C H A P T E R IV

DATA ANALYSIS AND RESULT

CHAPTER-IV

DATA ANALYSIS AND RESULT

4.1 INTRODUCTION

In previous chapters the scheme of analysis of the data collected was given. The data thus collected were analysed and results were interpreted. In this chapter, the analysis with the result are presented. The analyses are presented according to the objectives of study.

4.2 RELATIONSHIP OF AGGRESSION WITH SELECTED VARIABLES SEPARATELY

First objective of the study was to study the relationship of aggression with Self Concept, Achievement Motivation, Academic Performance and Non-Academic Performance separately for whole sample, males, females, Allahabad Sample and Baroda Sample.

4.2.1 The coefficient of coorelation:

The relationships were indicated by the product moment coefficient of correlation. The results of analyses are given in Table 4.1 for the total sample including

Allahabad boys, Allahabad girls, Baroda boys and Baroda girls.

TABLE-4.1

Relationship of aggression with selected variables in the total sample.

S.No.	Variables	rs.	Remarks.
1.	Agg. and Self Concept	- 0.001	n.s.
2.	Agg. and Ach.Moti.	- 0	n.s.
3.	Agg. and Acad.Perf.	+ 0.012	n.s.
4.	Agg. and Non-Accad.Pref.	- 0.002	n.s.

It can be seen from the table that the calculated 'r' is - 0.001 between Aggression and self concept,but the value required to be significant at.05 level should be 0.091 with df = 562 (vide Table 25 Garrett 1969). Since the calculated value is less than the obtained value, it can be said that there is no relationship of Aggression with self concept. Same is the case of

relationship of Aggression with Academic and with Non-Academic Performance where values lie much below to be significant at .05 level. In case of Aggression and Achievement Motivation value of 'r' is zero.Thus the findings show that there is no relationship of Aggression with selected variables. The results are insignificant and practically zero in all the cases. In above case the total sample was taken. To get any insight, more detailed analysis was done by breaking the sample into four groups for each variable selected to bear any relationship with aggression. This is represented in the table 4.2.

TABLE-4.2

Relationship of Agg. with selected variables in different sub samples

S.No.	Samples	Allahabad		Baroda	
	Variables	Boys	Girls	Boys	Girls
1.	Agg.and Self Concept.	-0.061	- 0.017	0.024	0.031
2.	Agg.and Ach. Moti	-0.005	0.004	0.002	-0,036
3.	Agg.and Acad Perf.	-0.001	-0.002	0.000	-0.001
4.	Agg. and Non Acad Perf.	0	0.006	0	-0.002

It is seen from the table 25 (Garrett 1967) that the table values of 'r' in different groups of samples are 0.143 with df 1/174 for Allahabad boys; 0.148 with df 1/176 for Allahabad girls 0.213 with df 1/98 for Baroda boys and 0.201 with df 1/108 for Baroda girls, to be significant at .05 level while the contained values for 'r' between Aggression and Self concept are - 0.061, - 0.017, - 0.025, 0.031 for the Allahabad boys, Allahabad girls, Baroda boys and Baroda girls samples respectively which are far below the significant values.

In the same way the obtained values for 'r' between aggression and achievement motivation are much below the values to be significant at.05 level hence there is no relationship of aggression with Achievement Motivation in all the sub samples.

Again the obtained r's are much below to be significant at.05 level (vide Table 25, Garrett 1967) in all the four sub samples, both in case of relationships of Aggression with Academic Performance and

with Non Academic Performance.

4.2.2 Coefficient of Correlation Ratios:

Correlation ratio is a measure of the degree to which association between the variables approaches a functional relationship expressible in the form $y = F(x)$ where $F(x)$ is a single valued function of x correlation ratio η is the ratio of the S.D. of the weighted means of the arrays of the y's to the S.D. of all the y's of the distribution.

