CHAPTER IV

RESULTS

This chapter presents the research results of the data collected from the parents whose children were studying in the urban public and private primary schools of Bhutan, as appearing on Table 3 to Table 17. The following symbols were used to identify the variables;

X_1: Parenting

X_2: Communication

X_3: Volunteering

X_4: Learning at home

X_5: Decision making

X_6: Community Collaboration

X_T: Parent and Family Involvement in school

Y: Student Academic Performance

r: Pearson product Moment correlation Coefficient.

R: Multiple correlation coefficients

R^2: Multiple Coefficient of Determinations

β: Standardize Regression Coefficient

b: Unstandardized Regression Coefficient

F: F-test

Z: Standardized Score

SE: Standard Error of Estimation

a: Constant

Part 1: The Demographic Data of Respondents

This part is to describe the profiles of the Bhutanese parents, used as the sample

Table 3 Demographic Characteristics of Respondents (N=408)

Characteristics	N	Percentage
Marital status		
Divorce	31	7.6
Living Together	377	92.4
Total	408	100
Education		
Higher Education	174	42.6
Less than Higher Education	234	57.6
Total	**408**	**100**
Income		
High Income	32	7.8
Middle Income	166	40.7
Low Income	210	51.7
Total	**408**	**100%**

The data in the table 3 revealed that majority (92.4 %) of the parents were living together and 7.6% were divorced. The data indicated that majority of respondents have educational qualification less than higher education (42.6 % and 57.4% respectively) In case of income level of respondents, 7.8 % of the respondents were high income family, 40.7% were middle income family and 51.5 % were low income family.

Part 2A: The Factors of Parent and Family Involvement in School

This part is intended to present the factors of parent and family involvement in School

Table 4 The Overall Level of Six Factors of Parent and Family Involvement in School (N=408)

Factors of Parent and Family Involvement in school	Mean	S.D	Level of Agreement
Parenting (X_1)	4.39	.46	High
Communication (X_2)	3.98	.70	High
Volunteering (X_3)	3.09	.80	Neutral
Learning at Home (X_4)	4.39	.58	High
Decision Making (X_5)	4.36	.75	High
Community Collaboration (X_6)	3.54	.87	High
Average of Parent and Family Involvement factors (X_T)	**3.96**	**.50**	**High**

Table 4 revealed that in overall, the respondent's level of agreement on six factors of parent and family involvement was at high level. The respondent's level of agreement on five factors(parenting (X_1), communication (X_2), learning at home (X_4), decision making (X_5) and collaboration with community (X_6) of parent and family involvement in school was indicated at high level except for volunteer factor (X_2), which was shown at neutral level.

Table 5 The Level of Parenting Factor of Parent and Family Involvement in School (N=408)

Measures of parenting factor of parent and family involvement in school (X$_1$)	Mean	S.D	Level of Agreement
Improve learning at home through regular monitoring	4.50	.69	Very high
Monitor Child's Habit of watching TV	3.97	.88	High
Support child to select nutritious food	4.26	.73	High
Ensure child to have adequate sleep	4.47	.70	High
Develop positive values and attitude	4.63	.57	Very high
Discuss with child on importance of good education	4.49	.67	High
Average of Parenting Factor (X$_1$)	**4.39**	**.46**	**High**

Table 5 indicated that the overall level on the parenting factor of the parent and family involvement in school was at high level with the Mean score at 4.39. Of six measures of parenting factor of parent and family involvement in school, the respondent's level of agreement was very high with first and fourth measures of parenting factor, the rest were at high level.

Table 6 The Level of Communication Factor of Parent and Family Involvement in School (N=408)

Measures of communication factor of parent and family involvement in school (X_2)	Mean	S.D	Level of Agreement
Visit school and meet teachers to share my goals in child's learning	3.87	.87	High
Communicate with my child school to ensure excellent attendance	4.00	.85	High
Discuss with child on his or her academic strength and weakness	4.39	.69	High
Visit child's school to know his or her performance in class and school	4.06	.89	High
Contact school teachers through phone calls, letters and emails	3.71	.99	High
Communicate with teachers on my child's problem in learning and behavioral issues	3.86	.91	High
Average of Communication Factor (X_2)	**3.98**	**.70**	**High**

Table 6 indicated that the respondents overall level of agreement on the communication factor of parent and family involvement in school were at high level. The average mean score for the communication factor was 3.98. The table 6 also revealed that respondents level of agreement on all the seven measures of communication factor were at high level.

