachers' perception of students' attitude towards the innovation will have a significant positive relationship with the 'time of adoption' and 'internalization' process but will not have any relationship with the 'time of awareness' and the 'process of self-perceived change orientation.'

Table 5.09 shows that this variable has a significant positive relationship with all the four criterion variables included in the study. The 'r' values for the 'time of awareness', 'internalization' and 'process of self-perceived change orientation' are significant at .01 level and that for the 'time of adoption' is significant at .05 level. The hypothesis that 'teachers' perception of students' attitude towards the innovation', is positively related to the 'time of adoption'and 'internalization' is accepted but the hypothesis that the 'teachers' perception of students' attitude

towards the innovation' has no relationship with the 'time of awareness' and the 'process of self-perceived change orientation' is rejected. It is evident from the results that when the teacher thinks that the students are having favourable attitude towards the innovation he comes to know about it earlier, he adopts it early also. This perception also helps in internalization of the innovation i.e. the teacher develops a favourable attitude for the innovation and accepts it easily. The teachers who perceive students' favourable attitude towards the innovation, also perceive themselves to be more change oriented.

This variable was found to have a significant positive relationship with the 'internalization' and the 'process of self-perceived change orientation' but it was not related to the 'time of awareness' in the Michigan study conducted by Lin Nan et al. (1966). In the Thailand study of Rogers, Joyce et al. (1966) similar results were found

Variable 22 - General mass-media exposure :

The hypothesis to be tested is,

'Teachers' general mass-media exposure' has a significant positive relationship with all the four dimensions of the diffusion process within the school system.'

The correlation results of this variable show that it is positively related to the 'time of awareness' and the

'time of adoption' and the 'r' values are significant at .01 and .05 level, respectively. Surprisingly this variable does not have any significant relationship with 'internalization' and the 'process of self-perceived change orientation'. The hypothesis for the first two criterion variables i.e. the 'time of awareness', the 'time of adoption' is retained but for 'internalization' and the 'process of self-perceived change orientation' is rejected. Teachers who read newspaper regularly, read more books and magazines, and listen to radio, come to know about innovations earlier and adopt them earlier compared to the teachers who have less mass-media exposure. However, there is no difference between the teachers who are exposed and those who are not exposed to mass-media in their perception of being change oriented or attitudinal acceptance of the innovation.

Lin Nan et al. (1966) found that no relationship exists between general communication behaviour and the 'time of awareness', 'internalization' and 'self-perceived change orientation'. In their Thailand study Rogers, Joyce et al. (1966) found that teacher's mass communication exposure has a significant positive relationship with the 'time of awareness', the 'time of adoption' and the 'perceived beneficiality of innovations.' Marion (1966) also found that communication behaviour of an ihdividual is positively, related

to his innovation behaviour. Buch's (1972) findings do not show any relationship between principal's mass-media exposure and school's adaptability.

Variable 23 - Professional communication behaviour :

The hypothesis is,

'Professional communication behaviour has a significant positive relationship with the 'time of awareness', 'time of adoption', the 'internalization' of an innovation by the individual and the 'process of self-perceived change orientation'.'

The correlation results of the 'professional communication behaviour' with the four elements of the diffusion process (Table 5.09) reveal that this variable has a significant positive relationship with the 'time of awareness' and the 'time of adoption'. Therefore, the hypothesis that the 'professional communication behaviour of the teacher is positively related to the 'time of awareness' and the 'time of adoption' is retained. The coefficients of correlation of this variable with the 'internalization' and the 'process of self-perceived change orientation' are not significant at either levels,.05 or .01;therefore, the hypothesis that the 'professional communication behaviour' is positively related with the 'internalization' of an innovation and the 'process of self-perceived change orientation' is rejected.

The teachers who come to know about innovations earlier and adopt them earlier tend to read more professional books, journals, attend more professional meetings and listen to more professional talks on radio. However, this 'professional communication behaviour' does not influence the 'internalization' or the 'process of self-perceived change orientation.'

Carlson (1965) also did not get any significant relationship between professionalism and superintendents' innovativeness. However, Lin Nan et al. (1966), Rogers, Joyce et al. (1966) found a significant positive relationship between the individual's professional behaviour and his innovativeness. Penny (1970) reports educators involved in change process read more journals regularly. Buch's (1972) study does not indicate any relationship between the number of professional journals read by the principal and the school's adaptability.

Variable 24 - Cosmopoliteness (Exposure to wider environment) :

The hypothesis is,

'The cosmopoliteness nature of the individual is positively related to the individual's 'time of awareness', the 'time of adoption', 'internalization' of the innovation and the 'process of self-perceived change orientation.'

From Table 5.09 it is seen that this variable has a significant positive relationship with all the four dimensions of the diffusion process within the school system. All the 'r' values are significant at .01 level. Therefore, the hypothesis of existence of a significant positive relationship between cosmopoliteness and the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation' is retained.

More a teacher comes in contact with the outer world and exposed to various social environments more is the possibility of his being aware of the innovation and adapting it. His attitude towards a particular innovation becomes more positive as a result the innovation is accepted readily. He would perceive himself to be more change oriented in comparison to his colleagues.

This variable has been studied by a number of investigators of different traditions which support this finding. Ryan and Gross (1943), Menzel and Katz (1955), Lionberger and Coughenour (1957), found a significant relationship between cosmopoliteness and innovativeness. Carlson's (1965) West Virginia study showed a significant relationship between cosmopoliteness and innovativeness, but Allegheny County results did not reveal any relationship between these variables. Rogers (1962) summarizing many

studies from different fields came to the generalisation that early adopters are more cosmopolite. Lin Nan et al. (1966) did not find any relationship between teacher's cosmopoliteness and their innovative behaviour. Gulesian (1970) reports that innovators used more impersonal and cosmopolite sources than personal and localite sources. Penny (1970) while finding the characteristics of educators involved in change process reports that they are more cosmopolite. Hardy (1970) reports that the principals who are considered more effective advocates of change tend to be significantly more cosmopolite than the principals considered less effective advocates of change. Buch (1972) from her study on principal's characteristics and school adaptability concluded that cosmopolite orientation is a significant factor influencing school adaptability.

Variable 25 - Professional orientation :

The hypothesis is,

'Professional orientation of the individual has a significant positive relationship with the 'time of awareness', the 'time of adoption', 'internalization' of an innovation and the 'process of self-perceived change orientation.'

As the coefficients of correlation in Table 5.09 show that the variable has a significant positive relationship with the

'time of awareness,' the 'time of adoption' and 'internalization'. Values of 'r' being significant at .01 level the hypothesis for the first three variables is retained. The professional orientation of a person does not seem to have any relationship with the 'process of self-perceived change orientation' as the 'r' is not significant either at .01 or .05 level. Therefore, the hypothesis regarding this variable is rejected. The teachers who hold membership in a number of professional organizations tend to know about innovations earlier, adopt them earlier and accept the innovations readily compared to those who do not hold memberships in several professional organisations. However, there is no difference in the 'perception of self-perceived change orientation' of the teachers who are more professionally oriented and hold membership in different professional organisations and those who do not.

Carlson (1965) did not find any relationship between the professionalism of the superintendents and their innovativeness in both the samples i.e. Allegheny County and West Virginia, Lin Nan et al. (1966) found a positive significant relationship only between the 'time of adoption' and organisational membership. Holdaway and Seger (1966) held this factor significant to a certain extent in predicting innovativeness. Penny (1970) reports that the educators

involved in the change process attended more conferences. Buch (1972) found number of organizational membership as a significant factor contributing to school adaptability.

Variable 26 - Teacher's attitude towards profession :

The hypothesis is,

'Positive attitude of a teacher towards his profession will have a significant positive bearing on the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation.'

