APPENDIX 8.8

CORRELATION OUTPUT FOR SDQ II

CORRELATIONS /VARIABLES=Bengali English /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.

Correlations

Notes

	Output Created	30-Aug-2011 00:35:37
	Comments	
Input	Data	C:\Users\Monira\Desktop\Data file very final\ASDQ correlation.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	25
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
	Syntax	CORRELATIONS /VARIABLES=Bengali English /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	0:00:00.016
	Elapsed Time	0:00:00.016

Correlations

		Bengali	English
Bengali	Pearson Correlation	1	.791**
	Sig. (2-tailed)		.000
	N	25	25
English	Pearson Correlation	.791**	1
	Sig. (2-tailed)	.000	
	N	25	25

**. Correlation is significant at the 0.01 level (2-tailed).

APPENDIX 8.9

List of items that have missing cases:

Variables	Missing cases (%)
Background factors: • Age	 3 (0.1)
Other educational materials: • Use reference book • Encyclopaedia • Dictionary • Magazine	 103 (4.2) 110 (4.5) 59 (2.4) 37 (1.5)
Learning opportunity: • Access to computer • Subjects study	 51 (2.1) 57 (2.3)
Parental encouragement: • Extracurricular activity	 49 (2.0)
Family constellation*: • Family type (1) • Number of siblings (2) • Birth order (3) • Family structure	 725 (29.4) 708 (28.8) 728 (29.6) 75 (3.0)
Teacher characteristics: • In-service training • Job rank	 6 (4.9) 1 (0.8)
Classroom context: • Class size	 2 (1.6)
Head teacher characteristics: • Age • Educational training • Teaching experience • Experience as head	 1 (2.2) 1 (2.2) 1 (2.2) 1 (2.2)
School context: • Number of trained teachers	 1 (2.2)

Note: *(1) Missing N = 20 (1.1%); Not respond (N) = 705 (28.3%).
(2) Missing N = 4 (0.2%); No respond (N) = 704 (28.6%).
(3) Missing N = 26 (1.5%); No respond (N) = 702 (28.1%).

APPENDIX 8.10

Website for SSC Result: www.gov,bd,com or http://www.educationboardresults.gov.bd/.

Additional Information: 1) Exam Result Archive; 2) Board: Dhaka; 3) Exam type: SSC/Dakhil; 4) Year: 2009 & 5) SSC ExamRoll No

School Name: ST. JOSEPH HIGH SCHOOL

Police Station: Mohammadpur **School Code:** A-7
Head teacher's Name: Brother Jhon Rojario C.S.C
Tel: 9112917

SL No	Class Roll	Name	Result of class Nine (IX)		Group	SSC Rag. No	SSC Exam Roll No	Result of SSC	
			Mark	Grade				Mark	Grade
397	2	Md. Mahdi Salehin Feroz	5.00	A+	Science	952933	108100	5.00	A+
398	3	Prattay Deepta Kairy	5.00	A+	Science	952903	108114	5.00	A+
399	4	Md. Arif Istiaque Khan	5.00	A+	Science	952923	108105	5.00	A+
400	5	Syed Muntafir Rahman	4.88	A	Science	354857	108193	5.00	A+
401	6	Hisham Abdul Majeed	4.98	A	Science	952929	108102	5.00	A+
402	7	Rajat Ghosh	5.00	A+	Science	952927	108103	5.00	A+
403	8	Touhid Bin Anwar	4.89	A	Science	952884	108123	5.00	A+
404	9	Salman Amir	4.99	A	Science	952919	108107	5.00	A+
405	10	Amit Acharjee	4.88	A	Science	952913	108110	5.00	A+
406	11	Siam Rahman	4.78	A	Science	952921	108106	5.00	A+
407	12	Sakib Shadman	5.00	A+	Science	952901	108115	5.00	A+
408	14	Md. Mohaimenul Islam	5.00	A+	Science	952886	108122	5.00	A+
409	15	Rakib Hasan Ayon	4.88	A	Science	952899	108116	5.00	A+
410	17	Muntaseer Bunian	3.78	A-	Science	952897	108117	5.00	A+
411	18	Sadman Sakib	4.00	A	Science	952909	108112	5.00	A+
412	19	Tanveer Reza	4.25	A	Science	952917	108108	5.00	A+
413	20	Sanim Safuan Kabir	4.32	A	Science	952907	108154	5.00	A+
414	21	Nafis Zubair Khan	4.50	A	Science	952915	108109	5.00	A+
415	22	Charles Amit Mohonto	4.70	A	Science	952882	108124	5.00	A+
416	25	Taseen Tawsif Rahman	4.23	A	Science	952851	108140	5.00	A+
417	26	Naim-Ul-Hasan	4.00	A	Science	952888	108121	5.00	A+
418	27	Saleh Muhammed Mohiuddin Chowdhury	4.25	A	Science	952891	108120	5.00	A+
419	28	Nafees Maharuf Shafakat	4.42	A	Science	952828	108155	5.00	A+
420	29	Prince Suvro Biswas	3.75	A-	Science	952893	108119	5.00	A+
421	30	Md. Masud Sadeek	4.00	A	Science	952876	108127	5.00	A+
422	31	Kazi Injamamul Haque	3.21	B	Science	952831	108153	5.00	A+
423	32	Mir Samin Haque	4.00	A	Science	952833	108151	5.00	A+
424	33	Sifat Raihan Khan	4.21	A	Science	952834	108150	5.00	A+
425	34	Khandker Mushfiqul Islam	3.99	A	Science	952845	108143	5.00	A+
426	36	Faisal Mahmud	4.00	A	Science	952895	108118	5.00	A+
427	37	Tanzir Rahman Khan	3.25	B	Science	952855	108138	5.00	A+
428	39	Akif Matin	3.30	B	Science	952865	108133	5.00	A+
429	40	Sadman Rafi	4.00	A	Science	952857	108137	5.00	A+
430	42	Asif Mahmud	3.24	B	Science	952847	108142	5.00	A+
431	43	Ibrahim Redwan	4.00	A	Science	952867	108132	5.00	A+

432	44	S.M. Iqtidar Amin	3.42	B	Science	952843	108144	5.00	A+
433	45	Fazlul Karim Chowdhury	3.57	A-	Science	952872	108129	5.00	A+
434	46	Syed Ishtiaq Hossain	4.23	A	Science	952878	108126	5.00	A+
435	48	Md. Asif Jahan Shuvro	3.00	B	Science	952853	108139	5.00	A+
436	50	Elias Zihan Khan	3.42	B	Science	952859	108136	5.00	A+
437	51	Rory Richard Desai	4.50	A	Science	952861	108135	5.00	A+
438	52	Rafsan Jani Farooque	4.00	A	Science	952837	108147	5.00	A+
439	53	Musawer Ahmad Saqif	3.21	B	Science	952925	108104	5.00	A+
440	54	Md. Tasnim Rahman	4.00	A	Science	952863	108134	5.00	A+
441	55	Clinton Peter Gomes	4.00	A	Science	952836	108148	5.00	A+
442	56	Muhaimen Muhebb	3.00	B	Science	952849	108141	5.00	A+
443	57	Bareed Mohammad Nur	4.00	A	Science	952832	108152	5.00	A+
444	58	Arif Hasnat	4.00	A	Science	952841	108145	4.81	A
445	24	Rohan Sarker	3.20	B	Science	952931	108101	5.00	A+
446	41	Farhan Tanvir	3.00	B	Science	952869	108131	5.00	A+
447	47	Arafat Hossain	4.00	A	Science	952839	108146	5.00	A+
448	16	Nafi Aman	4.00	A	Science	952871	108130	5.00	A+
449	1	Arif Hassan Asraful Noor	5.00	A+	Com.	952816	412232	5.00	A+
450	2	Mopasha Samaddar	5.00	A+	Com.	952824	412224	5.00	A+
451	3	Noel Nicholas Rodrigues	5.00	A+	Com.	952805	412243	4.88	A
452	4	Ignatius Evans Gomes	5.00	A+	Com.	952827	412221	5.00	A+
453	5	Debbrota Sen	4.98	A	Com.	952825	412223	5.00	A+
454	6	Richard Subro Baroi	4.88	A	Com.	952823	412225	5.00	A+
455	7	Shawon Alfred Cruze	4.88	A	Com.	952822	412226	5.00	A+
456	8	Promit Pius Gomes	4.87	A	Com.	952819	412229	5.00	A+
457	9	Quazi Omar Iftekhar	4.56	A	Com.	952821	412227	4.81	A
458	10	Samin Ishtiaque	4.78	A	Com.	952820	412228	5.00	A+
459	11	Gabriel Biki Gomes	4.50	A	Com.	952826	412222	5.00	A+
460	12	Nafis Ahmed	4.00	A	Com.	952796	412247	5.00	A+
461	13	Nafiz Imtiaz Haque	3.87	A-	Com.	952811	412237	5.00	A+
462	14	Sabbir Ahmed	4.00	A	Com.	952808	412240	5.00	A+
463	21	George Nibir Gomes	3.30	B	Com.	952815	412233	5.00	A+
464	23	Md. Abdullah-Al-Nayem	3.67	A-	Com.	952813	412235	5.00	A+
465	24	Shouherdya Ahmed	2.65	C	Com.	952803	412245	5.00	A+
466	25	Norman proloy Sarkar	3.00	B	Com.	952806	412242	5.00	A+
467	26	Victor Jerry Rozario	3.00	B	Com.	952807	412241	4.81	A
468	27	Shomee Jonas Razario	2.57	C	Com.	952804	412244	5.00	A+

APPENDIX 8.11

Output of Descriptive Analysis

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data after viva fimnally used.sav

Statistics

		Students' age in month	study time	Study place	No of text book
N	Valid	2459	2462	2462	2462
	Missing	3	0	0	0
	Mean	182.8221	2.7067	2.0394	1.19
	Std. Deviation	11.62190	.82334	.63013	.495
	Range	98.10	3.00	2.00	3
	Minimum	156.00	1.00	1.00	1
	Maximum	254.10	4.00	3.00	4

study time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-2 hours	155	6.3	6.3	6.3
	3-4 hours	836	34.0	34.0	40.3
	5-6 hours	1047	42.5	42.5	82.8
	7-8 hours or more	424	17.2	17.2	100.0
	Total	2462	100.0	100.0	

Study place

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No study place	442	18.0	18.0	18.0
	Share with siblings	1481	60.2	60.2	78.1
	Separate study place	539	21.9	21.9	100.0
	Total	2462	100.0	100.0	

No of text book

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	All text books	2092	85.0	85.0	85.0
	Almost all text books	290	11.8	11.8	96.8
	Few books	64	2.6	2.6	99.4
	None	16	.6	.6	100.0
	Total	2462	100.0	100.0	

Statistics

		teacher/coaching note	guide/note book	Note collected from others'	Note prepared by the students'
N	Valid	2462	2462	2462	2462
	Missing	0	0	0	0
	Mean	.6799	.7539	.4094	.4435
	Std. Deviation	.46660	.43085	.49183	.49690
	Range	1.00	1.00	1.00	1.00
	Minimum	.00	.00	.00	.00
	Maximum	1.00	1.00	1.00	1.00

Statistics

		Use reference book	Encyclopaedia	Dictionary	Magazine
N	Valid	2359	2352	2403	2425
	Missing	103	110	59	37
	Mean	.2861	.2364	.9484	.1233
	Std. Deviation	.45205	.42496	.22127	.32885
	Range	1.00	1.00	1.00	1.00
	Minimum	.00	.00	.00	.00
	Maximum	1.00	1.00	1.00	1.00

Frequency Table

teacher/coaching note

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	788	32.0	32.0	32.0
	Yes	1674	68.0	68.0	100.0
	Total	2462	100.0	100.0	

guide/note book

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	606	24.6	24.6	24.6
	Yes	1856	75.4	75.4	100.0
	Total	2462	100.0	100.0	

Note collected from others'

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1454	59.1	59.1	59.1
	Yes	1008	40.9	40.9	100.0
	Total	2462	100.0	100.0	

Note prepared by the students'