Table 7 The Level of Volunteering Factor of Parent and Family Involvement in School (N=408)

Measures of volunteering factor of parent and Family Involvement in school (X_3)	Mean	S.D	Level of Agreement
Volunteer in making teaching learning aid or materials in my child's academic learning	3.37	1.11	Neutral
Volunteer to accompany child during study tour or any school activities	3.05	1.04	Neutral
Volunteer to clean class room of child	2.59	1.14	Neutral
Volunteer to provide transportation to my child's school	2.89	1.16	Neutral
Voluntarily donate money and materials for school improvement and learning	3.51	1.09	High
Volunteer in safe operation of school	3.14	1.15	Neutral
Average of Volunteering Factor (X_3)	**3.09**	**.80**	**Neutral**

Table 7 revealed that the respondents overall level of agreement on volunteering factor of parent and family involvement in school were at neutral level. The result showed that the overall average Mean score of volunteering factor at 3.09. Of six measures of volunteering factor, the respondent's level of agreement on fifth measures was at high level, the rest were at neutral level.

Table 8 The Level of Learning at Home Factor of Parent and Family Involvement in School (N=408)

Measures of learning at home factor Parent and family Involvement in school (X₄)	Mean	S.D	Level of Agreement
Make learning schedule at home to do homework	4.38	.77	High
Monitor child's work at home to improve learning in subject	4.47	.64	High
Help child to set up academic goals	4.03	.83	High
Guide child to do homework and school assignments on time	4.52	.71	Very High
Encourage reading at home	4.56	.67	Very High
Average of Learning at Home Factor (X₄)	**4.39**	**.58**	**High**

Table 8 showed that in overall, the respondent's level of agreement on learning at home factor of parent and family involvement in school was at high level. The average Mean was 4.39. The respondent's level of agreement was very high with fourth and fifth measures of learning at home factor, the rest measures were at high level.

Table 9 The Level of Decision Making Factor of Parent and Family Involvement in School (N=408)

Measures of decision making factor of Parent and Family Involvement in school (X₅)	Mean	S.D	Level of Agreement
Attend parent- teacher meeting to discuss child's school policy and issues.	4.45	.77	High
Support my child's school discipline policy by attending school- parent meetings.	4.41	.82	High
Reinforce my child's school discipline policy by attending parent teacher meetings.	4.23	.87	High
Average of Decision Making Factor (X₅)	**4.36**	**.75**	**High**

Table 9 showed that in overall, the respondent's level of agreement on decision making factor of parent and family involvement in school was at high level. The average Mean was 4.36. The respondent's levels of agreement were high with all measures of decision making factor.

Table 10 The Level of collaboration-with-Community Factor of Parent and Family Involvement in School (N=408)

Measures of collaboration-with-community factors of Parent and Family Involvement in school (X_6)	Mean	S.D	Level of Agreement
Support "Poor Family Support Program" of my child's school in the community.	3.44	1.10	Neutral
Participate in the "Cleaning Campaign Program" of my child's school in the community.	3.53	1.14	High
Take part in the "Community Education Program" child's school in the community.	3.22	1.08	Neutral
Aware of health and youth related programs of my child's school in the community.	3.98	1.00	High
Average of Community Collaboration (X_6) Factor	**3.54**	**.87**	**High**

Table 10 revealed that the respondent's overall level of agreement on collaboration-with-community factor of parent and family involvement in school were at high level. The average Mean was 3.54. The respondent's level of agreement was high with the second and fourth measures of collaboration with community factor, the rest measures were shown at neutral level.

Part 2B: The Student Academic Performance

In this part 2, the data for student academic performance (average percentage) for individual student were collected from existing data maintained by respective urban public and private primary schools.

Table 11 The Mean and S.D of Student Academic Performance

(Average Percentage N =408)

Student Academic Performance (Y)	Mean	S.D
Student academic Performance (Average Percentage)	76.29	12.76

Table 11 shows the overall average mean of student academic performance in urban primary schools of Bhutan. The table 11 indicated that the mean of student academic performance at 76.29% and Standard Deviation at 12.76. The data on student academic performance (average percentage score) were recorded and collected from respective schools.

Part 3: Multiple Relationships between Six Factors of Parent and Family Involvement in School and Student Academic Performance in Urban Primary Schools of Bhutan.

