Demographic Determinants of High Academic Achievement at Higher Secondary Level

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Abstract

The study was aimed at finding out the demographic determinants of high academic achievements of 12th grade students. All the 12th grade students enrolled in public and private colleges and higher secondary schools affiliated with Board of intermediate and secondary education Sargodha were the population. A sample of 900 students was drawn conveniently from the two selected districts. Out of these 900, 226 high achiever students securing 80% or more marks in HSSC part-1 exams were identified. A questionnaire for students was used for data collection. Descriptive statistical analysis revealed that Majority of the high achiever students were male, 1st or fifth in family order, were from educated and separate (nuclear) families, their fathers were government employees and has matric (SSC) qualification but mothers were either uneducated or had basic education. Their fathers' income ranges from 10,000 to 30000 rupees per month. They either do not spend time on play or play only cricket for only one or two hours. They do not take tuition and do not watch TV.

Key words: Determinants, High academic achievement, HSSC level students

Introduction

In society some professions are thought very respectable e.g. doctors, engineers, lawyers and teachers. All these professions require higher level achievement in academic carrier. So high academic achievement is desired by everybody but a few students are able to reach top positions in their classes.

In Pakistan, there is a system of evaluation of the secondary and higher secondary school students' performance at the end of each year of education. These examinations can be called as large scale assessment because a large number of students take these examinations, which are generally held annually. The basic purpose of these public examinations is the certification of students who have achieved a certain level of ability in the subjects taught at that stage (Rehmani, 2003). In every discipline, and especially at the higher secondary level, students have to face various difficulties to attain the best out of their academic struggle.

The academic performance of the students depends upon many factors which are called determinants. Determinants are responsible for achieving and maintaining the marks and these determinants should be identified and enhanced by Higher Secondary institution administrators, faculty members and students. Several factors could act as hurdles to students attaining and maintaining high scores that reflect their academic performance during education at higher secondary level. These factors may be way of learning, social activities, and parents caring etc. (Womble, 2003).

After completing the evaluation, at the end of the academic study, grades are awarded to students. These grades are indication of ability when these students look for their jobs (Biggs, 2011). Educationists have discussed many factors responsible for academic achievement; one of them is student's personal factor

(Eweniyi, 2007). The prominent indicators of Personal factor are; gender, locality, family education, family income, family system, student number in family, family members' help in studies, playing games, TV watching, and taking tuition. Different studies were conducted to find out the effects of these indicators on students achievements. The study of Naqvi and Hijazi (2006) shows a positive relationship between the student's family income and students' academic performance. The academic performance of students also depends on the parental involvement in their academic activities to achieve the goal (Barnard, 2004). According to Parveen (2006) both family systems (nuclear and joint family systems), effects the academic achievements of the students. Krashen (2005) found that students of educated parents achieve higher marks. He further described that in western societies and mostly in developed countries, there is a negative relationship between family order and academic achievement of students. Chambers and Schreiber (2002) stated that father's occupation, ethnicity and gender are significant factors of student's performance. The degree that a region is modernized and the regional status of job opportunities effect the student's academic achievement. According to Bray (2007) private tutoring is one of the important factors for academic achievement.

In Pakistan, higher secondary education is very crucial stage as on completion of this stage students start the voyage of their selected field of study e.g. medical, engineering, business administration etc. Due to significance of achievement (marks) for the jobs and higher education. It is important to find out the factors responsible for high academic achievement. Hence, the study was opted to find out demographic determinants of high academic achievement at Higher Secondary Level. Demographic determinants included were; gender, family education, joint family system, locale, institution type, study hours, fathers' employment, family order, help in study, father education, mother education, father

income, play time, playing games, tuition and TV watching hours. The study highlights the determinants of academic achievement, which may facilitate the parents, students and teacher for better learning.

Objectives of the Study

Objectives of the study were to explore the demographic determinants of high academic achievers of 12th grade students.