The 'r' values (Table 5.09) between teachers' attitude towards his profession and all the four criterion variables are not significant either at .01, or at .05 level of confidence. Therefore, the hypothesis is rejected. The results of the study show that the 'time of awareness' of an innovation, the 'time of its adoption', 'internalization' of the innovation and the 'process of self-perceived change orientation are not influenced by the attitude of the teachers towards their profession as it is measured by the tool selected in this study. Thus the diffusion process within the school system is not influenced by the attitude of the teachers towards the teaching profession. Teachers having favourable or unfavourable attitude towards teaching profession, come to know about the innovation more or less

at the same time and they adopt it at the same time. There is no difference in the 'internalization' and the 'process of self-perceived change orientation' of the teachers only due to favourable and unfavourable attitude towards their profession. The results obtained here seems to be somewhat unusual which might be due to the interaction effect of some other variables. As there is dearth of researches regarding these variables to support the findings of this study, a definite conclusion cannot be drawn regarding the relationship of the variable with the diffusion process within the school system. The findings of the study call for further inquiry.

Variable 27 - Conservatism vs radicalism

The hypothesis is,

'Radical attitude of the teachers has a significant positive relationship with the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation'.'

This variable does not have any relationship with the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation' as the 'r' values (Table 5.09) are not significant either at .01 or at .05 level. The hypothesis, therefore, is rejected. Conservative or radical, all the teachers have, more or less, the same time of

awareness and adoption of an innovation. There is no difference in the attitudinal acceptance of an innovation of a conservative and radical teacher.

The findings of this study does not support the findings of Rogers, Joyce et al. (1966) where they report a significant relationship between open-mindedness and the 'time of awareness' as well as 'perceived beneficiality of innovations.' Lin Nan et al. (1966) report a negative relationship between dogmatism and self-perceived change orientation. Mechling (1970) found that there is a significant correlation between scores on the Rokeach Dogmatism scale and scores on a measure of level of adoption of science teaching innovations among in-service programme participants. An inverse relationship existed between the scores of the two instruments. Most of the teachers who scored high on the Rokeach Dogmatism scale scored low on change in level of adoption and most of the teachers who scored low on the Rokeach Dogmatism scale scored high on change in level of adoption. Hardy (1970) reported that the principals considered to be more effective advocates of change, possessed a significantly stronger degree of flexibility than the principals considered as less effective advocates of change.

Bamberger (1970) found a significant positive relationship between the degree of open-mindedness of the faculty belief system and the rate of adoption of educational innovations. Marien (1966) did not find any relationship existing between dogmatism as measured by Rokeach's Dogmatism scale and innovativeness of the individual.

Variable 28 - Need for autonomy :

The hypothesis is,

'The 'felt need for autonomy' has a significant positive relationship with the 'time of awareness' of innovations, the 'time of adoption' of the innovation, 'internalization' and the 'process of self-perceived change orientation'.'

The 'r' values (Table 5.09) reveals that this variable has a significant positive relationship only with the 'process of self-perceived change orientation' and r value is significant at .05 level. The hypothesis, therefore, that there is a significant positive relationship between the 'felt need for autonomy' and the 'process of self-perceived change orientation' of the teachers is retained. This variable does not have any significant relationship with any other dependent variable of the study. The hypothesis, therefore, with regard to other dependent variables is rejected. The full freedom and power of taking decision in our country is not left to the teachers

and that is the main reason perhaps of not getting any relationship between the 'felt need for autonomy' and the 'time of awareness', the 'time of adoption' and the 'innovation-internalization'. The results, however, indicate a positive relationship between 'need for autonomy' and 'self-perceived change orientation' of the teachers. The teachers' desire for more freedom for decision making helps perceiving themselves to be more change oriented. Lin Nan et al. (1965), Rogers, Joyce et al. (1966) also did not find any relationship between teachers' 'need for autonomy' and their innovative behaviour.

Variable 29 - Socio-economic status :

The hypothesis is,

'Socio-economic status of the teacher does not have any significant relationship with any of the four dimensions of the diffusion process that are included in the present study.'

The correlation results of this variable and the four criterion variables (Table 5.09) show that the variable is significantly related to all the criterion variables. The 'r' values for the 'time of awareness' and the 'process of self-perceived change orientation' are significant at .01 level whereas those for the 'time of adoption' and 'internalization' are significant at .05 level. Therefore, the null hypothesis is rejected. The results of the study show that higher the

social status of a person earlier he becomes aware of the innovation and he adopts them also earlier. Higher socio-economic status of a person helps him in internalization of the innovation. An individual from higher socio-economic status perceives himself to be more change oriented.

'Social status has commonly been found to be positively related to innovativeness whether the measure of status be income, education, or size of farm operations', writes Lionberger (1958, p.84).Carlson (1965) found a similar relationship in his studies in Allegheny County and West Virginia. His findings show that a direct relationship exists between a superintendent's position and the status structure and the rate of adoption of Modern Mathematics. Lionberger (1958) is of opinion that although a positive correlation exists between innovativeness and social status, social status can also act as a barrier to communication and hence innovativeness. Innovators tend to enjoy the highest status in the community specially where norms are not favourable to substantial change.

Variable 30 - Organisational climate :

The hypothesis is,

'Organisational' climate of the school is significantly related to all the four dimensions of the diffusion process within the school system, viz. the 'time of awareness', the 'time of adoption,'internalization'

and the 'process of self-perceived change orientation.'

Coefficients of correlation (Table 5.09) between this variable and the four aspects of the diffusion are too low to be significant either at .01 or at .05 level. This shows that organisational climate of the school as measured by Halpin and Croft's OCDQ has no significant relationship with any of the four criterion variable of the present study. The hypothesis, therefore, is rejected.

The findings of this study are in conformity with the findings of Bamberger (1970). He did not find any positive relationship between the degree of openness of the organisational climate of a school system and the rate of adoption of educational innovations. Bennett (1968) concluded from his study of the relationship of organisational climate to innovations in selected schools of Pennsylvania and New York that there were fewer innovations in schools where the principal was characterised by close supervision of the staff and where he was highly directive. The number of innovations were more in schools which had relative freedom for the teachers to obtain high social needs satisfaction. He found a negative relationship between production emphasis which is dominant in closed climate schools and the number of innovations. His findings showed a positive significant relationship between autonomous climate and number of innovations. In his comparison of two highest

open climate with the two most closed climate schools, the more open climate schools were characterised by more innovations than closed ones. Roosa (1968) did not find any relationship between the number of educational innovations and the openness of organisational climate. Laverne (1968) found significant difference between school climates for the most innovative and the least innovative schools. Schools involved in innovation showed open climates. Buch (1972) did not find any relationship between eight dimensions of organisational climate i.e. disengagement, hindrance, esprit, intimacy, aloofness, production emphasis, thrust and consideration and acceptance of innovations in schools.

The foregoing analysis of the data using the product moment 'r' reveals that there are seven variables which are significantly (significant either at .05 or .01 level of confidence) related to all the four dimensions of the process of diffusion. These variables are, 'experience (as a teacher)', 'self-designated opinion leadership', 'ascribed opinion leadership', 'perceived frequency of horizontal communication about the innovation,' 'teachers' perception of students' attitude towards the innovation', 'Cosmopoliteness (exposure to wider environment)' and 'socio-economic status'. Out of the thirty independent variables taken in this study only these seven variables mentioned above seem to influence all the four aspects of the diffusion process.

The foregoing correlational analysis also reveals that 'sex', 'recency of training', urban and rural background',

'perceived source credibility of the principal', 'need for autonomy', 'conservatism vs radicalism' and 'organisational climate' these seven variables do not appear to have any influence on any of the four dimensions of the diffusion process selected in this study.

Of all the thirty independent variables 'educational qualifications' is the only variable which has a significant negative relationship with the 'process of self-perceived change orientation.' Of the remaining fifteen variables, 'professional orientation' is the only variable related to significantly to three dimensions, viz. the 'time of awareness', the 'time of adoption' and 'internalization' of the diffusion process.

'Age', 'perceived frequency of general horizontal communication', 'general mass-media exposure,' and 'professional communication behaviour' are positively related to both the 'time of awareness' and the 'time of adoption'. 'Vertical communication' has a significant positive relationship with both the 'time of awareness' and 'innovation internalization'.

Eight variables, viz. 'role satisfaction', 'feeling of security', 'perceived psychological distance between self and the principal', 'perceived psychological distance between other teachers and the principal', 'perceived change orientation of the principal', 'perceived principal's support of the innovation', 'perceived cohesiveness of the school faculty' and 'teachers'

perception of students' benefits from the innovation,' influence both 'internalization' of an innovation and the 'process of self-perceived change orientation.' 'Teachers' attitude towards teaching profession' seems to influence only the 'process of self-perceived change orientation.'