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1370	55.6	55.6	55.6
	Yes	1092	44.4	44.4	100.0
	Total	2462	100.0	100.0	

Use reference book

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1684	68.4	71.4	71.4
	Yes	675	27.4	28.6	100.0
	Total	2359	95.8	100.0	
Missing	System	103	4.2		
	Total	2462	100.0		

Encyclopaedia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1796	72.9	76.4	76.4
	Yes	556	22.6	23.6	100.0
	Total	2352	95.5	100.0	
Missing	System	110	4.5		
	Total	2462	100.0		

Dictionary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	124	5.0	5.2	5.2
	Yes	2279	92.6	94.8	100.0
	Total	2403	97.6	100.0	
Missing	System	59	2.4		
	Total	2462	100.0		

Magazine

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2126	86.4	87.7	87.7
	Yes	299	12.1	12.3	100.0
	Total	2425	98.5	100.0	
Missing	System	37	1.5		
	Total	2462	100.0		

Statistics

		Access to computer	private tutoring	subject study at coaching center or private tutors
N	Valid	2411	2462	2405
	Missing	51	0	57
	Mean	2.2522	2.3022	2.7713
	Std. Deviation	.93273	.81960	1.05982
	Range	2.00	3.00	3.00

	Minimum	1.00	1.00	1.00
	Maximum	3.00	4.00	4.00

Frequency Table

Access to computer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Computer	821	33.3	34.1	34.1
	Computer with internet	161	6.5	6.7	40.7
	None	1429	58.0	59.3	100.0
	Total	2411	97.9	100.0	
Missing	System	51	2.1		
	Total	2462	100.0		

private tutoring

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	home private tutor	509	20.7	20.7	20.7
	coaching center	758	30.8	30.8	51.5
	both	1137	46.2	46.2	97.6
	none of the facility	58	2.4	2.4	100.0
	Total	2462	100.0	100.0	

subject study at coaching center or private tutors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	all or some core subjects	523	21.2	21.7	21.7
	all or some group subjects	119	4.8	4.9	26.7
	some core and gropu subjects	1148	46.6	47.7	74.4
	all subjects	615	25.0	25.6	100.0
	Total	2405	97.7	100.0	
Missing	System	57	2.3		
	Total	2462	100.0		

Statistics

		subscribe news paper	Watching TV	Family structure recode	Extra curricular activities
N	Valid	2462	2462	2387	2413
	Missing	0	0	75	49
	Mean	1.37	2.4448	2.4826	.6515
	Std. Deviation	.483	.82966	.54934	.47660
	Range	1	3.00	2.00	1.00
	Minimum	1	1.00	1.00	.00
	Maximum	2	4.00	3.00	1.00

Frequency Table

subscribe news paper

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1550	63.0	63.0	63.0
	No	912	37.0	37.0	100.0
	Total	2462	100.0	100.0	

Watching TV

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not watch	344	14.0	14.0	14.0
	1 hour or less	878	35.7	35.7	49.6
	2-3 hours	1041	42.3	42.3	91.9
	4 hours or more	199	8.1	8.1	100.0
	Total	2462	100.0	100.0	

Family structure recode

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	lesezfair	62	2.5	2.6	2.6
	Democratic	1111	45.1	46.5	49.1
	Autocratic	1214	49.3	50.9	100.0
	Total	2387	97.0	100.0	
Missing	System	75	3.0		
	Total	2462	100.0		

Extra curricular activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	841	34.2	34.9	34.9
	Yes	1572	63.9	65.1	100.0
	Total	2413	98.0	100.0	
Missing	System	49	2.0		
	Total	2462	100.0		

Statistics

Family type

N	Valid	1737
	Missing	725
	Mean	1.9747
	Std. Deviation	.44052
	Range	2.00
	Minimum	1.00
	Maximum	3.00

Family type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	joint family	191	7.8	11.0	11.0
	nuclear family	1399	56.8	80.5	91.5
	single (either father or mother)	147	6.0	8.5	100.0
	Total	1737	70.6	100.0	
Missing	System	725	29.4		
	Total	2462	100.0		

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Total siblings	1754	9.00	1.00	10.00	3.0428	1.50750
Birth order	1734	9.00	1.00	10.00	2.0473	1.32579
Valid N (listwise)	1734					

Statistics

School category

N	Valid	2462
	Missing	0

School category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Cat-A	1077	43.7	43.7	43.7
	Cat-B	845	34.3	34.3	78.1
	cat-C	540	21.9	21.9	100.0
	Total	2462	100.0	100.0	

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Only for teacher.sav

Statistics

Gender

N	Valid	122
	Missing	0

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	83	68.0	68.0	68.0
	Female	39	32.0	32.0	100.0
	Total	122	100.0	100.0	

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Age in year	122	35.75	28.50	64.25	44.6011	9.04356
Valid N (listwise)	122					

Statistics

		qualification	Teaching experience	Job Rank	Training on pedagogy	In-service training
N	Valid	122	122	121	122	116
	Missing	0	0	1	0	6

Frequency Table

Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BA/BSC/BCOM	34	27.9	27.9	27.9
	MA/MSC/MCOM	82	67.2	67.2	95.1
	Others	6	4.9	4.9	100.0
	Total	122	100.0	100.0	

Job Rank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Assistant teacher	49	40.2	40.5	40.5
	Senior teacher	70	57.4	57.9	98.3
	Junior teacher	2	1.6	1.7	100.0
	Total	121	99.2	100.0	
Missing	System	1	.8		
	Total	122	100.0		

Training on pedagogy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Med	37	30.3	30.3	30.3
	Bed	66	54.1	54.1	84.4
	C in ed	1	.8	.8	85.2
	None	18	14.8	14.8	100.0
	Total	122	100.0	100.0	

In-service training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	88	72.1	75.9	75.9
	No	28	23.0	24.1	100.0
	Total	116	95.1	100.0	
Missing	System	6	4.9		
	Total	122	100.0		

Statistics

Teacher salary

N	Valid	122
	Missing	0

Teacher salary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5,000 or less	14	11.5	11.5	11.5
	5,001-10,000	65	53.3	53.3	64.8
	10,001-15,000	30	24.6	24.6	89.3
	15,001 or more	13	10.7	10.7	100.0
	Total	122	100.0	100.0	

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Teaching experience	122	43.00	1.00	44.00	16.9836	9.68426
Valid N (listwise)	122					

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Lesson plan	122	6.00	.00	6.00	1.8279	1.53576
Valid N (listwise)	122					

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Time spend on home work	122	2.00	1.00	3.00	1.6230	.64703
Valid N (listwise)	122					

Statistics

Assign homework

N	Valid	122
	Missing	0

Assign homework

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Everyday	35	28.7	28.7	28.7
	Frequently	61	50.0	50.0	78.7
	Sometimes	26	21.3	21.3	100.0
	Total	122	100.0	100.0	

Statistics

Total number of student

N	Valid	120
	Missing	2

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Total number of student	120	60.00	20.00	80.00	54.1500	12.68006
Valid N (listwise)	120					

[DataSet3] C:\Users\Monira\Desktop\Finally used data\Head final 45.sav

Statistics

		Gender	Age
N	Valid	45	44
	Missing	0	1
	Mean	1.33	52.5316
	Std. Deviation	.477	6.04378
	Range	1	23.39
	Minimum	1	40.61
	Maximum	2	64.00

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	30	66.7	66.7	66.7
	Female	15	33.3	33.3	100.0
	Total	45	100.0	100.0	

Statistics

		qualification	Training on pedagogy
N	Valid	45	44
	Missing	0	1
	Mean	3.80	1.8636
	Std. Deviation	.505	.90453
	Range	2	3.00
	Minimum	3	1.00
	Maximum	5	4.00

Frequency Table

qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BA/BSC/BCOM	11	24.4	24.4	24.4
	MA/MSC/MCOM	32	71.1	71.1	95.6
	Others	2	4.4	4.4	100.0
	Total	45	100.0	100.0	

Training on pedagogy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MEd	16	35.6	36.4	36.4
	BEd	23	51.1	52.3	88.6
	None	5	11.1	11.4	100.0
	Total	44	97.8	100.0	
Missing	System	1	2.2		
	Total	45	100.0		

Statistics

		teaching experience	Experience as head	Total no of teacher	Total no of student
N	Valid	44	44	45	45
	Missing	1	1	0	0
	Mean	26.07	12.16	49.76	1580.04
	Std. Deviation	7.602	8.195	28.486	1023.319
	Range	28	27	151	4200
	Minimum	10	1	10	327
	Maximum	38	28	161	4527

Statistics

		student ratio	No of trained teacher
N	Valid	45	44
	Missing	0	1
	Mean	31.20	38.30
	Std. Deviation	7.491	24.823
	Range	30	151
	Minimum	20	4
	Maximum	50	155

Statistics
Frequency Table

		Laboratory facility	PTA meeting	No of Books at Library
N	Valid	45	45	45
	Missing	0	0	0
	Mean	2.3333	2.33	2515.18
	Std. Deviation	.63960	.707	4178.837
	Range	2.00	2	26000
	Minimum	1.00	1	0
	Maximum	3.00	3	26000

Laboratory facility

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No laboratory	4	8.9	8.9	8.9
	Yes, but not good	22	48.9	48.9	57.8
	Yes, with modern ad well equipement	19	42.2	42.2	100.0
	Total	45	100.0	100.0	

PTA meeting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	once in every month	6	13.3	13.3	13.3
	Once/twice in every six month	18	40.0	40.0	53.3
	Once/twice in a year	21	46.7	46.7	100.0
	Total	45	100.0	100.0	

Statistics

School category

N	Valid	45
	Missing	0
	Mean	2.0000
	Std. Deviation	.82572
	Range	2.00

	Minimum	1.00
	Maximum	3.00

School category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High performing	15	33.3	33.3	33.3
	Medium performing	15	33.3	33.3	66.7
	Low performing	15	33.3	33.3	100.0
	Total	45	100.0	100.0	

APPENDIX 8.12

Output of Chi-square

[DataSet1] C:\Users\Monira\Desktop\Student data after viva fimnally used.sav

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
19.0866	17.875	4.22790	5

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	1732	70.3
	Excluded[a]	730	29.7
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.795	4

Item Statistics

	Mean	Std. Deviation	N
father education	4.8736	1.49006	1732
Mother education	3.9642	1.69237	1732
Household income	2.7102	1.14225	1732
Father occupation	3.8430	1.14144	1732

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
father education	10.5173	9.529	.794	.639
Mother education	11.4267	8.795	.737	.677
Household income	12.6807	13.454	.513	.788
Father occupation	11.5479	14.029	.436	.817

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15.3909	19.057	4.36548	4

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
SES category * School category	1732	70.3%	730	29.7%	2462	100.0%
SES category * Access to computer	1697	68.9%	765	31.1%	2462	100.0%
SES category * private tutoring	1732	70.3%	730	29.7%	2462	100.0%

SES category * School category

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	539.089[a]	8	.000
Likelihood Ratio	633.550	8	.000
Linear-by-Linear Association	458.619	1	.000
N of Valid Cases	1732		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.07.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.558	.000
	Cramer's V	.394	.000
	Contingency Coefficient	.487	.000
	N of Valid Cases	1732	

SES category * Access to computer

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	198.353[a]	8	.000
Likelihood Ratio	206.799	8	.000
Linear-by-Linear Association	158.328	1	.000
N of Valid Cases	1697		

a. 1 cells (6.7%) have expected count less than 5. The minimum expected count is 3.53.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.342	.000
	Cramer's V	.242	.000
	Contingency Coefficient	.324	.000
	N of Valid Cases	1697	

SES category * private tutoring

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.911[a]	12	.008
Likelihood Ratio	26.270	12	.010
Linear-by-Linear Association	5.610	1	.018
N of Valid Cases	1732		

a. 2 cells (10.0%) have expected count less than 5. The minimum expected count is 1.30.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.125	.008
	Cramer's V	.072	.008
	Contingency Coefficient	.124	.008
	N of Valid Cases	1732	