This part consists of the result of correlation coefficient and multiple correlations between six factors of parent and family involvement in school and student academic performance in urban primary schools of Bhutan.

Table 12 The Pearson Product Moment Correlation Coefficient between Six
Factors of Parent and Family involvement in school and Student
Academic Performance (N=408)

	X_1	X_2	X_3	X_4	X_5	X_6	Y
X_1	1	.519**	.279**	.603**	.400**	.229**	.164**
X_2		1	.431**	.416**	.450**	.386**	.198**
X_3			1	.351**	.306**	.604**	.031
X_4				1	.473**	.344**	.213**
X_5					1	.440**	.125*
X_6						1	.112*
X_T							185**
Y							1

** Correlation is significant at the 0.01 level

*Correlation is significant at the 0.05 level

Table 12 revealed that 5 factors of parent and family involvement in school (parenting (X1), communication (X_2), learning at home (X_4), decision making (X_5) and collaboration with community (X_6) had a little positive correlation with student academic performance (The Pearson r=.185 with p≤0.01 and 0.05). The Pearson r ranks from the highest to the lowest as follows: learning at home (X_4), communication (X_2), and parenting (X_1), r=.213, r=.198, and r=.164, respectively, all of which p<.01; decision-making (X_5), and collaboration with community (X_6), (r=.125 and r= .112, both of which p<.05. Only one predictive variable, volunteering (X_3), was not significantly correlated with student academic performance.

Table 13 Multi Collinearity Analysis of Predictors for Student Academic Performance as Criterion Variable (N=408)

Predictors	Tolerances	VIF
Parenting (X_1)	.542	1.844
Communication (X_2)	.597	1.676
Volunteer (X_3)	.578	1.731
Learning at Home (X_4)	.550	1.817
Decision making (X_5)	.639	1.564
Collaboration with Community (X_6)	.555	1.802

After the analysis of Pearson correlation between predictive variables and criterion variable, the analysis of multi collinearity of predictive variables for student academic performance as criterion variable was carried out to see whether the factors can fit into the regression equation. The result in table 13 showed that the VIF of all the predictive variables were less than 10 and tolerance near to 1, which means that there was no problem of multi collinearity among the predictive factors and criterion variable. Considering the criteria set, the researcher followed the next step of data analysis, that was finding of multiple correlation by enter method of multiple regression analysis.

Table 14 Analysis of Variance in Enter Method of Multiple Regression Analysis using Student Academic Performance as Criterion Variable (N=408)

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Regression	4828.702	6	804.784	5.251	.000[a]
Residual	61454.818	401	153.254		
Total	66283.520	407			

a. Predictors: (Constant), Community collaboration, Parenting, Decision making, Communication, Volunteer, Learning at Home

b. Dependent Variable: Student Academic Performance

The statistics shown in table 14 to 15 revealed that the analysis of multiple regression by enter method produced F=5.251 at the .01 level of significance. That means the predictive variables, factors of parent and family involvement, was significantly related with student academic performance. Thus, multiple correlation coefficients, and regression coefficients of the predictive variables were taken into account both in unstandardized scores and standardized scores to construct predictive equation for student academic performance. The results appear on Table 15.

Table 15 Multiple Correlation Coefficients between Predictive Variables and Criterion Variable by Enter Method of Multiple Regression Analysis (N=408)

	Predictors	b	Std. Error	β	t	Sig
1	(Constant)	51.428	6.145		8.370	.000
	Parenting (X_1)	.10	1.807	.004	.056	.955
	Communication (X_2)	3.01	1.141	.16	2.642	.009*
	Volunteer (X_3)	-2.36	1.008	-.15	-2.342	.020*
	Learning at Home (X_4)	3.91	1.426	.18	2.741	.006*
	Decision making (X_5)	-.47	1.020	-.03	-.458	.647
	Collaboration with community (X_6)	1.29	.950	.09	1.360	.175

R: .270 R^2=.073 Adjusted R^2=0.59 F=5.251* SE=12.379

Criterion Variable: student academic performance

The result from enter- method multiple regression analysis in table 15 revealed the predictive regression equation with the six factors of parent and family involvement in school; parenting, communication, volunteering, learning at home, decision making and collaboration with community. The regression equation revealed that three factors were found significant with regression coefficients; learning at home (b=.3.91, $p \leq .05$), communication (b=3.01, $p \leq .05$) and volunteering (b= -2.36, $p \leq .05$). Learning at home and communication were found statistically significant but negative relationship was found with volunteering factor and student academic performance.