According to Goon, Gupta, Das Gupta (1975) "Because of the close connection between correlation coefficient and linear regression , it is clear that the former can serve as a satisfactory measure of the relationship between two variables only when that relationship is of the linear type. Hence a low value of the correlation coefficient does not rule out the possibility that the variables are related in some other manner.

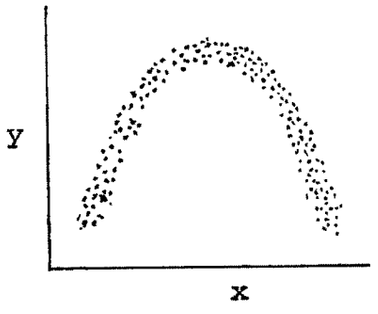

Fig. 11.4

If x and y have a non linear relationship like that in fig. 11.4 the least square regression line will be approximately parallel to the axes of the coordinates and hence 'r' will be very small although actually there may be a strong relationship between the variables ..."

The sum of the squares of the deviations in any array being least when they are measured from the mean of the array thus

$$1 \geqslant \eta_y^2 \geqslant r^2$$

When the regression of y on x is linear, the straight line of means of arrays coincides with the line of regression, and y^2 η_y^2 is then equal to

to r^2. A non zero value is thus associated with a departure of the regression from linearity.

Because r's were too small, non-linear relationships were then assummed and the data were analysed for that using correlation ratioes (η) or eta co-efficients. These coefficients are shown in the table-43 .

TABLE-4.3

r's, η's and departure from linearity in relationships of agg. with selected variables in total sample.

S.No.	Variables	rs	ηs	$\eta^2 - r^2$
1.	Agg. and Self Concept	- 0.001	0.205	.042
2.	Agg. and Ach.Moti.	0	0.049	.002
3.	Agg. and Acad.Perf.	0.012	0.123	.015
4.	Agg. and Non Acad.Perf.	0.002	0.099	. 010

The above values for the departure are not zero in any of the case. The departure from linearity is greatest in case of relationship of aggression with

self concept and when compared to the corresponding r, the value indicate that there may be some departure from linear regression.

In case of relationship of aggression with achievement motivation it is .002, which is very little to account for the departure from the linearity. But as compared to the zero r this slight departure may be due to sampling error.

In case of aggression and academic performance the departure is in the second decimal place and is small . The departure from linearity is in the decimal place and it is also very low.

The sample was then broken into sub samples of Allahabad boys, Allahabad girls, Baroda boys and Baroda girls and η's were calculated for each and the departures from linearity was calculated for relationship of aggression with selected samples viz. Self concept, Achievement motivation, Academic performance and Non academic performance. The values are shown in the following tables separately.

TABLE-4.4

r's, η's and departures from linearlity in relationship between agg. and self concept in sub-samples.

Cities	Allahabad			Baroda		
Sex	r_s	η_s	$\eta^2 - r^2$	r_s	η_s	$\eta^2 - r^2$
Boys	- 0.061	0.225	0.047	-0.024	0.379	0.143
Girls	- 0.017	0.420	0.176	0.031	0.292	0.084

Here again the departure is very low. It is a little high in case of Baroda boys where it is 0.143 i.e. in the first decimal place. There may be a non linear relationship between aggression and self concept in Baroda boys. The same is the case with Allahabad girls where it is 0.176. Thus in case of Allahabad girls there may be a non linear relationship between aggression and self concept. But in case of Baroda boys again the departure is not very high. But these departures are greater than what was observed

when the sample was taken as a whole. Further studies with refinement may throw some light on this.

TABLE-4.5

r's , η's and departures from linearity in relationships between agg. and ach. moti. in subsamples

Sex.	Cities	Allahabad			Baroda		
	r_s	η_s^2	$\eta^2 - r^2$		r_s	η_s	$\eta^2 - r^2$
Boys	- 0.005	0.099	0.010		0.002	0.062	0.004
Girls	0.004	0.259	0.067		-0.036	0.230	0.052

From the above table it is very evident that the departures from linearity are very small in all the cases and so there may not be any real departure.