SECTION III

In Section II of this chapter, the relationship between the independent and the criterion variables has been studied by finding out the product moment coefficients of correlation. This analysis has one major limitation, viz. the absence of control of the influence of different variables on one another. Any correlational study not taking in account the inter-correlations between the variables involved is likely to give misleading results. When a set of variables influence another variable or a set of other variables the technique of multivariate analysis has to be utilised. In the present study, there are thirty independent variables on one hand and four criterion/dependent variables on the other. Canonical correlational analysis is the right technique to be used here. This technique involves a large amount of computational work which is possible only through the use of a computer provided, however, a computer programme of canonical correlational analysis is available. The investigator could not procure

such a programme and therefore, this technique had to be given up.The second technique belonging to the scheme of multivariate analysis is the multiple correlation and the multiple regression analysis. This technique has been used here.

Multiple correlation is a statistical method which provides an analysis of the relations among two or more predictor measures and a single criterion measure. The major goal of this analysis is the development of an equation for predicting the criterion score of a subject from his known set of predictor scores. The predicted score is the regressed score and it is a linear component of the predictor scores. In this technique of analysis it is also possible to determine the relative contribution of each predictor variable in explaining the variance in the criterion variable by using the step-wise regression analysis. The coefficient R^2 provides an estimate of the proportion of the total variance in the criterion that can be predicted from the known variance of the predictors, and is a measure of the overall effectiveness of the multiple regression.

In the present study the multivariate design of the study utilizes step-wise linear regression analysis to determine the ability of a combination of predictor variable to account for variance in the criterion variables. Step-wise

regression methods add or subtract one predictor at a time to the regression equation, seeking the 'best' set of predictors. Variables are added or dropped according to the statistical significance of their contribution to the prediction or uncertainty about the criterion. Veldman (1967) has described multiple regression as -

> 'Multiple regression analysis may be considered a general model for testing any hypothesis, cast in the form of predicting a criterion from particular sources of information. Especially important is the fact that the predictor information may be in the form of dichotomous scores reflecting group membership or may consist of scores on continuously distributed variables. Both kinds of predictor variables may be included in the same equation.'
> (in Wallace, 1970, P. 61.)

Some important principles to be borne in mind while undertaking the multiple correlation are :

1. R tends to be high when the independent variables have high correlation with the criterion variable;
2. R is larger when the independent variables selected have relatively low correlations among themselves;
3. Mere examination of the correlation of an independent variable with the criterion variable should not be the guiding factor for the selection of a variable to be included in the multiple regression analysis. The educational consideration should also have a place in the selection of variables as many times the real relationship of a sound predictor variable may be suppressed when there are a large number of independent variables.

In the present study the multiple regression analysis has been applied in the case of all the four criterion variables taken separately and also with respect to the total score of the four criterion variables taken together. Such a complicated analysis would not have been possible had it not been for the fact that step-wise multiple regression analysis computer programme was available. An important thing in multiple regression analysis is the selection of the variables for the multiple correlation analysis.This is necessary to avoid unnecessary computational work. The computer programme for multiple regression analysis, however, permitted the investigator to include all the thirty independent variables. The programme directed the computer to select one variable at a time in such a way that the combination yielded the highest possible R. Because of the availability of such a programme the investigator could skip over the step of selecting the relevant predictor variables involving complicated computations.

Tables 5.10, 5.11, 5.12, 5.13 and 5.14 give the results of Multiple Correlation (R) and the successive F values along with the degrees of freedom, step by step in the case of each of the four criterion variables as well as the total of the scores.

Table 5.10 : Results of step-wise regression analysis using all the independent variables and the criterion variable - the 'Time of Awareness'

Sr. No.	Variable	Multiple correlation coefficients	Degree of Freedom	F Value
1	2	3	4	5
1.	Self-designated opinion leadership	0.2224	1,440	125.84
2.	Cosmopoliteness (Exposure to wider environment)	0.2682	1,439	27.49
3.	General mass-media exposure	0.2931	1,438	15.44
4.	Age	0.3162	1,437	14.71
5.	Socio-economic status	0.3362	1,436	13.18
6.	Teachers' perception of students' attitude towards the innovation	0.3493	1,435	8.74
7.	Perceived principal's support of the innovation	0.3596	1,434	6.97
8.	Perceived frequency of horizontal communication about the innovation	0.3684	1,433	6.01
9.	Perceived change orientation of the principal	0.3753	1,432	4.77
10.	Perceived psychological distance between the self and the principal	0.3803	1,431	3.53
11.	Role satisfaction	0.3873	1,430	4.91
12.	Organisational climate	0.3920	1,429	3.28
13.	Professional orientation	0.3965	1,428	3.20
14.	Urban and rural background	0.4008	1,427	3.06

(continued)

Table 5.10 (continued)

1	2	3	4	5
15.	Teachers' perception of students' benefit from the innovation	0.4036	1,426	2.03
16.	Sex	0.4060	1,425	1.73
17.	Perceived cohesiveness of the school faculty	0.4079	1,424	1.35
18.	Professional communication behaviour	0.4096	1,423	1.18
19.	Perceived source credibility of the principal	0.4106	1,422	0.76
20.	Vertical communication	0.4112	1,421	0.41
21.	Experience	0.4119	1,420	0.50
22.	Ascribed opinion leadership	0.4124	1,419	0.34
23.	Conservatism vs radicalism	0.4129	1,418	0.39
24.	Need for autonomy	0.4134	1,417	0.32
25.	Recency of training	0.4137	1,416	0.19
26.	Attitude towards teaching profession	0.4139	1,415	0.17
27.	Perceived psychological distance between the other teachers and the principal	0.4140	1,414	0.06
28.	Educational qualifications	0.4141	1,413	0.05
29.	Feeling of security	0.4141	1,412	0.05
30.	Perceived frequency of general horizontal communication	0.4142	1,411	0.01

Table 5.11 : Results of step-wise regression analysis using all the independent variables and the criterion variable - the 'Time of Adoption'

Sr. No.	Variable	Multiple correlation coefficients	Degree of Freedom	F Value
1	2	3	4	5
1.	Perceived frequency of horizontal communication about the innovation	0.2020	1,440	111.38
2.	Professional communication behaviour	0.2433	1,439	23.95
3.	Ascribed opinion leadership	0.2604	1,438	10.16
4.	Feeling of security	0.2729	1,437	7.48
5.	Cosmopoliteness (Exposure to wider environment)	0.2852	1,436	7.49
6.	Sex	0.2967	1,435	7.10
7.	Age	0.3062	1,434	5.96
8.	Vertical communication	0.3172	1,433	7.01
9.	Self-designated opinion leadership	0.3270	1,432	6.29
10.	Urban and rural background	0.3342	1,431	4.64
11.	Attitude towards teaching profession	0.3413	1,430	4.63
12.	General mass-media exposure	0.3465	1,429	3.40
13.	Teachers' perception of students' attitude towards the innovation	0.3523	1,428	3.84
14.	Teachers' perception of students' benefit from the innovation	0.3599	1,427	5.07
15.	Socio-economic status	0.3653	1,426	3.65
16.	Educational qualifications	0.3720	1,425	4.50
17.	Role satisfaction	0.3765	1,424	3.10

(continued)

Table 5.11 (continued)

1	2	3	4	5
18.	Conservatism vs radicalism	0.3788	1,423	1.55
19.	Perceived cohesiveness of the school faculty	0.3810	1,422	1.52
20.	Professional orientation	0.3831	1,421	1.39
21.	Perceived psychological distance between self and the principal	0.3848	1,420	1.21
22.	Perceived psychological distance between other teachers and the principal	0.3896	1,419	3.28
23.	Need for autonomy	0.3913	1,418	1.17
24.	Organisational climate	0.3926	1,417	0.88
25.	Perceived change orientation of the principal	0.3939	1,416	0.86
26.	Experience	0.3948	1,415	0.62
27.	Recency in training	0.3960	1,414	0.84
28.	Perceived principal's support of the innovation	0.3962	1,413	0.14
29.	Perceived frequency of general horizontal communication	0.3962	1,412	0.04
30.	Perceived source credibility of the principal	0.3963	1,411	0.03