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
SES category * School category	1732	97.6%	43	2.4%	1775	100.0%
SES category * Access to computer	1697	95.6%	78	4.4%	1775	100.0%
SES category * private tutoring	1732	97.6%	43	2.4%	1775	100.0%

SES category * School category

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	539.089[a]	8	.000
Likelihood Ratio	633.550	8	.000
Linear-by-Linear Association	458.619	1	.000
N of Valid Cases	1732		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.07.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.558	.000
	Cramer's V	.394	.000
	N of Valid Cases	1732	

SES category * Access to computer

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	198.353[a]	8	.000
Likelihood Ratio	206.799	8	.000
Linear-by-Linear Association	158.328	1	.000
N of Valid Cases	1697		

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	198.353[a]	8	.000
Likelihood Ratio	206.799	8	.000
Linear-by-Linear Association	158.328	1	.000
N of Valid Cases	1697		

a. 1 cells (6.7%) have expected count less than 5. The minimum expected count is 3.53.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.342	.000
	Cramer's V	.242	.000
	N of Valid Cases	1697	

SES category * private tutoring

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.911[a]	12	.008
Likelihood Ratio	26.270	12	.010
Linear-by-Linear Association	5.610	1	.018
N of Valid Cases	1732		

a. 2 cells (10.0%) have expected count less than 5. The minimum expected count is 1.30.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.125	.008
	Cramer's V	.072	.008
	N of Valid Cases	1732	

APPENDIX 8.13

Output of Factor Analysis

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data used for final Factor analysis.sav

Scale: ALL VARIABLES

Reliability Statistics

Cronbach's Alpha	N of Items
.805	10

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data used for final Factor analysis.sav

Scale: ALL VARIABLE

Case Processing Summary

		N	%
Cases	Valid	2462	100.0
	Excluded[a]	0	.0
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.710	9

Item Statistics

	Mean	Std. Deviation	N
teachers' treat me fair	1.75	.891	2462
Praise me	1.78	.999	2462
Do mu homework	1.94	1.068	2462
understand my lesson	1.88	1.034	2462
What I say	2.22	1.137	2462
encourage me	1.72	1.011	2462
homework useful	1.98	1.116	2462
Feedback me	1.99	1.058	2462
Teaching boring	3.63	1.213	2462

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
teachers' treat me fair	17.14	22.581	.491	.669
Praise me	17.11	21.968	.487	.667
Do mu homework	16.95	21.160	.532	.656
understand my lesson	17.01	20.716	.610	.642
What I say	16.67	20.800	.524	.656
encourage me	17.17	21.228	.567	.651
homework useful	16.91	21.815	.429	.676
Feedback me	16.90	21.249	.529	.657
Teaching boring	15.26	31.338	-.389	.826

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
18.89	27.529	5.247	9

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data used for final Factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	2462	100.0
	Excluded[a]	0	.0
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.826	8

Item Statistics

	Mean	Std. Deviation	N
teachers' treat me fair	1.75	.891	2462
Praise me	1.78	.999	2462
Do mu homework	1.94	1.068	2462
understand my lesson	1.88	1.034	2462

What I say	2.22	1.137	2462
encourage me	1.72	1.011	2462
homework useful	1.98	1.116	2462
Feedback me	1.99	1.058	2462

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
teachers' treat me fair	13.51	25.819	.522	.810
Praise me	13.48	25.196	.513	.811
Do mu homework	13.32	24.305	.559	.805
understand my lesson	13.38	23.728	.649	.792
What I say	13.04	24.006	.542	.808
encourage me	13.54	24.368	.596	.800
homework useful	13.28	24.908	.466	.818
Feedback me	13.27	24.382	.559	.805

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15.26	31.338	5.598	8

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data used for final Factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	1697	68.9
	Excluded[a]	765	31.1
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.297	5

Item Statistics

	Mean	Std. Deviation	N
father education	4.8821	1.48388	1697
Mother education	3.9747	1.68545	1697
Father occupation	2.1520	1.13913	1697
Mother occupation	3.6700	.87254	1697
Household income	2.7118	1.14051	1697

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
father education	12.5085	5.605	.458	-.142[a]
Mother education	13.4160	4.734	.470	-.233[a]
Father occupation	15.2387	13.152	-.415	.613
Mother occupation	13.7207	11.546	-.216	.451
Household income	14.6788	6.440	.567	-.137[a]

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
17.3907	11.025	3.32035	5

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data used for final Factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	1732	70.3
	Excluded[a]	730	29.7
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.795	4

Item Statistics

	Mean	Std. Deviation	N
father education	4.8736	1.49006	1732
Mother education	3.9642	1.69237	1732
Household income	2.7102	1.14225	1732
Father occupation	3.8430	1.14144	1732

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
father education	10.5173	9.529	.794	.639
Mother education	11.4267	8.795	.737	.677
Household income	12.6807	13.454	.513	.788
Father occupation	11.5479	14.029	.436	.817

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15.3909	19.057	4.36548	4

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data after viva fimnally used.sav

Descriptive Statistics

	Mean	Std. Deviation	N
SSC exam GPA	4.0721	1.39172	2390
Total SDQ scale	52.5321	9.06420	2462
Total SES scale	15.3909	4.36548	1732
Total Teacher interaction scale	15.2600	5.59806	2462

Correlations

		SSC exam GPA	Total SDQ scale
SSC exam GPA	Pearson Correlation	1	.457**

	Sig. (2-tailed)		.000
	N	2390	2390
Total SDQ scale	Pearson Correlation	.457**	1
	Sig. (2-tailed)	.000	
	N	2390	2462
Total SES scale	Pearson Correlation	.551**	.381**
	Sig. (2-tailed)	.000	.000
	N	1686	1732
Total Teacher interaction scale	Pearson Correlation	.098**	-.078**
	Sig. (2-tailed)	.000	.000
	N	2390	2462

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Total SES scale	Total Teacher interaction scale
SSC exam GPA	Pearson Correlation	.551**	.098**
	Sig. (2-tailed)	.000	.000
	N	1686	2390
Total SDQ scale	Pearson Correlation	.381**	-.078**
	Sig. (2-tailed)	.000	.000
	N	1732	2462
Total SES scale	Pearson Correlation	1	.064**
	Sig. (2-tailed)		.008
	N	1732	1732
Total Teacher interaction scale	Pearson Correlation	.064**	1
	Sig. (2-tailed)	.008	
	N	1732	2462

**. Correlation is significant at the 0.01 level (2-tailed).

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data after viva fimnally used.sav

Case Processing Summary

	Cases

	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
SSC exam GPA * Total SDQ scale	2390	97.1%	72	2.9%	2462	100.0%

Report

SSC exam GPA

Total SDQ scale	Mean	N	Std. Deviation
20.00	2.3800	1	.
22.00	3.6250	2	.09192
24.00	3.8800	1	.
25.00	3.8150	2	.53033
26.00	2.8800	1	.
27.00	2.9400	2	.08485
28.00	3.6250	2	.61518
29.00	2.3600	4	1.61189
30.00	1.1888	8	1.64648
31.00	2.6240	5	1.55285
32.00	2.3629	14	1.87012
33.00	1.4900	12	1.70721
34.00	2.1521	19	1.98096
35.00	2.4215	26	1.84095
36.00	2.1800	29	1.94905
37.00	2.5225	20	1.98851
38.00	2.3163	19	1.85833
39.00	3.2761	28	1.65529
40.00	3.3665	26	1.61794
41.00	3.5217	30	1.49324
42.00	3.5585	39	1.36104
43.00	3.1605	59	1.79819
44.00	3.6235	55	1.26744
45.00	3.7665	72	1.39023

46.00	3.6146	80	1.59140
47.00	3.5159	91	1.69940
48.00	3.5836	107	1.57772
49.00	3.8943	105	1.33751
50.00	4.0554	117	1.15989
51.00	3.9778	95	1.55635
52.00	4.2778	101	1.28894
53.00	4.2800	95	1.16904
54.00	4.4038	100	.79157
55.00	4.3270	107	1.10044
56.00	4.5688	88	.70286
57.00	4.4371	94	1.09264
58.00	4.5809	95	.84064
59.00	4.6316	91	.69519
60.00	4.5177	77	1.02501
61.00	4.6209	80	.85036
62.00	4.6390	59	.79145
63.00	4.7802	57	.42219
64.00	4.6769	45	1.04078
65.00	4.8279	42	.38039
66.00	4.7971	42	.44082
67.00	4.9131	35	.18346
68.00	4.8552	31	.49700
69.00	4.9875	20	.04387
70.00	4.9583	12	.08601
71.00	4.9471	14	.10284
72.00	4.9615	13	.09703
73.00	4.9167	6	.13456
74.00	4.9775	8	.04464
75.00	5.0000	1	.
76.00	5.0000	3	.00000
77.00	5.0000	2	.00000
79.00	5.0000	1	.
Total	4.0721	2390	1.39172

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data after viva fimnally used.sav

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
SSC exam GPA * Total SES scale	1686	68.5%	776	31.5%	2462	100.0%
SSC exam GPA * Total Teacher interaction scale	2390	97.1%	72	2.9%	2462	100.0%

SSC exam GPA * Total SES scale

SSC exam GPA

Total SES scale	Mean	N	Std. Deviation
4.00	3.3800	2	.70711
5.00	2.7633	48	1.77499
6.00	2.0671	34	1.80842
7.00	2.4508	36	1.70959
8.00	2.6744	50	1.66339
9.00	2.6825	56	1.92877
10.00	2.9696	49	1.62684
11.00	3.6986	43	1.17309
12.00	3.4932	62	1.44204
13.00	3.9935	89	1.23011
14.00	3.6616	107	1.58353
15.00	4.1708	125	1.11476
16.00	4.2063	134	1.08992
17.00	4.2725	172	1.22155
18.00	4.6030	184	.69569
19.00	4.8109	190	.36158
20.00	4.8695	176	.32783
21.00	4.9444	129	.18702
Total	4.1079	1686	1.35915

SSC exam GPA * Total Teacher interaction scale

SSC exam GPA

Total Teacher interaction scale	Mean	N	Std. Deviation
8.00	3.9470	206	1.50746
9.00	3.9088	132	1.66342
10.00	3.9306	154	1.51181
11.00	3.9877	176	1.44986
12.00	4.0242	220	1.48133
13.00	4.0960	189	1.36517
14.00	4.1479	175	1.19195
15.00	3.9771	168	1.59717
16.00	3.9361	165	1.42680
17.00	4.0132	115	1.37029
18.00	4.1092	102	1.43587
19.00	4.1007	98	1.32778
20.00	4.3247	66	.85002
21.00	4.3468	72	.98738
22.00	4.0666	70	1.31594
23.00	4.0540	50	1.40519
24.00	3.9886	65	1.33893
25.00	4.6141	37	.88585
26.00	4.4952	23	1.07221
27.00	4.2707	29	1.33646
28.00	4.4640	15	.74852
29.00	4.6786	14	.51067
30.00	4.8442	12	.36500
31.00	4.6122	9	.59793
32.00	4.5760	5	.94809
33.00	5.0000	9	.00000

34.00	4.9375	4	.08958
35.00	4.6520	5	.59335
36.00	4.5600	1	.
39.00	5.0000	2	.00000
40.00	5.0000	2	.00000
Total	4.0721	2390	1.39172

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	2462	100.0
	Excluded[a]	0	.0
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.800	.805	8

Item Statistics

	Mean	Std. Deviation	N
SDQ1	4.92	1.588	2462
SDQ2	5.47	1.631	2462
SDQ3	6.23	1.476	2462
SDQ4	5.30	1.303	2462
SDQ5	4.98	1.751	2462
SDQ6	4.86	1.787	2462
SDQ7	5.05	1.474	2462
SDQ8	5.23	1.263	2462

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum
Item Means	5.255	4.859	6.234	1.374	1.283
Inter-Item Correlations	.341	.187	.630	.444	3.379