TABLE-4.6

r's, η's and departures from linearity in relationship between agg. and acad. perf. in sub samples.

cities Sex	Allahabad			Baroda		
	r_s	η_s	$\eta^2 - r^2$	r_s	η_s	$\eta^2 - r^2$
Boys	0.001	0.223	0.050	0	0.213	0.045
Girls	-0.002	0.252	0.063	-0.001	0.260	0.068

In the above table the departure values are in the second decimal place so there may be no real departure from the linearity.

TABLE-4.7

r's, η's and departure from linearity in relationship between agg. and non agg perf. in Sub Samples

Cities / Sex	Allahabad r_s	Allahabad η_s	Allahabad $\eta^2 - r^2$	Baroda r_s	Baroda η_s	Baroda $\eta^2 - r^2$
Boys	0	0.164	0.027	0	0.397	0.158
Girls	0.006	0.444	0.197	-0.002	0.299	0.090

Here the departure values are low in case of Allahabad boy and also in case of Bearoda girls.But in case of Baroda boys the departure from linearity is a little high and in case of Allahabad girls the departure is as high as 0.2 (approx) which may account for the true departure from linearty.

From the above analysis it could be said that in most of the cases the departure from the linearity

was very small. Only in four cases the departure was a bit high to account for any tendency for real departure. These meant that Baroda boys showed some tendency for non-linear relationship between aggression and self concept. The same was true in case of Allahabad girls. The third case where the departure value was higher as compared to other values was in the relationship between aggression and non-academic performance in Baroda boys and the fourth case was the case of Allahabad girls having some tendency for non linear relationship between aggression and non academic performance.

4.3 EFFECT OF SELF CONCEPT AND ACHIEVEMENT MOTIVATION AND THEIR INTERACTION ON AGGRESSION

Second objective of the study was to see the effect of two variables viz. Self Concept and Achievement Motivation and their interaction on Aggression. For this the data were analysed using 3 x 3 Factorial Design analysis of Variance (ANOVA) with unequal cell sizes. This meant that the self concept was having three (3) levels viz. high self concept, average self concept and low self concept. Similarly the variable

Achievement motivation also had the three levels viz. high achievement motivation, average achievement motivation and low achievement motivation.

Here high level meant scores lying 1.S.D. above the mean and low level the mean the scores lying 1 S.D. below the mean score in case of both the variables. The summary of analysis is given in the table 4.8.

TABLE-4.8

Summary of ANOVA for Aggression

Source of variation	df	SS	MSS	F
Self Concept	2	333.28	166.64	1.88
Achievement Motivation	2	78.58	39.29	0.44
Self Concept X Ach.Moti.	4	460.63	115.15	1.30
Error	555	49811.68	88.52	

It can be seen from the above table that the F-value for self concept is 1.88 which is not significant (vide table 4.8) . This means that mean aggression scores

of subjects belonging to high, average and low levels of self concept do not differ significantly. In other words self concept had no significant effect on aggression of subjects. Thus the hypothesis viz. there is no significant influence of self concept on Aggression is not rejected.

Similarly the F value of achievement motivation is 0.44 which again is not significant. This means that mean aggression scores of subjects belonging to high, average and low levels of achievement motivation do not differ significantly.

In other words, achievement motivation had no significant effect on aggression of subjects. Thus the hypothesis which states that 'there is no significant influence of achievement motivation on aggression" is not rejected.

From Table 4.8 it can be observed that F value for the interactions between self concept and achievement is 1.30 which is not significant. It reflects that there was no siginificant effect of interaction between

self concept and achievement motivation on aggression of student. In this context the hypothesis viz "there is no significant influence of interaction of achievement motivation and self concept of aggression" is not rejected.