Table 5.12 : Results of step-wise regression analysis using all the independent variables and the criterion variable - the 'Internalization of the Innovation'

Sr. No.	Variable	Multiple correlative coefficients	Degree of Freedom	F-Value
1.	Teachers' perception of students' benefit from the innovation	0.4806	1,440	407.17
2.	Perceived change orientation of the principal	0.5569	1,439	75.54
3.	Ascribed opinion leadership	0.5706	1,438	14.04
4.	Perceived cohesiveness of the school faculty	0.5821	1,437	11.96
5.	Organisational climate	0.5874	1,436	5.56
6.	Role satisfaction	0.5924	1,435	5.29
7.	Need for autonomy	0.5964	1,434	4.36
8.	Socio-economic status	0.5989	1,433	2.71
9.	Perceived frequency of horizontal communication about the innovation	0.6015	1,432	2.77
10.	Teachers' perception of students' attitude toward the innovation	0.6034	1,431	2.07
11.	Perceived source credibility of the principal	0.6056	1,430	2.44
12.	Conservatism vs. radicalism	0.6071	1,429	1.60
13.	Sex	0.6085	1,428	1.50
14.	Experience	0.6097	1,427	1.37
15.	Recency of training	0.6155	1,426	6.44
16.	Perceived psychological distance between other teachers and the principal	0.6164	1,425	0.91

(continued)

Table 5.12 (continued)

1	2	3	4	5
17.	Perceived frequency of general horizontal communication	0.6173	1,424	1.00
18.	Professional communication behaviour	0.6180	1,423	0.79
19.	Professional orientation	0.6189	1,422	1.02
20.	Self designated opinion leadership	0.6195	1,421	0.73
21.	Vertical communication	0.6201	1,420	0.59
22.	Educational qualifications	0.6205	1,419	0.47
23.	Perceived psychological distance between self and the principal	0.6209	1,418	0.48
24.	Cosmopoliteness (Exposure to wider environment)	0.6214	1,417	0.50
25.	Age	0.6217	1,416	0.29
26.	Perceived principal's support of the innovation	0.6218	1,415	0.19
27.	Urban and rural background	0.6219	1,414	0.11
28.	General mass-media exposure	0.6220	1,413	0.04
29.	Attitude towards teaching profession	0.6220	1,412	0.04
30.	Feeling of security	0.6220	1,411	0.00

Table 5.13 : Results of step-wise regression analysis using all the independent variables and the criterion variable - the 'Process of Self-perceived change orientation'

Sr. No.	Variables	Multiple correlation coefficients	Degree of freedom	F value
1	2	3	4	5
1.	Perceived change orientation of the principal	0.4287	1,440	330.17
2.	Teachers' perception of students' benefit from the innovation	0.4613	1,439	26.57
3.	Socio-economic status	0.4805	1,438	16.22
4.	Perceived principal's support of the innovation	0.4850	1,437	3.76
5.	Perceived source credibility of the principal	0.4959	1,436	9.46
6.	Perceived psychological distance between other teachers and the principal	0.5017	1,435	5.08
7.	Role satisfaction	0.5045	1,434	2.46
8.	Conservatism vs. radicalism	0.5068	1,433	2.00
9.	Attitude towards teaching profession	0.5089	1,432	1.86
10.	Need for autonomy	0.5107	1,431	1.59
11.	Cosmopoliteness (Exposure to wider environment)	0.5127	1,430	1.73
12.	Vertical communication	0.5148	1,429	1.83
13.	Urban and rural background	0.5170	1,428	2.00
14.	Ascribed opinion leadership	0.5195	1,427	2.23
15.	Experience	0.5207	1,426	1.07
16.	Age	0.5262	1,425	4.86
17.	Recency of training	0.5274	1,424	1.07
18.	Professional orientation	0.5282	1,423	0.72
19.	Educational qualifications	0.5289	1,422	0.71
20.	Self-designated opinion leadership	0.5294	1,421	0.39

(continued)

Table 5.13 (continued)

1	2	3	4	5
21.	Organisational climate	0.5297	1,420	0.30
22.	General mass-media exposure	0.5300	1,419	0.23
23.	Teachers' perception of students' attitude towards the innovation	0.5302	1,418	0.21
24.	Perceived frequency of horizontal communication about the innovation	0.5305	1,417	0.22
25.	Feeling of security	0.5306	1,416	0.12
26.	Sex	0.5306	1,415	0.05
27.	Perceived frequency of general horizontal communication	0.5307	1,414	0.03
28.	Perceived psychological distance between self and the principal	0.5307	1,413	0.01
29.	Perceived cohesiveness of the school faculty	0.5307	1,412	0.00
30.	Professional communication behaviour	0.5307	1,411	0.00

Table 5.14 : Results of the step-wise regression analysis using all the independent variables and the combined scores of all the four criterion variables viz. the 'time of awareness', the 'time of adoption', 'internalization' of the innovation and the 'process of self-perceived change orientation'.

Sr. No.	Variables	Multiple correlation coefficients	Degree of Freedom	F value
1	2	3	4	5
1.	Perceived change orientation of the principal	0.3707	1,440	259.18
2.	Teachers' perception of the students' benefit from the innovation	0.4885	1,439	90.75
3.	Ascribed opinion leadership	0.5077	1,438	25.97
4.	Cosmopoliteness (Exposure to wider environment)	0.5309	1,437	21.61
5.	Socio-economic status	0.5431	1,436	11.63
6.	Teachers' perception of students' attitude towards the innovation	0.5535	1,435	10.12
7.	Experience	0.5593	1,434	5.80
8.	General mass-media exposure	0.5655	1,433	6.13
9.	Need for autonomy	0.5692	1,432	3.74
10.	Perceived source credibility of the principal	0.5721	1,431	2.91
11.	Role satisfaction	0.5766	1,430	4.58
12.	Sex	0.5796	1,429	3.05
13.	Recency of training	0.5826	1,428	3.05
14.	Self-designated opinion leadership	0.5856	1,427	3.10

(continued)

Table 5.14 (continued)

1	2	3	4	5
15.	Perceived frequency of horizontal communication about the innovation	0.5869	1,426	1.32
16.	Urban and rural background	0.5880	1,425	1.21
17.	Perceived psychological distance between self and the principal	0.5890	1,424	1.04
18.	Professional orientation	0.5901	1,423	1.10
19.	Feeling of security	0.5909	1,422	0.86
20.	Educational qualifications	0.5916	1,421	0.71
21.	Attitude towards teaching profession	0.5922	1,420	0.58
22.	Perceived cohesiveness of the school faculty	0.5926	1,419	0.45
23.	Vertical communication	0.5930	1,418	0.40
24.	Perceived principal's support of the innovation	0.5934	1,417	0.38
25.	Perceived psychological distance between other teachers and the principal	0.5936	1,416	0.19
26.	Perceived frequency of general horizontal communication	0.5937	1,415	0.13
27.	Organizational climate	0.5938	1,414	0.08
28.	Conservatism vs. radicalism	0.5939	1,413	0.09
29.	Age	0.5939	1,412	0.06
30.	Professional communication behaviour	0.5940	1,411	0.01

The F - values * given in the above tables have been calculated by using the following formula :

$$F = \frac{(R_1^2 - R_2^2)(N - m_1 - 1)}{(1 - R_1^2)(m_1 - m_2)}$$

Where R_1 = multiple R with larger number of independent variables

R_2 = multiple R with one or more variables omitted

m_1 = larger number of independent variables

m_2 = smaller number of dependent variables

N = Number of cases in the sample correlated

In tables 5.10, 5.11, 5.12, 5.13 and 5.14, the fourth column indicates the degrees of freedom. In the use of F tables, the df_1 degrees of freedom are given by $(m_1 - m_2)$ and df_2 degrees of freedom by $(N - m_1 - m_2)$.