Summary Item Statistics

	Variance	N of Items
Item Means	.199	8
Inter-Item Correlations	.009	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SDQ1	37.12	50.775	.453	.237	.786
SDQ2	36.57	46.929	.625	.402	.758
SDQ3	35.81	50.576	.514	.296	.777
SDQ4	36.74	50.945	.586	.457	.768
SDQ5	37.06	47.221	.551	.461	.771
SDQ6	37.18	49.712	.422	.215	.794
SDQ7	36.99	52.135	.434	.234	.788
SDQ8	36.81	52.032	.544	.332	.775

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
42.04	63.540	7.971	8

Correlations

		SSC exam GPA	Total SES scale
SSC exam GPA	Pearson Correlation	1	.551**
	Sig. (2-tailed)		.000
	N	2390	1686
Total SES scale	Pearson Correlation	.551**	1
	Sig. (2-tailed)	.000	

	N	1686	1732
SDQscale score	Pearson Correlation	.452**	.382**
	Sig. (2-tailed)	.000	.000
	N	2390	1732
Total Teacher interaction scale	Pearson Correlation	.098**	.064**
	Sig. (2-tailed)	.000	.008
	N	2390	1732

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		SDQscale score	Total Teacher interaction scale
SSC exam GPA	Pearson Correlation	.452**	.098**
	Sig. (2-tailed)	.000	.000
	N	2390	2390
Total SES scale	Pearson Correlation	.382**	.064**
	Sig. (2-tailed)	.000	.008
	N	1732	1732
SDQscale score	Pearson Correlation	1	-.069**
	Sig. (2-tailed)		.001
	N	2462	2462
Total Teacher interaction scale	Pearson Correlation	-.069**	1
	Sig. (2-tailed)	.001	
	N	2462	2462

**. Correlation is significant at the 0.01 level (2-tailed).

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sav

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.731
Bartlett's Test of Sphericity	Approx. Chi-Square	203.042
	df	36
	Sig.	.000

Communalities

	Initial	Extraction
Text book	1.000	.491
Note book	1.000	.449
Use chart	1.000	.462
Use picture	1.000	.631
Lecture method	1.000	.338
Group discussion	1.000	.397
Group project	1.000	.551
Memorization	1.000	.667
Reconde no talking	1.000	.407

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.883	32.028	
2	1.509	16.772	
3	.876	9.733	58.534
4	.816	9.068	67.601
5	.754	8.380	75.981
6	.666	7.404	83.385
7	.619	6.881	90.266
8	.534	5.937	96.203
9	.342	3.797	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Cumulative %	Total	% of Variance	Cumulative %	Total
1	32.028	2.883	32.028	32.028	2.541

2	48.800	1.509	16.772	48.800	2.125

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Component Matrix[a]

	Component	
	1	2
Text book	.635	.295
Note book	.653	.150
Use chart	-.367	.572
Use picture	-.508	.610
Lecture method	.569	.119
Group discussion	-.616	.134
Group project	-.623	.403
Memorization	.667	.471
Reconde no talking	.350	.533

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Pattern Matrix[a]

	Component	
	1	2
Text book	.685	-.063
Note book	.599	-.200
Use chart	.112	.694
Use picture	.031	.800
Lecture method	.513	-.185
Group discussion	-.376	.433
Group project	-.197	.675
Memorization	.829	.077
Reconde no talking	.631	.294

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Structure Matrix

	Component	
	1	2
Text book	.698	-.206
Note book	.641	-.325
Use chart	-.033	.671
Use picture	-.136	.793
Lecture method	.552	-.293
Group discussion	-.467	.512
Group project	-.339	.716
Memorization	.813	-.097
Reconde no talking	.570	.162

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2
1	1.000	-.210
2	-.210	1.000

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

	N	%

Cases	Valid	122	100.0
	Excluded[a]	0	.0
	Total	122	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.681	5

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	122	100.0
	Excluded[a]	0	.0
	Total	122	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.647	4

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sav

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.829
Bartlett's Test of Sphericity	Approx. Chi-Square	396.290
	df	91
	Sig.	.000

Communalities

	Initial	Extraction
Friendly	1.000	.293

Effective discussion	1.000	.577
Accept others' idea	1.000	.608
Inform school process	1.000	.439
Monitor teacher & student	1.000	.500
Ask teacher	1.000	.515
Guide line	1.000	.470
Keep pressure	1.000	.671
Pressure to be competent	1.000	.511
Up to date	1.000	.545
Act with consultation	1.000	.556
Teachers' capacity	1.000	.341
Do not like to change recode	1.000	.318
Engage teachers' in hard work	1.000	.679

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4.259	30.419	
2	1.530	10.932	
3	1.233	8.805	
4	.953	6.809	56.965
5	.875	6.251	63.216
6	.857	6.122	69.338
7	.703	5.022	74.359
8	.685	4.895	79.254
9	.618	4.413	83.667
10	.561	4.006	87.673
11	.466	3.328	91.001
12	.465	3.319	94.320
13	.445	3.179	97.499
14	.350	2.501	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Cumulative %	Total	% of Variance	Cumulative %	Total
1	30.419	4.259	30.419	30.419	3.651
2	41.351	1.530	10.932	41.351	1.609
3	50.155	1.233	8.805	50.155	3.045

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Component Matrix[a]

	Component		
	1	2	3
Friendly	.487	-.156	-.177
Effective discussion	.692	-.265	.168
Accept others' idea	.629	-.274	.370
Inform school process	.601	.153	-.234
Monitor teacher & student	.549	.120	-.429
Ask teacher	.591	-.219	.344
Guide line	.658	.170	-.087
Keep pressure	.327	.676	.326
Pressure to be competent	.486	.264	.452
Up to date	.695	-.158	-.192
Act with consultation	.629	.036	-.399
Teachers' capacity	.517	.121	-.242
Do not like to change recode	.442	.161	.311
Engage teachers' in hard work	-.131	.808	-.100

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
Friendly	.487	-.156	-.177
Effective discussion	.692	-.265	.168
Accept others' idea	.629	-.274	.370
Inform school process	.601	.153	-.234
Monitor teacher & student	.549	.120	-.429
Ask teacher	.591	-.219	.344
Guide line	.658	.170	-.087
Keep pressure	.327	.676	.326
Pressure to be competent	.486	.264	.452
Up to date	.695	-.158	-.192
Act with consultation	.629	.036	-.399
Teachers' capacity	.517	.121	-.242
Do not like to change recode	.442	.161	.311
Engage teachers' in hard work	-.131	.808	-.100

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Pattern Matrix[a]

	Component		
	1	2	3
Friendly	.467	-.194	.047
Effective discussion	.298	-.336	.477
Accept others' idea	.080	-.348	.646
Inform school process	.629	.105	.073
Monitor teacher & student	.758	.085	-.148
Ask teacher	.083	-.288	.606
Guide line	.544	.111	.247
Keep pressure	.021	.631	.537
Pressure to be competent	-.027	.200	.703

Up to date	.622	-.216	.133
Act with consultation	.777	-.007	-.086
Teachers' capacity	.576	.082	.021
Do not like to change recode	.053	.107	.534
Engage teachers' in hard work	.090	.822	-.093

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 16 iterations.

Structure Matrix

	Component		
	1	2	3
Friendly	.503	-.236	.250
Effective discussion	.526	-.378	.614
Accept others' idea	.380	-.377	.692
Inform school process	.651	.049	.333
Monitor teacher & student	.689	.026	.168
Ask teacher	.361	-.317	.651
Guide line	.638	.057	.471
Keep pressure	.193	.610	.523
Pressure to be competent	.251	.177	.685
Up to date	.696	-.273	.402
Act with consultation	.741	-.070	.240
Teachers' capacity	.578	.033	.260
Do not like to change recode	.268	.083	.552
Engage teachers' in hard work	-.018	.818	-.085

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2	3
1	1.000	-.084	.420
2	-.084	1.000	-.036
3	.420	-.036	1.000

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

RELIABILITY /VARIABLES=q8 q11 q12 q14 q17 q18 q19 /SCALE('ALL VARIABLES') ALL /MODEL=ALPHA.

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	122	100.0
	Excluded[a]	0	.0
	Total	122	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.772	7

RELIABILITY /VARIABLES=q15 q21 /SCALE('ALL VARIABLES') ALL /MODEL=ALPHA.
[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	122	100.0
	Excluded[a]	0	.0
	Total	122	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.493	2

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	122	100.0
	Excluded[a]	0	.0
	Total	122	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.695	5

Correlation Matrix

		Administrational behavior supportive or encouraging
Correlation	Facility for Professional Development	-.292
	Motivate to increase Teachers' skill	-.302
	Expectation from teachers'	-.400
	Link between teachers & admin	.459
	Teaching & learning facilities	.646
	Administrational help	.752
	Administrational behavior supportive or encouraging	1.000

Sig. (1-tailed)	Facility for Professional Development	.001
	Motivate to increase Teachers' skill	.000
	Expectation from teachers'	.000
	Link between teachers & admin	.000
	Teaching & learning facilities	.000
	Administrational help	.000

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.811
Bartlett's Test of Sphericity	Approx. Chi-Square	289.207
	Df	21
	Sig.	.000

Communalities

	Initial	Extraction
Facility for Professional Development	1.000	.232
Motivate to increase Teachers' skill	1.000	.711
Expectation from teachers'	1.000	.674
Link between teachers & admin	1.000	.521
Teaching & learning facilities	1.000	.720
Administrational help	1.000	.747
Administrational behavior supportive or encouraging	1.000	.746

Extraction Method: Principal Component Analysis.

Total Variance Explained

Compon	Initial Eigenvalues

ent	Total	% of Variance	Cumulative %
1	3.297	47.095	
2	1.054	15.056	
3	.876	12.510	74.661
4	.627	8.954	83.615
5	.576	8.230	91.845
6	.343	4.893	96.738
7	.228	3.262	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Cumulative %	Total	% of Variance	Cumulative %	Total
1	47.095	3.297	47.095	47.095	3.141
2	62.151	1.054	15.056	62.151	1.905

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Component Matrix[a]

	Component	
	1	2
Facility for Professional Development	-.482	.023
Motivate to increase Teachers' skill	-.495	.683
Expectation from teachers'	-.552	.608
Link between teachers & admin	.649	.316
Teaching & learning facilities	.817	.227
Administrational help	.834	.227

Administrational behavior supportive or encouraging	.855	.122

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Pattern Matrix[a]

	Component	
	1	2
Facility for Professional Development	-.396	.162
Motivate to increase Teachers' skill	.033	.855
Expectation from teachers'	-.065	.794
Link between teachers & admin	.765	.144
Teaching & learning facilities	.850	.004
Administrational help	.864	.000
Administrational behavior supportive or encouraging	.812	-.117

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Structure Matrix

	Component	
	1	2
Facility for Professional Development	-.458	.315
Motivate to increase Teachers' skill	-.298	.843
Expectation from teachers'	-.372	.819
Link between teachers & admin	.709	-.151
Teaching & learning facilities	.848	-.324
Administrational help	.864	-.334
Administrational behavior supportive or encouraging	.857	-.431

Structure Matrix

	Component	
	1	2
Facility for Professional Development	-.458	.315
Motivate to increase Teachers' skill	-.298	.843
Expectation from teachers'	-.372	.819
Link between teachers & admin	.709	-.151
Teaching & learning facilities	.848	-.324
Administrational help	.864	-.334
Administrational behavior supportive or encouraging	.857	-.431

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2
1	1.000	-.386
2	-.386	1.000

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.796
Bartlett's Test of Sphericity	Approx. Chi-Square	271.613
	Df	15
	Sig.	.000

Communalities

	Initial	Extraction
Motivate to increase Teachers' skill	1.000	.721
Expectation from teachers'	1.000	.673
Link between teachers & admin	1.000	.510
Teaching & learning facilities	1.000	.737
Administrational help	1.000	.771
Administrational behavior supportive or encouraging	1.000	.764

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.123	52.053	
2	1.054	17.564	
3	.670	11.174	80.791
4	.582	9.694	90.484
5	.343	5.709	96.194
6	.228	3.806	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Cumulative %	Total	% of Variance	Cumulative %	Total
1	52.053	3.123	52.053	52.053	2.942
2	69.617	1.054	17.564	69.617	1.848