4.4 EFFECT OF ACADEMIC RERFORMANCE AND NON ACADEMIC PERFORMANCE AND THEIR INTERACTION OF AGGRESSION

Third objective of the study was to study the effect of Academic performance and Non-Academic Performance and their interaction on Aggression. For this again the 3 x 3 factorial Design Analysis of variance with unequal cell size was used. This means that the variable Academic Performance was having three levels viz. high academic performance, average academic performance and low academic performance. The similar was the case with non academic performance having high, average and low levels. High level meant scores 1 S.D. above the mean and low level meant scores 1 S.D. below the mean score in case of both the variables . The summary of the analysis is given in the

Table 4.9 below:

TABLE-4.9

Summary of ANOVA for aggression.

Source of Variation	df	SS	MSS	F
Academic Performance	2	477.53	238.77	2.62
Non Academic Performance	2	134.09	64.04	0.74
Acad.Perf x Non Acad.Perf.	4	60.70	15.18	0.168
Error	555	50352.59	910.9	

It can be seen from the table 4.9 that the calculated F-value for Academic Performance is 2.62 which is not significant. This means that mean aggression scores of subjects belonging to high, average and low level of academic Performance do not differ significantly. This means that Academic Performance has no significant effect on Aggression of subjects. In the light of this the null hypothesis that "there is no significant effect of Academic Performance on Aggression" is not rejected.

Similarly the obtained value for Non Academic Performance is 0.74 which again is not significant. This means that mean aggression scores of subjects with high, average and low levels of Non-Academic Performance do not differ significantly. In other words it can be said that there is no significant effect of Non-academic Performance onthe Aggression of subjects. Thus the null hypothesis namely "there is no significant effect of Non Academic Performance on Aggression" is not rejected.

It is seen from the table 4.9 that the F-value for the interaction between Academic Performance and Non-Academic Performance is 0.168 which is not significant. It reflects that there is no significant effect of interaction between Academic Performance and Non Academic Performance on Aggression of subjects. Thus the null hypothesis that "there is no significant effect of interaction of Academic and Non-Academic Performance on Aggression" is not rejected.

4.5 EFFECT OF SEX AND CITY AND THEIR INTERACTION ON AGGRESSION:

Fourth objective of the study was to study the particular effect of sex and city of residence and their interaction on aggression scores of subjects. For this the data were analysed using 2 x 2 Factional Design Analysis of variance with unequal cell size.The summary of ANOVA is given below:

TABLE-4.10

Summary of ANOVA

Source of variations	df	ss	mess	f
Sex	1	1518.63	1518.63	17.04**
City	1	573.32	573.32	6.43**
Sex X city	1	89.33	89.33	1.0
Error	560	49906.36	89.14	

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

The calculated F-Falue for sex is 17.04 which is significant at 0.01 level with of 1/560. This shows that the mean aggression scores of male subjects differ significantly from those of female subjects. Thus the null hypothesis that "there is no significant effect of sex on aggression" is not accepted.

Further the mean aggression score of male subjects (Mm=22.47) was significantly higher than those of female subjects (Mf=19.91). It may therefore be said that male subjects were more aggressive as compared to their female counterparts.

From table 4.10 it may be seen that the F-value for city is 6.44 which is significant at 0.01 level with df of 1/560. This shows that the mean aggression score of subjects belonging to Allahabad city differs significantly from those belonging to Baroda city. Thus the null hypothesis that there is no significant effect of a particular city (place of residence) on Aggression" is rejected. Further the mean aggression score of subjects

belonging to Baroda city was significantly higher than those belonging to Allahabad city. It was, therefore, be said that Baroda subjects were more aggressive as compared to Allahabad subjects.

Table 4.10 also shows that the F-value for interaction between sex and city is 1.0 which is not significant. It reflects that there is no significant effect of interaction between sex and a particular city on aggression of subjects. In this context the null hypothesis viz "there is no significant effect of interaction of sex and the particular city on aggression" is not rejected.

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