'Time of Awareness' :

Table 5.10 gives the step-wise multiple correlation between the criterion variable - the 'time of awareness' and the independent variables taken one by one. It is clearly seen that all the thirty variables taken together do not

* Guilford, J.P., Fundamental Statistics in Psychology and Education (New York: McGraw Hill Book Co., Inc., Third Edition, 1956), p.400.

yield an R of more than .4142. These thirty variables can account for the variance within the criterion upto 17.14%. This shows that the phenomenon of the 'time of awareness' cannot be explained adequately by the variables selected in this study. The table indicates an R of .3753 between independent variables - 'self-designated opinion leadership', 'exposure to wider environment', 'general mass-media exposure', 'age', 'socio-economic status', 'teachers' perception of students' attitude towards the innovation,', 'perceived principal's support of the innovation,' 'perceived frequency of the horizontal communication about the innovation', 'perceived change orientation of the principal' and the criterion variable - the 'time of awareness'. Any further addition of a new variable does not increase R significantly. These nine variables account for only 14.09% of the variance in the criterion variable.

'Time of Adoption' :

Step-wise R between the criterion variable the 'time of adoption' and all the thirty independent variables is given in Table 5.11. The table shows that all the thirty variables taken together yield an R of .3963 only. Thus all the thirty variables account for the variance upto 14.70% within the criterion variable. It is thus clear that the phenomenon of the 'time of adoption' is related to some other variables which have not been considered in the present study. The

The variables which are selected in the present enquiry do not explain adequately the adoption behaviour of the teachers. However, the independent variables which yield significant R are 'perceived frequency of horizontal communication about the innovation', 'professional communication behaviour', 'ascribed opinion leadership', 'feeling of security', 'exposure to wider environment', 'sex', 'age', 'vertical communication', 'self-designated opinion leadership', 'urban and rural background,' 'attitude towards the teaching profession,' All these variables contribute significantly to the value of R and yield an R of .3413 which explains 11.65% of variance in the criterion variable, the 'time of adoption'. The results of the study call for further researches which would incorporate other variables not included in this study for predicting the 'time of adoption'.

'Innovation Internalization' :

Table 5.12 gives the results of step-wise regression analysis using all the thirty independent variables and the criterion variable, viz. the 'internalization' of the innovation. The R that all the thirty variables yield in the case of this criterion is .6220 which accounts for a total variance of 38.69% in this criterion variable. Out of all the thirty independent variables seven variables yield significant R at .05 level which comes to .5964 and thus the

variance accounted for in the criterion variable by these seven variables is 35.57%. The independent variables which are giving significant R are 'teachers' perception of the students' benefits from the innovation', 'perceived change orientation of the principal', 'ascribed opinion leadership', 'perceived cohesiveness of the school faculty', 'organizational climate', 'role satisfaction' and 'need for autonomy'. For a better prediction, further studies should be conducted taking new variables not included in this study.

'Process of Self-Perceived Change Orientation' :

Table 5.13 contains the results of stepwise R between the criterion variable the 'process of self-perceived change orientation,' and all the thirty independent variables. All the independent variables taken together give anR of .5307 with this criterion variable thereby explaining 28.16% of variance in the criterion variable. Out of the thirty independent variables selected in the present study, only six are giving significant R (at .05 level). These six variables are 'perceived change orientation of the principal', 'teachers' perception of students' benefits from the innovation', 'socio-economic status', 'perceived principal's support of the innovation', 'perceived source credibility of the principal', and 'perceived psychological distance between the principal and other teachers'. These six variables

yield an R of .5017 which explains 25.17% of the variance in the criterion.

Diffusion of Innovation within the School System :

The results of step-wise R are presented in Table 5.14 for the combined scores of all four dependent variables, viz. the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation' which have been incorporated in this study to measure the process of diffusion of innovation within a school system. Table 5.14 indicates that all the independent variables taken together give an R of .5940 which accounts for 35.38% in the measure of diffusion of innovation within the system. However, only eight variables i.e. 'perceived change orientation of the principal', 'teachers' perception of students' benefit from the innovation', 'ascribed opinion leadership', 'exposure to wider environment,' 'socio-economic status', 'teachers' perception of students' attitude towards the innovation', 'experience', and 'general mass-media exposure' yield a significant R of .5655 with the criterion variable, viz. the 'diffusion process' within the system. These eight variables taken together explain 31.98% of variance within the 'diffusion process' within the system. The results thus reveal that there are other variables apart from the thirty included in the study which are associated with the diffusion process within the system and they need exploration.

Regression Equations

The computer analysis provided not only the value of R and F but also the regression coefficients and the value of the constant needed for developing the regression equations. Tables 5.15, 5.16, 5.17, 5.18 and 5.19 give these values taking into consideration only those variables which give the maximum R.

Table 5.15 : Multiple R, Regression coefficients and the Alpha values for the variable - the 'Time of Awareness'

Sr.No.	Name of the Variable	Multiple R	Alpha	Regression coefficients							
1.	Self-designated opinion leadership	0.2224	1.55	0.17							
2.	Cosmopoliteness (Exposure to wider environment)	0.2682	0.73	0.13	0.07						
3.	General mass-media exposure	0.2931	-0.23	0.12	0.06	0.06					
4.	Age	0.3162	-0.89	0.12	0.06	0.07	0.27				
5.	Socio-economic status	0.3362	0.53	0.11	0.05	0.07	0.26	-0.53			
6.	Teachers' perception of students' attitude towards the innovation	0.3493	0.15	0.10	0.04	0.07	0.27	-0.55	0.23		
7.	Perceived principal's support of the innovation	0.3596	0.13	0.11	0.05	0.07	0.29	-0.49	0.28	-0.08	
8.	Perceived frequency of horizontal communication about the innovation	0.3684	0.24	0.09	0.04	0.07	0.29	-0.48	0.25	-0.08	0.15
9.	Perceived change orientation of the Principal	0.3753	0.54	0.09	0.05	0.07	0.31	-0.51	0.29	-0.08	0.14
				-0.04							

Table 5.16 : Multiple R, Regression coefficients and the Alpha values for the variable - the 'Time of Adoption'

Sr. No.	Name of the Variable	Multiple R	Alpha	Regression coefficients									
1.	Perceived frequency of horizontal communication about the innovation	0.2020	1.76	0.40									
2.	Professional communication behaviour	0.2433	1.19	0.31	0.10								
3.	Ascribed opinion leadership	0.2604	1.26	0.28	0.09	0.06							
4.	Feeling of security	0.2729	1.93	0.31	0.09	0.06	-0.10						
5.	Cosmopoliteness (Exposure to wider environment)	0.2852	1.42	0.27	0.08	0.06	-0.11	0.05					
6.	Sex	0.2967	0.69	0.27	0.08	0.07	-0.11	0.05	0.57				
7.	Age	0.3062	0.18	0.28	0.08	0.06	-0.11	0.04	0.62	0.21			
8.	Vertical communication	0.3172	0.18	0.31	0.09	0.07	-0.09	0.05	0.62	0.25	-0.06		
9.	Self-designated opinion leadership	0.3270	-0.33	0.27	0.08	0.06	-0.10	0.04	0.62	0.25	-0.08	0.09	
10.	Urban and rural background	0.3342	-0.13	0.26	0.09	0.06	-0.11	0.04	0.77	0.29	-0.07	0.08	-0.32
11.	Attitude towards teaching profession	0.3413	0.44	0.26 -0.01	0.09	0.06	-0.10	0.05	0.74	0.27	-0.07	0.09	-0.33

Table 5.17 : Multiple R, Regression coefficients and the Alpha values for the variable the 'Internalization'

Sr.No.	Name of the variable	Multiple R	Alpha	Regression coefficients					
1.	Teachers' perception of students benefits from the innovation	0.4806	8.96	2.21					
2.	Perceived change orientation of the principal	0.5569	5.60	2.03	0.29				
3.	Ascribed opinion leadership	0.5706	5.68	2.02	0.27	0.12			
4.	Perceived cohesiveness of the school faculty	0.5821	3.16	1.98	0.25	0.12	0.17		
5.	Organisational climate	0.5874	3.13	1.96	0.25	0.12	0.20	-0.15	
6.	Role satisfaction	0.5924	2.56	1.95	0.24	0.12	0.16	-0.17	0.12
7.	Need for autonomy	0.5964	3.86	1.97	0.24	0.12	0.16	-0.17	0.12 -0.10

Table 5.18 : Multiple R, Regression coefficients and the Alpha values for the variable the 'Process of Self-Perceived Change Orientation.'