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Cumulative %	Total	% of Variance	Cumulative %	Total
1	52.053	3.123	52.053	52.053	2.942
2	69.617	1.054	17.564	69.617	1.848

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Component Matrix[a]

	Component	
	1	2
Motivate to increase Teachers' skill	-.501	.686
Expectation from teachers'	-.551	.608
Link between teachers & admin	.639	.318
Teaching & learning facilities	.829	.223
Administrational help	.850	.222
Administrational behavior supportive or encouraging	.866	.117

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Pattern Matrix[a]

	Component	
	1	2
Motivate to increase Teachers' skill	.034	.861
Expectation from teachers'	-.059	.797
Link between teachers & admin	.749	.123

Teaching & learning facilities	.845	-.035
Administrational help	.862	-.042
Administrational behavior supportive or encouraging	.807	-.155

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Structure Matrix

	Component	
	1	2
Motivate to increase Teachers' skill	-.276	.849
Expectation from teachers'	-.346	.819
Link between teachers & admin	.705	-.146
Teaching & learning facilities	.858	-.339
Administrational help	.877	-.352
Administrational behavior supportive or encouraging	.862	-.445

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2
1	1.000	-.360
2	-.360	1.000

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sa

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	122	100.0
	Excluded[a]	0	.0
	Total	122	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.833	4

[DataSet2] C:\Users\Monira\Desktop\Finally used data\Teacher used for factor analysis.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	122	100.0
	Excluded[a]	0	.0
	Total	122	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.573	2

[DataSet1] C:\Users\Monira\Desktop\Finally used data\Student data used for final Factor analysis.sav

Correlation Matrix[a]

		Parents' discussion	Father help	Mother helping hour
Correlation	Parents' discussion	1.000	-.181	-.080
	Father help	-.181	1.000	.134
	Mother helping hour	-.080	.134	1.000
	others' helpig hour	-.022	.026	.078
	parents' reward	-.115	.086	.049

Sig. (1-tailed)	Parents' discussion		.000	.000
	Father help	.000		.000
	Mother helping hour	.000	.000	
	others' helpig hour	.141	.099	.000
	parents' reward	.000	.000	.008

a. Determinant = .920

Correlation Matrix[a]

		others' helpig hour	parents' reward
Correlation	Parents' discussion	-.022	-.115
	Father help	.026	.086
	Mother helping hour	.078	.049
	others' helpig hour	1.000	-.051
	parents' reward	-.051	1.000
Sig. (1-tailed)	Parents' discussion	.141	.000
	Father help	.099	.000
	Mother helping hour	.000	.008
	others' helpig hour		.006
	parents' reward	.006	

a. Determinant = .920

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.566
Bartlett's Test of Sphericity	Approx. Chi-Square	204.866
	df	10
	Sig.	.000

Communalities

	Initial	Extraction
Parents' discussion	1.000	.429
Father help	1.000	.449

Mother helping hour	1.000	.413
others' helpig hour	1.000	.643
parents' reward	1.000	.472

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.338	26.758	
2	1.069	21.371	
3	.900	18.003	66.131
4	.891	17.819	83.951
5	.802	16.049	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Cumulative %	Total	% of Variance	Cumulative %	Total
1	26.758	1.338	26.758	26.758	1.331
2	48.128	1.069	21.371	48.128	1.078

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Component Matrix[a]

	Component	
	1	2
Parents' discussion	-.640	.141
Father help	.670	.017
Mother helping hour	.514	.386

others' helpig hour	.144	.789
parents' reward	.441	-.527

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Pattern Matrix[a]

	Component	
	1	2
Parents' discussion	-.656	.040
Father help	.655	.121
Mother helping hour	.431	.461
others' helpig hour	-.010	.802
parents' reward	.534	-.452

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 11 iterations.

Structure Matrix

	Component	
	1	2
Parents' discussion	-.654	.016
Father help	.659	.145
Mother helping hour	.448	.477
others' helpig hour	.020	.802
parents' reward	.518	-.433

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Component CorrelationMatrix

Component	1	2

1	1.000	.037
2	.037	1.000

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	2462	100.0
	Excluded[a]	0	.0
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.042	5

Correlation Matrix[a]

		Parents' discussion	Father help	Mother helping hour	parents' reward
Correlation	Parents' discussion	1.000	-.181	-.080	-.115
	Father help	-.181	1.000	.134	.086
	Mother helping hour	-.080	.134	1.000	.049
	parents' reward	-.115	.086	.049	1.000
Sig. (1-tailed)	Parents' discussion		.000	.000	.000
	Father help	.000		.000	.000
	Mother helping hour	.000	.000		.008
	parents' reward	.000	.000	.008	

a. Determinant = .929

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.575
Bartlett's Test of Sphericity	Approx. Chi-Square	180.791
	df	6
	Sig.	.000

Communalities

	Initial	Extraction
Parents' discussion	1.000	.417
Father help	1.000	.451
Mother helping hour	1.000	.244
parents' reward	1.000	.220

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.333	33.322	
2	.963	24.078	57.400
3	.898	22.456	79.856
4	.806	20.144	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	33.322	1.333	33.322	33.322

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Parents' discussion	-.646
Father help	.672
Mother helping hour	.494
parents' reward	.470

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Correlation Matrix[a]

		Father help	Mother helping hour
Correlation	Father help	1.000	.134
	Mother helping hour	.134	1.000
	parents' reward	.086	.049
	Parent discussion in reverse way	.250	.111
Sig. (1-tailed)	Father help		.000
	Mother helping hour	.000	
	parents' reward	.000	.008
	Parent discussion in reverse way	.000	.000

a. Determinant = .898

Correlation Matrix[a]

		parents' reward	Parent discussion in reverse way
Correlation	Father help	.086	.250
	Mother helping hour	.049	.111
	parents' reward	1.000	.117

	Parent discussion in reverse way	.117	1.000
Sig. (1-tailed)	Father help	.000	.000
	Mother helping hour	.008	.000
	parents' reward		.000
	Parent discussion in reverse way	.000	

a. Determinant = .898

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.578
Bartlett's Test of Sphericity	Approx. Chi-Square	264.113
	df	6
	Sig.	.000

Communalities

	Initial	Extraction
Father help	1.000	.489
Mother helping hour	1.000	.236
parents' reward	1.000	.177
Parent discussion in reverse way	1.000	.494

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.396	34.896	
2	.957	23.918	58.814
3	.901	22.522	81.336
4	.747	18.664	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	34.896	1.396	34.896	34.896

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Father help	.699
Mother helping hour	.486
parents' reward	.420
Parent discussion in reverse way	.703

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	2462	100.0
	Excluded[a]	0	.0
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.042	5

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	2462	100.0

	Excluded[a]	0	.0
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.001	4

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	2462	100.0
	Excluded[a]	0	.0
	Total	2462	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.347	4

APPENDIX 8.14

OUTPUT FROM MLWin

1: Research Question one:

$$\text{resp}_{1jkl} \sim \text{N}(XB,\ \Omega)$$

$$\text{resp}_{2jkl} \sim \text{N}(XB,\ \Omega)$$

$$\text{resp}_{1jkl} = \beta_{0jkl}\text{Cons.normalssc}_{ijkl}$$

$$\beta_{0jkl} = \text{-0.187(0.096)} + f_{0l} + v_{0kl} + u_{0jkl}$$

$$\text{resp}_{2jkl} = \beta_{1jkl}\text{Cons.SDQ}_{ijkl}$$

$$\beta_{1jkl} = 41.223(0.723) + f_{1l} + v_{1kl} + u_{1jkl}$$

$$\begin{bmatrix} f_{0l} \\ f_{1l} \end{bmatrix} \sim \text{N}(0,\ \Omega_f) \ :\ \Omega_f = \begin{bmatrix} 0.314(0.089) & \\ 2.426(0.619) & 19.529(5.033) \end{bmatrix}$$

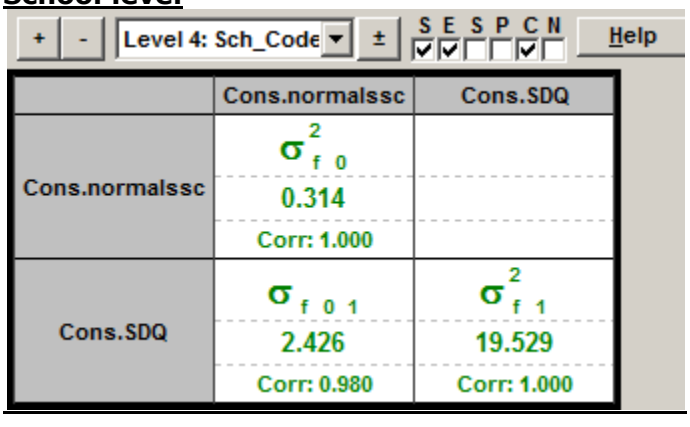
$$\begin{bmatrix} v_{0kl} \\ v_{1kl} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.163(0.040) & \\ 0.376(0.195) & 5.278(1.635) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jkl} \\ u_{1jkl} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.288(0.008) & \\ 0.936(0.073) & 39.450(1.144) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 20083.079(4852 of 4924 cases in use)

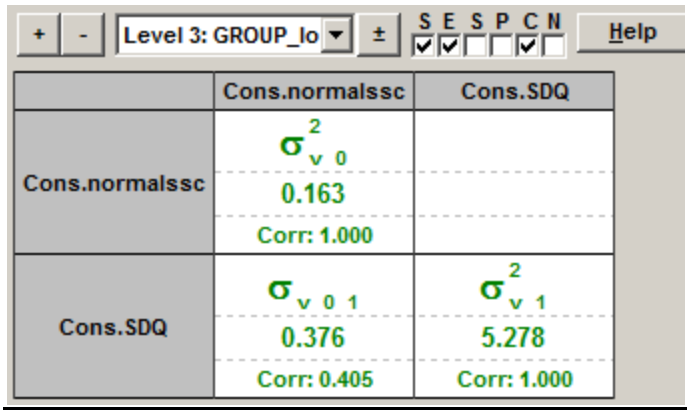
Correlation

School level

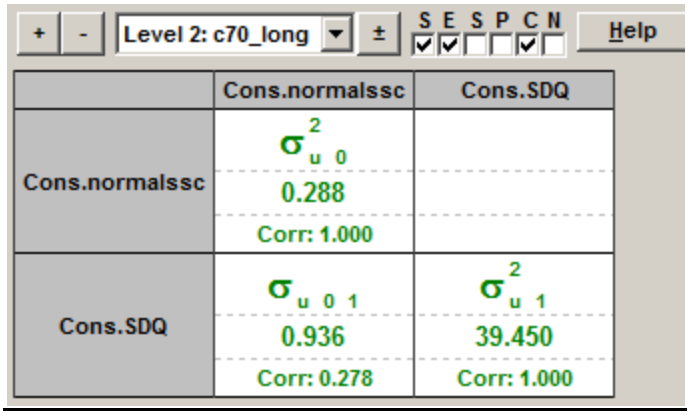


	Cons.normalssc	Cons.SDQ
Cons.normalssc	$\sigma^2_{f\ 0}$	
	0.314	
	Corr: 1.000	
Cons.SDQ	$\sigma_{f\ 0\ 1}$	$\sigma^2_{f\ 1}$
	2.426	19.529
	Corr: 0.980	Corr: 1.000