The multiple regression enter method analysis produced multiple correlation R=.270 and R^2=.073, with F=5.251 (Sig. at the .01 level). That means 7% of the variation in student academic performance can be explained by six factors of the parent and family involvement with standard error of estimation =12.379.

Predictive equation for student academic performance using unstandardized score and standardized scores can be written as;

Unstandardized score

$Y' = 51.428 + 0.10(X_1) + 3.01(X_2) - 2.36(X_3) + 3.91(X_4) - 0.47(X_5) + 1.29(X_6)$

Standardized Score

$Z' = 0.004(Z_1) + 0.16(Z_2) - .15(Z_3) + .18(Z_4) - .03(Z_5) + .09(Z_6)$

From the predictive equation, it can be concluded that communication (X_2) and learning at home (X_4) exert positive effect on student academic performance, while volunteering (X_2) and decision making (X_5) exert negative effect on student academic performance.

Part 4: Constructing Best Predictive Equation to Predict Student Academic Performance from Parent and Family Involvement Variables

This part is intended to construct the best predictive equation for predicting student academic performance n school from the six factors of parent and family involvement in school.

Table 16 Analysis of Variance in Stepwise Method of Multiple Regression Analysis using Student Academic Performance as criterion (N=408)

Source of Variation	Sum of Squares	df	Mean Square	F
Regression	3973.669	2	1986.835	12.914**
Residual	62309.850	405	153.851	
Total	66283.520	407		

** Significance level 0.01

Predictors: (constant), Learning at home, Communication

Independent variable: Student academic performance

The stepwise method in multiple regression analysis in table 16 produced F=12.914 at the .01 level of significance. That means the predictive variables, factors of parent and family involvement, was significantly related to student academic performance. Thus, multiple correlation coefficients, and regression coefficients of the predictive variables were taken into account both in unstandardized scores and standardized scores, to construct the best predictive equation for student academic performance. The results appear on Table 17-18.

Table 17 Multiple Correlation Coefficient and Multiple Coefficient of Determinations between significant Predictive Variables and Student Academic Performance using Stepwise Method in Multiple Regression Analysis (N=408)

Predictors	R	R^2	F
X_4.	$.213^a$	.046	19.371**
$X_4 X_2$	$.245^b$	.060	12.914**

**Significance level 0.01

Table 17 shows the results of multiple regression, using stepwise method to choose the best predictive variables for student academic Performance. By stepwise method, the best predictive variable first selected was learning at home (X_4), and the analysis produced multiple correlation coefficient (R) =.213, multiple coefficient of determinations (R^2) =0.46, and F=19.371 (sig. at the .01 level). When the second best predictive variable, Communication (X_2), was selected and entered into the equation. It was found the R^2 (.060) changed with F=12.914 at the .01 level of significance, but the rest of the predictive variables were excluded from the predictive equation. It can be concluded that the best predictive variables for student academic performance (Y) were learning at home factor (X_4) and Communication factor (X_2)

Regression weights of the predictive variables for student academic performance were computed and tested for the significance to construct the best predictive equation; the results shown in Table 18.

Table 18 Regression Coefficient of Significant Predictors for Student Academic Performance using Stepwise Method in Regression Analysis (N=408)

Predictors	b	β	SE	t
X_4	3.49	.16	1.116	2.991**
X_2	2.42	.13	.971	2.492**
a = 51.332 R=.245 R^2=.060 F=12.914 SE=12.403				

**Significance level 0.01

From table 18, it was found that the regression coefficients of predictive variables in unstandardized scores of learning at home factor (X_4) and communication factor (X_2) were 3.49 and 2.42. The regression coefficients in standardized scores were 0.16 and 0.13, which mean the two factors of parent and family involvement exert positive effects on student academic performance.

The multiple regression analysis produced multiple correlation (R)= .245, and multiple coefficient of determinations (R^2)=.060, with F=12.914 (Sig. at the .01 level), That means 6% of the variation in student academic performance can be explained by learning at home factor and communication factor with Standard Error of Estimation = 12.403

Predictive Regression Equation for student academic performance can be written as follows;

Ustandardized score

$Y' = 51.332 + 3.49 (X_4) + 2.42(X_2)$

Standardized score

$Z' = 0.16(Z_4) + 0.13(Z_2)$