Sr.No.	Name of the variable	Multiple R	Alpha	Regression coefficients					
1.	Perceived change orientation of the principal	0.4287	7.77	0.28					
2.	Teachers' perception of students' benefits from the innovation	0.4613	5.75	0.27	0.52				
3.	Socio-economic status	0.4805	7.55	0.26	0.52	-0.75			
4.	Perceived principal's support of the innovation	0.4850	6.96	0.25	0.50	-0.79	0.07		
5.	Perceived source credibility of the principal	0.4959	8.09	0.26	0.50	-0.78	0.15	-0.06	
6.	Perceived psychological distance between other teachers and the principal	0.5017	7.79	0.26	0.51	-0.75	0.12	-0.09	0.06

Table 5.19 : Multiple R, Regression coefficients and the Alpha values for the combined score of all the four dimensions of the diffusion process, viz. the 'Time of Awareness,' the 'Time of Adoption', 'Internalization', and the 'Process of Self-Perceived Change Orientation'.

Sr. No.	Name of the Variable	Multiple R	Alpha	Regression coefficients							
1.	Perceived change orientation of the principal	0.3707	27.21	0.69							
2.	Teachers' perception of students' benefit from the innovation	0.4785	17.03	0.61	2.60						
3.	Ascribed opinion leadership	0.5077	17.22	0.57	2.56	0.31					
4.	Cosmopoliteness (Exposure to wider environment)	0.5309	14.15	0.51	2.43	0.30	0.24				
5.	Socio-economic status	0.5431	18.81	0.49	2.45	0.27	0.22	-1.84			
6.	Teachers' perception of students' attitude towards the innovation	0.5535	17.68	0.46	2.03	0.26	0.20	-1.94	0.97		
7.	Experience	0.5593	17.07	0.45	2.03	0.22	0.18	-2.08	0.98	0.47	
8.	General mass-media exposure	0.5655	14.52	0.44	2.07	0.22	0.16	-2.11	0.99	0.51	0.16

From the foregoing tables the following regression equations have been developed in case of each one of the criterion variables.

'Time of Awareness' :

$$Y_1 = .09x_1 + .05x_2 + .07x_3 + .31x_4 - .51x_5 + .29x_6 - .08x_7 + .14x_8 - .04x_9 + .54$$

Where

Y_1 = Predicted score on the 'time of awareness' of an innovation,

x_1 = Score for self-designated opinion leadership.

x_2 = Score on exposure to wider environment,

x_3 = Score on general mass-media exposure,

x_4 = Score on age,

x_5 = Score on socio-economic status,

x_6 = Score on teachers' perception of students' attitude towards the innovation,

x_7 = Score on perceived principal's support of the innovation,

x_8 = Score on perceived frequency of horizontal communication about the innovation,

x_9 = Score on perceived change orientation of the principal.

'Time of Adoption' :

$$Y_2 = .26x_1 + .09x_2 + .06x_3 - .10x_4 + .05x_5 + .74x_6 + .27x_7 - .07x_8 + .09x_9 - .33x_{10} - .01x_{11} + .44$$

Where

Y_2 = Predicted score on the 'time of adoption' of an innovation

x_1 = Score on perceived frequency of horizontal communication about the innovation.

x_2 = Score on professional communication behaviour.

x_3 = Score on ascribed opinion leadership

x_4 = Score on feeling of security.

x_5 = Score on exposure to wider environment,

x_6 = Score on sex.

x_7 = Score on age.

x_8 = Score on vertical communication.

x_9 = Score on self-designated opinion leadership.

x_{10} = Score on urban and rural background.

x_{11} = Score on attitude towards teaching profession

'Internalization' :

$$Y_3 = 1.97x_1 + .24x_2 + .12x_3 + .16x_4 - .17x_5 + .12x_6 - .10x_7 + 3.86$$

Where

Y_3 = Predicted score on 'internalization' of the innovation'.

x_1 = Score on teachers' perception of students' benefit from the innovation.

x_2 = Score on perceived change orientation of the principal.

x_3 = Score on ascribed opinion leadership.

x_4 = Score on perceived cohesiveness of the school faculty.

x_5 = Score on organisational climate.

x_6 = Score on role satisfaction.

x_7 = Score on need for autonomy.

'Process of Self-Perceived Change Orientation' :

$$Y_4 = .26x_1 + .51x_2 - .75x_3 + .12x_4 - .09x_5 + .06x_6 + 7.79$$

Where

Y_4 = Predicted score on the process of self-perceived change orientation.

x_1 = Score on perceived change orientation of the principal

x_2 = Score on teachers' perception of students' benefit from the innovation.

x_3 = Score on socio-economic status.

x_4 = Score on perceived principal's support of the innovation.

x_5 = Score on perceived source credibility of the principal.

x_6 = Score on perceived psychological distance between other teachers and the principal.

'The Diffusion Process Within the School System' :

$$Y_5 = .44x_1 + 2.07x_2 + .22x_3 + .16x_4 - 2.11x_5 + .99x_6 + .51x_7 + .16x_8 + 14.52$$

Where

Y_5 = Predicted score on the diffusion process within the school system

x_1 = Score on perceived change orientation of the principal

x_2 = Score on teachers' perception of students' benefits from the innovation.

x_3 = Score on ascribed opinion leadership.

x_4 = Score on exposure to wider environment

x_5 = Score on socio-economic status.

x_6 = Score on teachers' perception of students' attitude towards the innovation.

x_7 = Score on experience.

x_8 = Score on general mass-media exposure

Next section of the chapter concentrates on the discussion of the results based on the analysis of data using the technique of product moment 'r', multiple correlation and regression analysis.

SECTION IV

THE DIFFUSION OF INNOVATIONS WITHIN A SCHOOL SYSTEM - GENERAL FINDINGS

The diffusion of innovations within a school has four major dimensions, viz. the 'time of awareness', the 'time of adoption', 'internalization' and the 'process of self-perceived change orientation'. Each of these four dimensions bears some relationship with one another. This relationship is seen in Table 5.20.

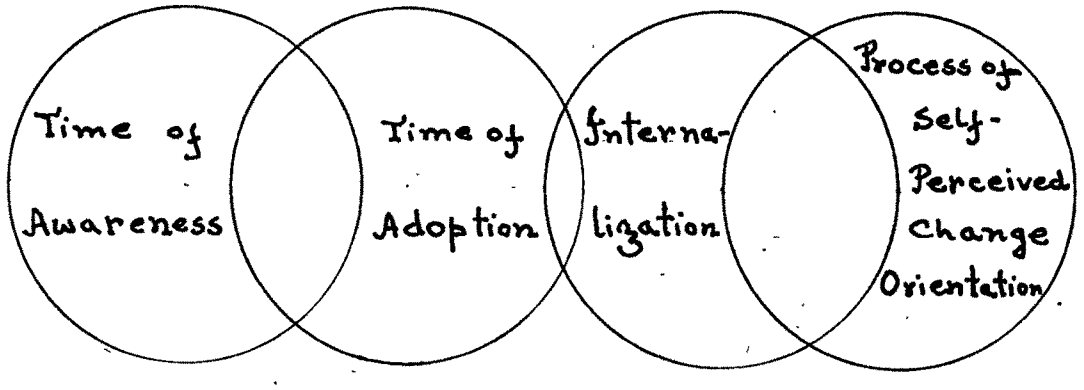
Table 5.20 : Correlation Matrix of all the four dimensions of the diffusion process, viz. the 'time of awareness', the 'time of adoption,', 'internalization', and the 'process of self-perceived change orientation.

	Time of awareness	Time of adoption	Internalization	Process of self-perceived change orientation
1. Time of awareness	1.00	.397**	.07	.01
2. Time of adoption	.397**	1.00	.15**	.09
3. Internalization	.07	.15**	1.00	.51**
4. Process of self-perceived change orientation	.01	.09	.51**	1.00

** Significant at .01 level
* Significant at .05 level

Table 5.20 reveals that the 'time of awareness' and the 'time of adoption' are significantly correlated. The 'time

of adoption' and 'internalization' process are again significantly correlated. Similarly 'internalization'and the 'process of self-perceived change orientation' are also significantly correlated. Thus the correlation matrix indicates a regular overlap between the four dependent variables. Diagramatically it can be represented as under :



The nature of this correlation indicates that the process of diffusion of an innovation within a school may consist of two or three factors.