Class level



Student level



With prior attainment

$$\text{resp}_{1jkl} \sim \text{N}(XB,\ \Omega)$$

$$\text{resp}_{2jkl} \sim \text{N}(XB,\ \Omega)$$

$$\text{resp}_{1jkl} = \beta_{0jkl}\text{Cons.normalssc}_{ijkl} + 0.320(0.013)\text{ZMarkclassIX.normalssc}_{ijkl}$$

$$\beta_{0jkl} = -0.164(0.075) + f_{0l} + v_{0kl} + u_{0jkl}$$

$$\text{resp}_{2jkl} = \beta_{1jkl}\text{Cons.SDQ}_{ijkl} + 3.565(0.145)\text{ZMarkclassIX.SDQ}_{ijkl}$$

$$\beta_{1jkl} = 41.527(0.499) + f_{1l} + v_{1kl} + u_{1jkl}$$

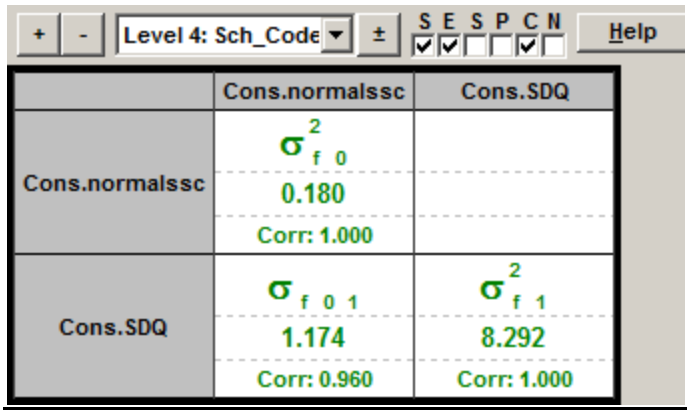
$$\begin{bmatrix} f_{0l} \\ f_{1l} \end{bmatrix} \sim \text{N}(0,\ \Omega_f) \ :\ \Omega_f = \begin{bmatrix} 0.180(0.055) & \\ 1.174(0.318) & 8.292(2.448) \end{bmatrix}$$

$$\begin{bmatrix} v_{0kl} \\ v_{1kl} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.119(0.030) & \\ 0.062(0.134) & 3.755(1.197) \end{bmatrix}$$

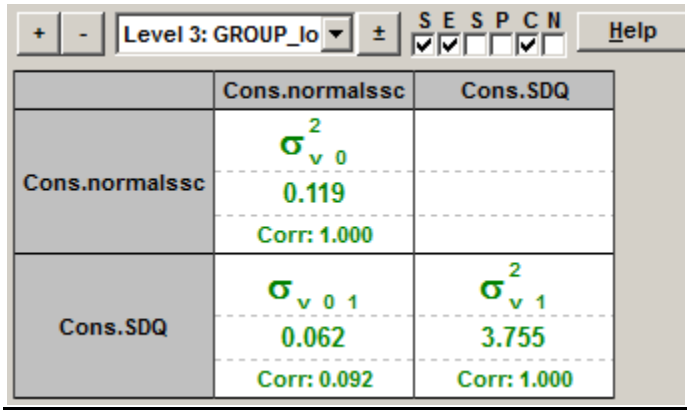
$$\begin{bmatrix} u_{0jkl} \\ u_{1jkl} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.232(0.007) & \\ 0.301(0.057) & 32.111(0.931) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 19205.855(4852 of 4924 cases in use)

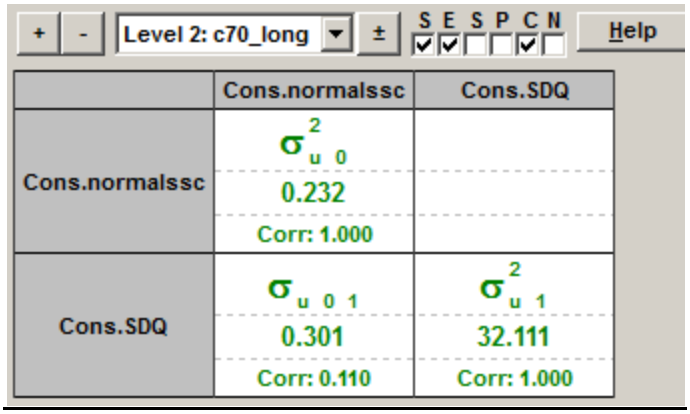
Correlation
School



Class



Student



5.2. ANSWERING THE SECOND RESEARCH QUESTION: How much students' personal and family (background) characteristics influence i) grade 10 students' academic attainment and academic self-concept and ii) progress (taking account of prior attainment):

Academic attainment

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$

$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons}$$

$$\beta_{0ijk} = \text{-0.186(0.095)} + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} \text{0.309(0.089)} \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} \text{0.166(0.041)} \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} \text{0.288(0.008)} \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 4095.419(2390 of 2462 cases in use)

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$

$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + \text{-0.004(0.050)}\text{female}_{ijk} + \text{-0.003(0.001)}\text{q26mon}_{ijk} + \text{0.058(0.004)}\text{TotSES}_{ijk}$$

$$\beta_{0ijk} = \text{-0.562(0.237)} + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} \text{0.199(0.057)} \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} \text{0.091(0.025)} \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} \text{0.248(0.009)} \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 2656.596(1684 of 2462 cases in use)

With missing data

$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$
$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons}$
$\beta_{0ijk} = -0.183(0.096) + v_{0k} + u_{0jk} + e_{0ijk}$

$[v_{0k}] \sim \text{N}(0,\ \Omega_v)\ :\ \Omega_v = [0.305(0.091)]$

$[u_{0jk}] \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = [0.179(0.046)]$

$[e_{0ijk}] \sim \text{N}(0,\ \Omega_e)\ :\ \Omega_e = [0.284(0.010)]$

*-2*loglikelihood(IGLS Deviance)* = 2991.631(1727 of 1775 cases in use)

$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$
$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + -0.003(0.050)\text{Girl}_{ijk} + -0.003(0.001)\text{q26mon}_{ijk} + 0.058(0.004)\text{TotSES}_{ijk}$
$\beta_{0ijk} = -0.592(0.238) + v_{0k} + u_{0jk} + e_{0ijk}$

$[v_{0k}] \sim \text{N}(0,\ \Omega_v)\ :\ \Omega_v = [0.202(0.057)]$

$[u_{0jk}] \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = [0.092(0.025)]$

$[e_{0ijk}] \sim \text{N}(0,\ \Omega_e)\ :\ \Omega_e = [0.250(0.009)]$

*-2*loglikelihood(IGLS Deviance)* = 2675.445(1684 of 1775 cases in use)

Academic self-concept

$\text{SDQ}_{ijk} \sim \text{N}(XB,\ \Omega)$
$\text{SDQ}_{ijk} = \beta_{0ijk}\text{Cons}$
$\beta_{0ijk} = 41.253(0.722) + v_{0k} + u_{0jk} + e_{0ijk}$

$[v_{0k}] \sim \text{N}(0,\ \Omega_v)\ :\ \Omega_v = [19.201(5.036)]$

$[u_{0jk}] \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = [5.719(1.754)]$

$[e_{0ijk}] \sim \text{N}(0,\ \Omega_e)\ :\ \Omega_e = [39.413(1.143)]$

*-2*loglikelihood(IGLS Deviance)* = 16238.002(2462 of 2462 cases in use)

$SDQ_{ijk} \sim N(XB, \Omega)$

$SDQ_{ijk} = \beta_{0ijk}\text{Cons} + 0.025(0.590)\text{female}_{ijk} + -0.029(0.014)\text{q26mon}_{ijk} + 0.239(0.045)\text{TotSES}_{ijk}$

$\beta_{0ijk} = 43.393(2.824) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 14.441(4.192) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 5.814(1.950) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 38.885(1.355) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 11412.908(1730 of 2462 cases in use)

With missing data (self-concept)

$SDQ_{ijk} \sim N(XB, \Omega)$

$SDQ_{ijk} = \beta_{0ijk}\text{Cons}$

$\beta_{0ijk} = 41.601(0.718) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 18.096(5.021) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 6.415(2.096) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 39.274(1.350) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 11735.057(1775 of 1775 cases in use)

$SDQ_{ijk} \sim N(XB, \Omega)$

$SDQ_{ijk} = \beta_{0ijk}\text{Cons} + 0.025(0.590)\text{Girl}_{ijk} + -0.029(0.014)\text{q26mon}_{ijk} + 0.239(0.045)\text{TotSES}_{ijk}$

$\beta_{0ijk} = 43.393(2.824) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 14.441(4.192) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 5.814(1.950) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 38.885(1.355) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 11412.908(1730 of 1775 cases in use)

Progress (3 level analysis)

$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons}$

$\beta_{0ijk} = \text{-0.186(0.095)} + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v)\ :\ \Omega_v = \begin{bmatrix} 0.309(0.089) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} 0.166(0.041) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e)\ :\ \Omega_e = \begin{bmatrix} 0.288(0.008) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 4095.419(2390 of 2462 cases in use)

$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + \text{0.321(0.013)ZMarkclassIX}_{ijk}$

$\beta_{0ijk} = \text{-0.164(0.075)} + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v)\ :\ \Omega_v = \begin{bmatrix} 0.180(0.056) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} 0.120(0.030) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e)\ :\ \Omega_e = \begin{bmatrix} 0.232(0.007) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 3564.712(2390 of 2462 cases in use)

$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + \text{0.279(0.015)ZMarkclassIX}_{ijk} + \text{-0.001(0.045)female}_{ijk} + \text{-0.001(0.001)q26mon}_{ijk} + \text{0.048(0.003)TotSES}_{ijk}$

$\beta_{0ijk} = \text{-0.633(0.213)} + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v)\ :\ \Omega_v = \begin{bmatrix} 0.122(0.038) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} 0.075(0.021) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e)\ :\ \Omega_e = \begin{bmatrix} 0.206(0.007) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 2334.880(1684 of 2462 cases in use)

Progress (no missing data)

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$
$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons}$$
$$\beta_{0ijk} = \text{-0.183(0.096)} + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.305(0.091) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.179(0.046) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.284(0.010) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 2991.631(1727 of 1775 cases in use)

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$
$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + \text{0.313(0.015)ZMarkclassIX}_{ijk}$$
$$\beta_{0ijk} = \text{-0.179(0.076)} + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.181(0.058) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.128(0.033) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.232(0.008) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 2621.183(1727 of 1775 cases in use)

$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + \text{0.281(0.015)ZMarkclassIX}_{ijk} + \text{-0.001(0.046)Girl}_{ijk} + \text{-0.001(0.001)q26mon}_{ijk} + \text{0.048(0.004)TotSES}_{ijk}$

$\beta_{0ijk} = \text{-0.664(0.215)} + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.124(0.039) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.075(0.021) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.208(0.007) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 2354.509(1684 of 1775 cases in use)

5.3. ANSWERING THE THIRD RESEARCH QUESTION: How much teacher characteristics influence students' attainment or self-concept, after control of the influence of prior attainment and background factor?

A) Teacher characteristics influence students' attainment, after control of the influence of prior attainment and background factor?