What is the nature of 'diffusion of an innovation' within a school system ? Does it consist of all these four dimensions as considered in this study or the number of dimensions is less ? The present inquiry throws out an important issue in the very nature of the diffusion process within a school system requiring study. One thing, however, is clear that the 'time of awareness' and the 'time of adoption' are definitely correlated. Before an innovation could be adopted by a system the members of the system should

be aware of the innovation. The mass-media of communication like radio, television, newspapers, educational journals and the activities of extension centres in the form of organisation of seminars, symposia, conferences etc. are instrumental in making the schools and the teachers aware of the new innovations in the field of education. The correlation matrix also indicates that 'internalization' and the 'process of self-perceived change orientation' go hand in hand. Once the teachers develop a favourable psychological attitude towards an innovation there is a consequent readiness to accept the change. An innovation requires the creation of favourable attitude before it could be accepted by the potential users. The non-acceptance of a number of good innovations has been mainly due to the inability of the agency implementing the change to create the proper psychological orientation amongst the potential adopters.

When we examine the multiple regression equations predicting the various criterion variables we find that there are some variables which are not at all associated with any of the four dimensions of the diffusion process whereas there are some variables which are common in predicting one, two or three dimensions of the diffusion process. Of the thirty variables selected as independent variables in the present study varying numbers of independent

variables are significantly related to the different criterion variables. A study of the regression equations shows that nine variables significantly explain the 'time of awareness', eleven variables explain the 'time of adoption', seven explain 'internalization', six the 'process of self perceived change orientation' and eight variables explain the total diffusion process within a system. These results are summarised in Table 5.21 :

Table 5.21 : A summary of variables explaining significantly the 'time of awareness', the 'time of adaption', 'internalization' and the 'process of self-perceived change orientation' and the 'diffusion process' within a school system

Sr. No.	Variables	Time of awareness	Time of adoption	Internalization	Process of self-perceived change orientation	Diffusion process within the school system
1	2	3	4	5	6	7
1.	Age	✓	✓			
2.	Sex		✓			
3.	Educational qualifications					
4.	Recency of training					
5.	Experience					✓
6.	Urban and rural background		✓			

(continued)

Table 5.21 (continued)

1:	2	3	4	5	6	7
7.	Role satisfaction			✓		
8.	Feeling of security		✓			
9.	Perceived psychological distance between self and the principal					
10.	Perceived psychological distance between other teachers and the principal				✓	
11.	Perceived source credibility of the Principal				✓	
12.	Perceived change orientation of the Principal	✓		✓	✓	✓
13.	Vertical communication		✓			
14.	Perceived principal's support of the innovation	✓			✓	
15.	Self-designated opinion leadership	✓	✓			
16.	Ascribed opinion leadership		✓	✓		✓
17.	Perceived cohesiveness of the school faculty			✓		
18.	Perceived frequency of general horizontal communication					
19.	Perceived frequency of horizontal communication about the innovation	✓	✓			
20.	Teachers' perception of students' benefit from the innovation			✓	✓	✓

(continued)

Table 5.21 (continued)

1:	2	3	4	5	6	7
21.	Teachers' perception of students' attitude towards the innovation	✓				✓
22.	General mass-media exposure	✓				✓
23.	Professional communication behaviour		✓			
24.	Cosmopoliteness (Exposure to wider environment)	✓	✓			✓
25.	Professional orientation					
26.	Need for autonomy			✓		
27.	Conservatism vs radicalism					
28.	Attitude towards teaching profession		✓			
29.	Socio-economic status	✓			✓	✓
30.	Organisational climate			✓		

Table 5.21 shows :

1. There is no variable which is a common predictor of all the four criterion variables.
2. There is only one variable which significantly contributes to predicting (a) the 'time of awareness', (b) 'internalization', (c) the 'process of self-perceived change orientation. This variable is perceived change orientation of the principal.

3. 'Ascribed opinion leadership' is the common predictor of the 'time of adoption' and 'internalization',
4. 'Teachers' perception of students' benefit from the innovation' is the common predictor of the process of 'internalization' and the 'process of self-perceived change orientation.'
5. 'Socio-economic status' is a common predictor of the 'time of awareness' and the 'process of self-perceived change orientation.'
6. 'Age', 'self-designated opinion leadership', 'perceived frequency of horizontal communication about the innovation,' 'exposure to wider environment' are common predictors of the 'time of awareness' and the 'time of adoption.'
7. 'Perceived principal's support of the innovation' is the common predictor of the 'time of awareness' and the 'process of self-perceived change orientation'.

Thus one finds that there is no variable which is a common predictor of all the dimensions of the process of diffusion within a system; also, there are very few common predictors which include more than one dimension out of the four dimensions of the diffusion process considered in the present investigation. However, if we take those variables which predict the process of diffusion of innovation within the system as measured by the total score on all the four dimensions and also at least two of the four components, we

get the following variables, viz. (i) perceived change orientation of the principal, (ii) ascribed opinion leadership, (iii) teachers' perception of students' benefit from the innovation (iv) exposure to wider environment (v) socio-economic status. These five variables are some of the predicators of the 'process of diffusion' also predicting at least two components of the diffusion process within a system. The 'perceived change orientation of the principal' has been found to be a significant factor in the process of diffusion in the studies of Lin Nan et al. (1966) and Rogers, Joyce et al. (1966). 'Ascribed opinion leadership' also comes out as an important factor common to at least two dimensions of the diffusion process.

Though this study does not concentrate on the characteristics of an innovation and its diffusion, one significant finding of this study in this area is that 'teachers' perception of students' benefit from the innovation', plays a significant role in the diffusion process within a school system and also in the process of 'internalization' and the 'process of self-perceived change orientation'. The studies by Lin Nan et al. (1966) and Rogers, Joyce et al.(1966) also give a similar finding. Same is the case with the variable 'exposure to wider environment' which is found to predict the 'time of awareness', the 'time of adoption' and the 'total

diffusion process'. This variable has come out as a significant predictor of both innovativeness in almost all the studies in the area of diffusion of innovations. The mention may be made of the studies by Ryan and Gross (1943), Menzel and Katz (1955) Lionberger and Coughenour (1957), Gulesian (1970), Penny (1970) and Hardy (1970). Experience of the extension workers in the country has shown that those teachers who get the opportunity to be exposed to wider world through participation at state level and national level programmes adopt more innovations and show a higher degree of innovativeness. The 'socio-economic status' of the teachers has been found to be a significant predictor of the diffusion process. One can explain this only on the argument that teachers falling into the higher socio-economic status have greater opportunity to general mass-media exposure, exposure to wider environment and, therefore, they are likely to be more innovative. This requires further probe.

One of the findings of the present study is that some variables do not contribute significantly to predicting any of the four dimensions of the diffusion process. These are :

(i) educational qualifications,
(ii) recency of training,
(iii) perceived psychological distance between self and the principal,
(iv) perceived frequency of general horizontal communication,

(v) professional orientation, and

(vi) conservatism vs. radicalism.

Taken separately some of these variables appear to bear some relationship with the criterion variables but when the effects of other variables are partialled out, the role of these variables in predicting the diffusion process within a system appears non-significant. Educational qualifications, quite often, do not have any relationship with the work of the teachers in the school. In the State of Gujarat, the training colleges do not stipulate the offering of the school subjects at the degree level as a 'must' for admission. A student having a first class with sociology and philosophy is admitted to the college of education and becomes a teacher. His first class in B.A. is not helpful to him in becoming a good teacher.

'Recency of training' also does not contribute to the process of diffusion within a system. Perhaps it is the quality of training rather than the time of training that might be a contributing factor to the diffusion process within a system. This requires further studies.