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$

$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons}$$

$$\beta_{0ijk} = \text{-0.186(0.095)} + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\left[v_{0k}\right] \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \left[\text{0.309(0.089)}\right]$$

$$\left[u_{0jk}\right] \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \left[\text{0.166(0.041)}\right]$$

$$\left[e_{0ijk}\right] \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \left[\text{0.288(0.008)}\right]$$

*-2*loglikelihood(IGLS Deviance)* = 4095.419(2390 of 2462 cases in use)

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$

$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + \text{0.321(0.013)}\text{ZMarkclassIX}_{ijk}$$

$$\beta_{0ijk} = \text{-0.164(0.075)} + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\left[v_{0k}\right] \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \left[\text{0.180(0.056)}\right]$$

$$\left[u_{0jk}\right] \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \left[\text{0.120(0.030)}\right]$$

$$\left[e_{0ijk}\right] \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \left[\text{0.232(0.007)}\right]$$

*-2*loglikelihood(IGLS Deviance)* = 3564.712(2390 of 2462 cases in use)

$\text{normalssc}_{ijk} \sim N(XB, \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.279(0.015)\text{ZMarkclassIX}_{ijk} + -0.001(0.045)\text{Girl}_{ijk} + -0.001(0.001)\text{q26mon}_{ijk} + 0.048(0.003)\text{TotSES}_{ijk}$

$\beta_{0ijk} = -0.633(0.213) + v_{0k} + u_{0jk} + e_{0ijk}$

$\left[v_{0k}\right] \sim N(0, \Omega_v) : \Omega_v = \left[0.122(0.038)\right]$

$\left[u_{0jk}\right] \sim N(0, \Omega_u) : \Omega_u = \left[0.075(0.021)\right]$

$\left[e_{0ijk}\right] \sim N(0, \Omega_e) : \Omega_e = \left[0.206(0.007)\right]$

*-2*loglikelihood(IGLS Deviance)* = 2334.880(1684 of 2462 cases in use)

$\text{normalssc}_{ijk} \sim N(XB, \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.280(0.015)\text{ZMarkclassIX}_{ijk} + -0.016(0.045)\text{Girl}_{ijk} + -0.001(0.001)\text{q26mon}_{ijk} + 0.048(0.004)\text{TotSES}_{ijk} + 0.069(0.187)\text{Femalepr}_{ijk} + -0.020(0.013)\text{q31yrsteach}_{k} + 0.078(0.158)\text{q33qualiteach}_{k} + 0.022(0.011)\text{q34expteach}_{k} + -0.046(0.099)\text{q37pedateach}_{k} + -0.213(0.176)\text{q38inserpr}_{k} + 0.278(0.142)\text{q35jonrankteach}_{k} + 0.369(0.108)\text{q36salaryteach}_{k}$

$\beta_{0ijk} = -1.705(0.730) + v_{0k} + u_{0jk} + e_{0ijk}$

$\left[v_{0k}\right] \sim N(0, \Omega_v) : \Omega_v = \left[0.066(0.026)\right]$

$\left[u_{0jk}\right] \sim N(0, \Omega_u) : \Omega_u = \left[0.066(0.019)\right]$

$\left[e_{0ijk}\right] \sim N(0, \Omega_e) : \Omega_e = \left[0.206(0.007)\right]$

*-2*loglikelihood(IGLS Deviance)* = 2242.971(1632 of 2462 cases in use)

No Missing data

$\text{normalssc}_{ijk} \sim N(XB, \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons}$

$\beta_{0ijk} = -0.183(0.096) + v_{0k} + u_{0jk} + e_{0ijk}$

$\left[v_{0k}\right] \sim N(0, \Omega_v) : \Omega_v = \left[0.305(0.091)\right]$

$\left[u_{0jk}\right] \sim N(0, \Omega_u) : \Omega_u = \left[0.179(0.046)\right]$

$\left[e_{0ijk}\right] \sim N(0, \Omega_e) : \Omega_e = \left[0.284(0.010)\right]$

*-2*loglikelihood(IGLS Deviance)* = 2991.631(1727 of 1775 cases in use)

$$\text{normalssc}_{ijk} \sim N(XB,\ \Omega)$$

$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.313(0.015)\text{ZMarkclassIX}_{ijk}$$

$$\beta_{0ijk} = -0.179(0.076) + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.181(0.058) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.128(0.033) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.232(0.008) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 2621.183(1727 of 1775 cases in use)

$$\text{normalssc}_{ijk} \sim N(XB,\ \Omega)$$

$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.281(0.015)\text{ZMarkclassIX}_{ijk} + -0.001(0.046)\text{Girl}_{ijk} + -0.001(0.001)\text{q26mon}_{ijk} + 0.048(0.004)\text{TotSES}_{ijk}$$

$$\beta_{0ijk} = -0.664(0.215) + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.124(0.039) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.075(0.021) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.208(0.007) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 2354.509(1684 of 1775 cases in use)

$$\text{normalssc}_{ijk} \sim N(XB,\ \Omega)$$

$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.281(0.015)\text{ZMarkclassIX}_{ijk} + -0.016(0.045)\text{Girl}_{ijk} + -0.001(0.001)\text{q26mon}_{ijk} + 0.048(0.004)\text{TotSES}_{ijk} + 0.069(0.188)\text{Femalepr}_{ijk} + -0.020(0.013)\text{q31yrsteach}_{k} + 0.079(0.159)\text{q33qualiteach}_{k} + 0.022(0.011)\text{q34expteach}_{k} + -0.047(0.099)\text{q37pedateach}_{k} + -0.214(0.178)\text{q38inserpr}_{k} + 0.280(0.143)\text{q35jonrankteach}_{k} + 0.372(0.109)\text{q36salaryteach}_{k}$$

$$\beta_{0ijk} = -1.741(0.736) + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.067(0.026) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.066(0.019) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.209(0.007) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 2261.941(1632 of 1775 cases in use)

B) Teacher characteristics influence students' self-concept, after control of the influence of prior attainment and background factor?

$SDQ_{ijk} \sim N(XB, \Omega)$

$SDQ_{ijk} = \beta_{0ijk}Cons$

$\beta_{0ijk} = 41.253(0.722) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 19.201(5.036) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 5.719(1.754) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 39.413(1.143) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 16238.002(2462 of 2462 cases in use)

$SDQ_{ijk} \sim N(XB, \Omega)$

$SDQ_{ijk} = \beta_{0ijk}Cons + 3.630(0.147)ZMarkclassIX_{ijk}$

$\beta_{0ijk} = 41.586(0.494) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 7.855(2.402) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 4.010(1.262) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 32.100(0.931) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 15703.485(2462 of 2462 cases in use)

$SDQ_{ijk} \sim N(XB, \Omega)$

$SDQ_{ijk} = \beta_{0ijk}Cons + 3.604(0.176)ZMarkclassIX_{ijk} + 0.172(0.514)Girl_{ijk} + -0.013(0.013)q26mon_{ijk} + 0.092(0.041)TotSES_{ijk}$

$\beta_{0ijk} = 42.790(2.517) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 6.738(2.343) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 4.446(1.505) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 31.749(1.106) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 11042.249(1730 of 2462 cases in use)

$SDQ_{ijk} \sim N(XB, \Omega)$

$SDQ_{ijk} = \beta_{0ijk}Cons + 3.647(0.177)ZMarkclassIX_{ijk} + 0.195(0.494)Girl_{ijk} + -0.011(0.013)q26mon_{ijk} + 0.096(0.042)TotSES_{ijk} + -1.577(1.286)Femalepr_{ijk} + -0.198(0.088)q31yrsteach_{k} + 1.264(1.085)q33qualiteach_{k} + 0.089(0.072)q34expteach_{k} + 0.413(0.681)q37pedateach_{k} + -3.064(1.209)q38inserpr_{k} + 2.190(0.974)q35jonrankteach_{k} + 2.902(0.738)q36salaryteach_{k}$

$\beta_{0ijk} = 35.638(5.380) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 1.636(1.334) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 4.136(1.444) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 32.177(1.138) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 10699.485(1678 of 2462 cases in use)

Table with no missing data

$SDQ_{ijk} \sim N(XB, \Omega)$

$SDQ_{ijk} = \beta_{0ijk}Cons$

$\beta_{0ijk} = 41.601(0.718) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 18.096(5.021) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 6.415(2.096) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 39.274(1.350) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 11735.057(1775 of 1775 cases in use)

$$SDQ_{ijk} \sim N(XB, \Omega)$$
$$SDQ_{ijk} = \beta_{0ijk}Cons + 3.674(0.171)ZMarkclassIX_{ijk}$$
$$\beta_{0ijk} = 41.750(0.495) + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 7.368(2.459) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 4.405(1.491) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 31.796(1.093) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 11331.978(1775 of 1775 cases in use)

$SDQ_{ijk} \sim N(XB, \Omega)$
$SDQ_{ijk} = \beta_{0ijk}Cons + 3.604(0.176)ZMarkclassIX_{ijk} + 0.172(0.514)Girl_{ijk} + -0.013(0.013)q26mon_{ijk} + 0.092(0.041)TotSES_{ijk}$
$\beta_{0ijk} = 42.790(2.517) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 6.738(2.343) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 4.446(1.505) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 31.749(1.106) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 11042.249(1730 of 1775 cases in use)

$SDQ_{ijk} \sim N(XB, \Omega)$
$SDQ_{ijk} = \beta_{0ijk}Cons + 3.647(0.177)ZMarkclassIX_{ijk} + 0.195(0.494)Girl_{ijk} + -0.011(0.013)q26mon_{ijk} + 0.096(0.042)TotSES_{ijk} +$
$-1.577(1.286)Femalepr_{ijk} + -0.198(0.088)q31yrsteach_{k} + 1.264(1.085)q33qualiteach_{k} + 0.089(0.072)q34expteach_{k} +$
$0.413(0.681)q37pedateach_{k} + -3.064(1.209)q38inserpr_{k} + 2.190(0.974)q35jonrankteach_{k} + 2.902(0.738)q36salaryteach_{k}$
$\beta_{0ijk} = 35.638(5.380) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0, \Omega_v) : \Omega_v = \begin{bmatrix} 1.636(1.334) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} 4.136(1.444) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0, \Omega_e) : \Omega_e = \begin{bmatrix} 32.177(1.138) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 10699.485(1678 of 1775 cases in use)

Research question 4:

A. With Large sample

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$
$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons}$$
$$\beta_{0ijk} = -0.186(0.095) + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.309(0.089) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.166(0.041) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.288(0.008) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 4095.419(2390 of 2462 cases in use)

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$
$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.321(0.013)\text{ZMarkclassIX}_{ijk}$$
$$\beta_{0ijk} = -0.164(0.075) + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.180(0.056) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.120(0.030) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.232(0.007) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 3564.712(2390 of 2462 cases in use)

$\text{normalssc}_{ijk} \sim N(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.267(0.016)\text{ZMarkclassIX}_{ijk} + 0.113(0.016)\text{Q1.1}_{ijk} + 0.281(0.022)\text{q2.1}_{ijk} + 0.020(0.028)\text{q3.1}_{ijk} +$
$-0.018(0.029)\text{req4a:yes}_{ijk} + 0.048(0.026)\text{req4c:Yes}_{ijk} + -0.011(0.026)\text{req4d:Yes}_{ijk} + -0.048(0.029)\text{req4e:Yes}_{ijk} +$
$0.023(0.032)\text{req4f:Yes}_{ijk} + 0.048(0.058)\text{req4g:Yes}_{ijk} + 0.011(0.029)\text{Computer}_{ijk} + -0.053(0.052)\text{Computer with internet}_{ijk} +$
$-0.116(0.129)\text{home private tutor}_{ijk} + 0.048(0.129)\text{coaching center}_{ijk} + -0.020(0.129)\text{both}_{ijk} +$
$-0.029(0.040)\text{all or some core subjects}_{ijk} + 0.119(0.064)\text{all or some group subjects}_{ijk} +$
$-0.010(0.029)\text{some core and gropu subjects}_{ijk} + -0.033(0.014)\text{req7}_{ijk} + -0.011(0.010)\text{q8}_{ijk} + 0.079(0.028)\text{q11:Yes}_{ijk} +$
$-0.009(0.026)\text{q14:Yes}_{ijk} + 0.115(0.083)\text{Democratic}_{ijk} + 0.051(0.083)\text{Autocratic}_{ijk} + 0.000(0.002)\text{TotTechInt}_{ijk} +$
$0.039(0.042)\text{nuclear family}_{ijk} + 0.003(0.056)\text{single (either father or mother)}_{ijk} + 0.004(0.012)\text{q3totsiblings}_{ijk} +$
$0.077(0.124)\text{1-2}_{ijk} + 0.088(0.118)\text{3-4}_{ijk} + 0.120(0.120)\text{5-6}_{ijk}$

$\beta_{0ijk} = -1.238(0.256) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0,\ \Omega_v)\ :\ \Omega_v = \begin{bmatrix} 0.136(0.039) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} 0.058(0.017) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0,\ \Omega_e)\ :\ \Omega_e = \begin{bmatrix} 0.181(0.007) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 1762.964(1380 of 2462 cases in use)