'Perceived psychological distance between self and the principal' does not explain the process of diffusion. Apparently this appears rather a strange finding but an examination of

the correlation matrix (Appendix VII) of the inter-correlations between the variables grouped under the heading 'Perception of superior', explains this apparently strange finding. The variables belonging to this group are (i) 'perceived psychological distance between self and the principal', (ii) 'perceived psychological distance between other teachers and the principal', (iii) 'perceived source credibility of the principal,' (iv) 'perceived change - orientation of the principal,' (v) 'vertical communication', and (vi) 'perceived principal's support of the innovation'. The correlation matrix of these variables is given in Table 5.22.

Table 5.22 : The correlation matrix of the variables grouped as 'perception of superior'

	1	2	3	4	5	6
1.Perceived psychological distance between self and the principal	1.00	.80	.65	.20	.29	.51
2.Perceived psychological distance between other teachers and the principal		1.00	.68	.19	.31	.57
3.Perceived source credibility of the principal			1.00	.25	.27	.63
4.Perceived change orientation of the principal				1.00	.13	.19
5.Vertical communication					1.00	.33
6.Perceived principal's support of the innovation						1.00

(All the 'r' values in this table are significant at .01 level)

Table 5.21 shows that out of these variables 'perceived change orientation of the principal' is closely associated with predicting the 'time of awareness', 'internalization' the 'process of self-perceived change orientation' and the total 'process of diffusion'. 'Perceived principal's support of the innovation' is associated with predicting the 'time of awareness' and the 'process of self-perceived change orientation'. Other variables, viz. 'perceived psychological distance between other teachers and the principal', 'perceived source credibility of the principal', 'vertical communication' and contribute to predicting one or the other dimension of the process of diffusion. As the variable 'perceived psychological distance between self and the principal' is highly correlated with other variables (Table 5.22) which have come up as significant predictors of some of the components of the diffusion process it is quite natural that this variable does not have an influence independent of other variables included in the group.

'Perceived frequency of general horizontal communication' also does not contribute to predicting the process of diffusion. This variable is also highly correlated ($r = .44$) with the 'perceived frequency of horizontal communication about the innovation' which is a significant predictor of the

'time of awareness' and the 'time of adoption.'

'Professional orientation' is also highly correlated with 'professional communication behaviour'(r = .47) which significantly predicts the 'time of adoption'. The influence of this variable is already included into 'professional communication behaviour.' Therefore, it does not come out as a separate variable independent of the 'professional communication behaviour'. The study also indicates that 'conservatism vs radicalism' on the part of the teacher does not influence the process of diffusion within a system at all.

Implications

The present study is in the area of adoption and diffusion of an innovation in schools. The Indian educational system is undergoing rapid changes as a result of the increasing rate of social and technological changes. Both at the centre and the states, structures are being built to accelerate the process of change. No doubt educational innovations diffuse at a considerable rate from governmental sources to educational institutions in a society where there is a tendency for decentralisation. Dissemination of ideas and information from a source building authority to

institutions highly dependent upon the authority for finance, is usually rapid. But this does not mean that the new ideas and innovations are accepted and adopted by teachers within the school system. Unless and until the teacher who is the educational practitioner in classroom develops a favourable attitude towards any item of change, diffusion of innovation within a system becomes difficult. The principal of school occupies the key position to promote and facilitate change. The teachers in the school can translate the new ideas into reality. The present study has yielded some finding which have important implications for educational authorities engaged in bringing about educational change. Some of these implications are discussed below:

(1) For a rapid diffusion of innovation within a system it is necessary that the teachers are exposed to wider environment' in the society. This 'exposure to wider environment' has come out as the predictor of the 'time of awareness' and the 'time of adoption'. In fact this variable has come out as an important predictor of the diffusion process within the school. Teachers' 'exposure to wider environment' could be achieved if planned programmes of educational institutions are organised by professional bodies and governmental authorities. The Government of Rajasthan has an annual programme of taking selected principals

of secondary schools and inspectors of schools to educational institutions in different parts of the country. The Asian Institute of Educational Administration and Planning organised a programme under which deputy directors of education and joint directors of education of different States visited other provinces to study their administrative systems. Such programmes provide the opportunity to the teachers for an 'exposure to wider environment' periodically. To a certain extent this is achieved as a result of the teachers participating in professional conferences. The State departments of education should provide financial support for such programmes of educational visitations by teachers within the States and between the States.

(2) The 'frequency of horizontal communication about an innovation' as well as 'vertical communication' within the school system influence the 'time of awareness' and the 'time of adoption'. This finding underlines the need for a regular programme of staff meeting within the schools where educational practices tried out by teachers would be discussed. Another implication is the need for frequent discussions between the principal and the teachers. Such discussions should not be only for administrative purpose, but in such a conference the principal should discuss about

the new ideas with the teachers. The district education officer and extension workers have also a major role to play by personal contacts or through other means of communication with the principal and the teachers in the process of both vertical and horizontal communication which will accelerate the process of adoption of an innovation within an institution.

(3) Other important predictors of the diffusion process are the 'teachers' perception of the principal's change orientation' and 'his (principal's) support of the innovation'. An innovation gets bogged down when the teacher feels that the principal is not interested in the innovation and does not support it. This point has to be remembered by those engaged in bringing about change in school programmes. It is necessary that for the diffusion of an innovation within a school system and its adoption by teachers a change agent has to work patiently with the school principal. When the principal is well oriented to the innovation and the teacher perceives this change orientation of the principal, the adoption of innovation and its diffusion within the school system receives momemtum. 'Principal's support of the innovation' is one of the guarantees for the successful diffusion of an innovation

within the school. The major implication of this finding is the need for working with school principals with a view to orient him with the innovation on a priority basis before it is taken to the teachers. Experiences of the All India Council for Secondary Education and the examination unit of the National Council of Educational Research and Training as well as extension services departments lead us to the same conclusion. Attempts of these bodies to bring about change did not prove effective when they made a lateral entry into States and the schools within the States without involving the boards of secondary education in the States or the principals of the schools. Only when the chairmen and the secretaries of the boards were involved in the examination reform programme could make some significant headway.

(4) One more implication of the findings of the present enquiry is that the 'teachers' perception of students' attitude towards the innovation' and 'teachers' perception of students' benefit from the innovation' are important for the successful diffusion of an innovation within the school. If a teacher does not foresee any benefit for the students from an innovation he will not be enthusiastic about the innovation. Again, if the students do not have a favourable attitude towards the innovation the innovation will not

succeed in the system. The history of internal assessment in some of the States and universities supports this finding. Nobody will deny the educational principles underlying the system of internal assessment. Yet this innovation 'aimed at' doing justice to students' has been opposed by the students themselves. If the system of internal assessment has been running into rough waters in Indian universities, it is mainly due to the fact that teachers have not seen the benefits of students from this innovation and the students have not been able to develop a favourable attitude towards it. The main implication of this finding is that a successful diffusion of an innovation within a school requires the attitudinal acceptance of the innovation by the teachers as well as by the students. These are some of the important implications of the findings of the present enquiry.

Concluding Remarks

The present study is the fourth study in India in the area of innovation diffusion and adoption. The first one was taken up by Dr.Subbarao (1967), the second one was completed by Mrs.Shalini Bhogle (1969) and the third one was completed by Mrs.Piloo Buch (1972). This study has focussed on the diffusion process within a school system. The process of diffusion of an innovation within a school is

mainly dependent upon the perceptions and the behaviours of the teacher. The role of the principal and the characteristics of innovations are also important in determining the diffusion process within a system. In this study only the characteristics of teachers have been selected for being studied. The results indicate that teachers' characteristics do not predict the diffusion process to a considerable extent. The total contribution of teachers' characteristics has been found to be 35.38%. Buch (1972) in her study found the contribution of the principal in explaining the process of school adaptability to the tune of 57%. In order to understand the predictors of adoption and diffusion within a school system the future researchers will have to look for factors in the following areas and study these simultaneously with the same sample of schools :

(a) factors related to school principal,
(b) factors related to school teachers,
(c) factors related to the nature of the innovations,
(d) factors related to the institutional climate, management, school finance etc.

A study involving all these factors will probably reveal the real nature of the predictors of adoption and diffusions. The investigator looks upon the present study as a major step in our efforts to understand the change process in our schools.