$\text{normalssc}_{ijk} \sim N(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.279(0.013)\text{ZMarkclassIX}_{ijk} + 0.106(0.013)\text{Q1.1}_{ijk} + 0.283(0.018)\text{q2.1}_{ijk} + 0.021(0.021)\text{req4c:Yes}_{ijk} +$
$0.006(0.023)\text{req4e:Yes}_{ijk} + -0.004(0.031)\text{all or some core subjects}_{ijk} + 0.041(0.049)\text{all or some group subjects}_{ijk} +$
$0.017(0.024)\text{some core and gropu subjects}_{ijk} + -0.032(0.011)\text{req7}_{ijk} + 0.043(0.022)\text{q11:Yes}_{ijk} + 0.028(0.032)\text{q1teach}_{k} +$
$-0.138(0.073)\text{q2ateach}_{k} + 0.064(0.098)\text{q2bteach}_{k} + 0.005(0.003)\text{Totalstudent}_{k} + 0.240(0.067)\text{Faccon}_{k} + -0.057(0.049)\text{Facpar}_{k} +$
$-0.067(0.057)\text{Faccomm}_{k} + -0.017(0.047)\text{Faceng}_{k} + 0.156(0.070)\text{Faclead}_{k} + -0.046(0.063)\text{Facadsup}_{k} + 0.050(0.059)\text{Facexpec}_{k}$

$\beta_{0ijk} = -0.957(0.372) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0,\ \Omega_v)\ :\ \Omega_v = \begin{bmatrix} 0.000(0.000) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} 0.062(0.011) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0,\ \Omega_e)\ :\ \Omega_e = \begin{bmatrix} 0.203(0.006) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 2956.911(2238 of 2462 cases in use)

$\text{normalssc}_{ijk} \sim N(XB, \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.273(0.013)\text{ZMarkclassIX}_{ijk} + 0.107(0.013)\text{Q1.1}_{ijk} + 0.288(0.018)\text{q2.1}_{ijk} + -0.040(0.011)\text{req7}_{ijk} + 0.052(0.022)\text{q11:Yes}_{ijk} + -0.230(0.075)\text{q2ateach}_{k} + -0.001(0.004)\text{Totalstudent}_{k} + 0.174(0.110)\text{Faccon}_{k} + 0.021(0.077)\text{Faclead}_{k} + 0.032(0.097)\text{Female}_{k} + 0.027(0.012)\text{q3.1head}_{k} + 0.000(0.000)\text{HSC} + -0.195(0.283)\text{BA/BSC/BCOM}_{k} + -0.252(0.265)\text{MA/MSC/MCOM}_{k} + 0.000(0.000)\text{Others}_{k} + -0.014(0.009)\text{q5head}_{k} + -0.003(0.007)\text{q6head}_{k} + 0.000(0.000)\text{C in Ed}_{k} + 0.159(0.176)\text{B Ed}_{k} + 0.122(0.162)\text{M Ed}_{k} + -0.005(0.005)\text{q8head}_{k} + 0.000(0.000)\text{q9head}_{k} + 0.001(0.236)\text{Yes, but not good}_{k} + -0.029(0.221)\text{yes, with modern equipment}_{k} + -0.096(0.167)\text{Once/twice in a year}_{k} + 0.003(0.170)\text{Once/twice in a six month}_{k} + 0.000(0.000)\text{Once in every month}_{k} + 0.000(0.000)\text{q13head}_{k} + 0.008(0.003)\text{q14head}_{k} + -0.415(0.207)\text{Cat-B}_{k} + -0.542(0.273)\text{cat-C}_{k}$

$\beta_{0ijk} = -0.885(0.727) + v_{0k} + u_{0jk} + e_{0ijk}$

$\left[v_{0k}\right] \sim N(0, \Omega_v) : \Omega_v = \left[0.000(0.000)\right]$

$\left[u_{0jk}\right] \sim N(0, \Omega_u) : \Omega_u = \left[0.046(0.009)\right]$

$\left[e_{0ijk}\right] \sim N(0, \Omega_e) : \Omega_e = \left[0.207(0.006)\right]$

*-2*loglikelihood(IGLS Deviance)* = 3023.917(2279 of 2462 cases in use)

Reduced sample size

$\text{normalssc}_{ijk} \sim N(XB, \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons}$

$\beta_{0ijk} = -0.182(0.096) + v_{0k} + u_{0jk} + e_{0ijk}$

$\left[v_{0k}\right] \sim N(0, \Omega_v) : \Omega_v = \left[0.305(0.091)\right]$

$\left[u_{0jk}\right] \sim N(0, \Omega_u) : \Omega_u = \left[0.179(0.046)\right]$

$\left[e_{0ijk}\right] \sim N(0, \Omega_e) : \Omega_e = \left[0.284(0.010)\right]$

*-2*loglikelihood(IGLS Deviance)* = 2986.664(1724 of 1772 cases in use)

$$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$$

$$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.313(0.015)\text{ZMarkclassIX}_{ijk}$$

$$\beta_{0ijk} = -0.178(0.076) + v_{0k} + u_{0jk} + e_{0ijk}$$

$$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.181(0.058) \end{bmatrix}$$

$$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.128(0.033) \end{bmatrix}$$

$$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.231(0.008) \end{bmatrix}$$

*-2*loglikelihood(IGLS Deviance)* = 2615.072(1724 of 1772 cases in use)

$\text{normalssc}_{ijk} \sim \text{N}(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.268(0.016)\text{ZMarkclassIX}_{ijk} + 0.114(0.016)\text{Q1.1}_{ijk} + 0.283(0.022)\text{q2.1}_{ijk} + 0.020(0.028)\text{q3.1}_{ijk} +$
$-0.017(0.029)\text{req4a:yes}_{ijk} + 0.049(0.026)\text{req4c:Yes}_{ijk} + -0.012(0.026)\text{req4d:Yes}_{ijk} + -0.049(0.029)\text{req4e:Yes}_{ijk} +$
$0.024(0.032)\text{req4f:Yes}_{ijk} + 0.048(0.058)\text{req4g:Yes}_{ijk} + 0.011(0.029)\text{Computer}_{ijk} + -0.054(0.052)\text{Computer with internet}_{ijk} +$
$-0.118(0.130)\text{home private tutor}_{ijk} + 0.047(0.129)\text{coaching center}_{ijk} + -0.022(0.129)\text{both}_{ijk} +$
$-0.028(0.040)\text{all or some core subjects}_{ijk} + 0.120(0.064)\text{all or some group subjects}_{ijk} +$
$-0.010(0.029)\text{some core and gropu subjects}_{ijk} + -0.033(0.014)\text{req7}_{ijk} + -0.011(0.010)\text{q8}_{ijk} + 0.079(0.028)\text{q11:Yes}_{ijk} +$
$-0.009(0.027)\text{q14:Yes}_{ijk} + 0.114(0.083)\text{Democratic}_{ijk} + 0.050(0.083)\text{Autocratic}_{ijk} + 0.000(0.002)\text{TotTechInt}_{ijk} +$
$0.038(0.042)\text{nuclear family}_{ijk} + 0.004(0.057)\text{single (either father or mother)}_{ijk} + 0.004(0.012)\text{q3totsiblings}_{ijk} +$
$0.078(0.124)\text{1-2}_{ijk} + 0.089(0.119)\text{3-4}_{ijk} + 0.122(0.120)\text{5-6}_{ijk}$

$\beta_{0ijk} = -1.270(0.257) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim \text{N}(0,\ \Omega_v) \ :\ \Omega_v = \begin{bmatrix} 0.137(0.039) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim \text{N}(0,\ \Omega_u) \ :\ \Omega_u = \begin{bmatrix} 0.059(0.017) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim \text{N}(0,\ \Omega_e) \ :\ \Omega_e = \begin{bmatrix} 0.183(0.007) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 1778.614(1380 of 1772 cases in use)

$\text{normalssc}_{ijk} \sim N(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.266(0.015)\text{ZMarkclassIX}_{ijk} + 0.110(0.015)\text{Q1.1}_{ijk} + 0.282(0.021)\text{q2.1}_{ijk} + 0.029(0.024)\text{req4c:Yes}_{ijk} +$
$-0.020(0.027)\text{req4e:Yes}_{ijk} + -0.007(0.038)\text{all or some core subjects}_{ijk} + 0.099(0.060)\text{all or some group subjects}_{ijk} +$
$-0.013(0.029)\text{some core and gropu subjects}_{ijk} + -0.041(0.013)\text{req7}_{ijk} + 0.073(0.026)\text{q11:Yes}_{ijk} + 0.026(0.032)\text{q1teach}_{k} +$
$-0.166(0.073)\text{q2ateach}_{k} + 0.055(0.099)\text{q2bteach}_{k} + 0.006(0.003)\text{Totalstudent}_{k} + 0.237(0.068)\text{Faccon}_{k} + -0.067(0.050)\text{Facpar}_{k} +$
$-0.068(0.057)\text{Faccomm}_{k} + -0.008(0.047)\text{Faceng}_{k} + 0.170(0.071)\text{Faclead}_{k} + -0.034(0.063)\text{Facadsup}_{k} + 0.057(0.060)\text{Facexpec}_{k}$

$\beta_{0ijk} = -0.930(0.373) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0,\ \Omega_v) : \Omega_v = \begin{bmatrix} 0.000(0.000) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0,\ \Omega_u) : \Omega_u = \begin{bmatrix} 0.058(0.011) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0,\ \Omega_e) : \Omega_e = \begin{bmatrix} 0.201(0.007) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 2138.542(1618 of 1772 cases in use)

$\text{normalssc}_{ijk} \sim N(XB,\ \Omega)$

$\text{normalssc}_{ijk} = \beta_{0ijk}\text{Cons} + 0.264(0.016)\text{ZMarkclassIX}_{ijk} + 0.112(0.015)\text{Q1.1}_{ijk} + 0.287(0.022)\text{q2.1}_{ijk} +$
$-0.018(0.039)\text{all or some core subjects}_{ijk} + 0.132(0.062)\text{all or some group subjects}_{ijk} +$
$-0.010(0.029)\text{some core and gropu subjects}_{ijk} + -0.047(0.013)\text{req7}_{ijk} + 0.081(0.027)\text{q11:Yes}_{ijk} + -0.267(0.072)\text{q2ateach}_{k} +$
$-0.002(0.004)\text{Totalstudent}_{k} + 0.196(0.107)\text{Faccon}_{k} + 0.002(0.086)\text{Faclead}_{k} + 0.068(0.103)\text{Female}_{k} + 0.025(0.013)\text{q3.1head}_{k} +$
$0.000(0.000)\text{HSC} + -0.158(0.273)\text{BA/BSC/BCOM}_{k} + -0.193(0.254)\text{MA/MSC/MCOM}_{k} + 0.000(0.000)\text{Others}_{k} +$
$-0.014(0.009)\text{q5head}_{k} + -0.004(0.007)\text{q6head}_{k} + 0.000(0.000)\text{C in Ed}_{k} + 0.190(0.168)\text{B Ed}_{k} + 0.190(0.158)\text{M Ed}_{k} +$
$0.006(0.011)\text{q8head}_{k} + -0.000(0.000)\text{q9head}_{k} + 0.016(0.016)\text{q10head}_{k} + 0.010(0.233)\text{Yes, but not good}_{k} +$
$0.018(0.219)\text{yes, with modern equipment}_{k} + -0.048(0.169)\text{Once/twice in a year}_{k} + 0.063(0.175)\text{Once/twice in a six month}_{k} +$
$0.000(0.000)\text{Once in every month}_{k} + 0.000(0.000)\text{q13head}_{k} + 0.006(0.003)\text{q14head}_{k} + -0.431(0.219)\text{Cat-B}_{k} +$
$-0.502(0.280)\text{cat-C}_{k}$

$\beta_{0ijk} = -1.326(0.934) + v_{0k} + u_{0jk} + e_{0ijk}$

$\begin{bmatrix} v_{0k} \end{bmatrix} \sim N(0,\ \Omega_v) : \Omega_v = \begin{bmatrix} 0.000(0.000) \end{bmatrix}$

$\begin{bmatrix} u_{0jk} \end{bmatrix} \sim N(0,\ \Omega_u) : \Omega_u = \begin{bmatrix} 0.038(0.008) \end{bmatrix}$

$\begin{bmatrix} e_{0ijk} \end{bmatrix} \sim N(0,\ \Omega_e) : \Omega_e = \begin{bmatrix} 0.209(0.008) \end{bmatrix}$

*-2*loglikelihood(IGLS Deviance)* = 2141.851(1598 of 1772 cases in use)