Methodology of the Study

The study was delimited to the 12th grade students of public and private colleges and higher secondary schools. Survey technique was used to collect the data. Population for this survey was all the 12th grade students enrolled in public and private colleges and higher secondary schools affiliated with the Board of Intermediate and Secondary Education Sargodha. There are four districts included in the jurisdiction of Board of Intermediate and Secondary Education Sargodha i.e. Sargodha, Khushab, Mianwali and Bhakkar. Two districts Mianwali and Bhakkar were conveniently selected. The sample of 900 students was conveniently drawn from the population selecting 50 students from each institution. The instrument of the study was a self developed questionnaire for students to find out the demographic determinants for high achiever. On the basis of pilot testing upon 100 students not included in the actual sample, the Cronbach alpha coefficient value of the questionnaire was $\alpha = 0.835$. The returned questionnaire were 700, among them 73 were incomplete. From the collected data of total 627, the data of 226 high achievers securing 80% or more marks (grade A and A[+]) in 11th grade examination held by Board of Intermediate and secondary education Sargodha, was separated and analyzed. Descriptive statistics was used to calculate the mean, percentage and standard deviation to find out the demographics and practices of high

academic achievers.

Results and Findings

Table 1
Grades of students with respect to gender, family education, family system, locality and institution type

	HSSC Grades		Total
	A+	A	
Gender			
Female	37 (42%)	73 (53%)	110 (48.7%)
Male	51 (58%)	65 (47%)	116 (51.3%)
Family Education			
Yes	65 (74%)	106 (76.8%)	171 (75.7%)
No	23 (26%)	32 (23.2%)	55 (24.3%)
Joint Family system			
Yes	43 (49%)	64 (46.4%)	107 (47.3%)
No	45 (51%)	74 (53.6%)	119 (52.7%)
Locality			
Urban	51 (58%)	92 (66.7%)	143 (63.3%)
Rural	37 (42%)	46 (33.3%)	83 (36.7%)
Institution type			
Public	44 (50%)	102 (74%)	146 (64.6%)
Private	44 (50%)	36 (26%)	80 (35.4%)

Table 1 show that the female students obtaining 'A' grades (53%) were more than that of male students (47%). But the percentage of A+ grade achievers is totally opposite of that, male students having A^+ grade were 58.0% whereas female students having A^+ grade were only 42.0%. On comparing overall achievement in terms of A and A^+ grades, male students were higher in percentage (51.3%) than female students (48.7%).

The analysis with respect to family education shows that among the students having A and A+ grades, 75.7% were from educated families, and 24.3% students were from uneducated families. Among them, 76.8% students having grade A were from educated families whereas the 23.2% students having A grade from uneducated families were lesser than that. Similarly, 74% students having A+ grades were from educated families and lesser than that 26% students having A+ grade were from uneducated families.

The analysis with respect to family system shows that among the students having A and A+ grades, 52.7% were from nuclear families, and 47.3% students were from joint families. Among them, 53.6% students having grade A were from nuclear families whereas 46.4% students with A grade and from joint families were lesser than that. Similarly, 51% students having A+ grades were from nuclear families and lesser than that 49% students having A+ grade were from joint families.

The analysis with respect to locality shows that among the students having A and A+ grades, 63.3% were from urban locality, and 36.7% students were from rural areas. Among them, 66.7% students having grade A were from urban areas whereas 33.3% students with A grade were from rural areas and were lesser than urban areas students.

Similarly, 58% students having A+ grades were from urban areas and lesser than that were 42% students having A+ grade from rural areas.

The analysis with respect to Institution type shows that among the students having A and A+ grades, 64.6% were from Public institutions, and 35.4% students were from private institutions. Among them, 74% students having grade A were from Public institutions whereas 26% students with A grade were from private institutions and were lesser than students of Public institutions. On the other hand number of students (50%) having A+ grade, were same in public and private institutions.

Table 2
Grades of students with respect to study hours

HSSC Grades	Study Hours at home						
	0_hr	1_hr	2_hr	3_hr	4_hr	5_hr	6_hr
A	0 (0.0%)	4 (2.9%)	12 (8.7%)	28 (20.3%)	32 (23.2%)	31 (22.5%)	31 (22.5%)
A+	1 (1%)	2 (2.3%)	8 (9%)	22 (25%)	17 (19.3%)	18 (20.7%)	20 (22.7%)
Total	1 (0.4%)	6 (2.7%)	20 (8.8%)	50 (22.1%)	49 (21.7%)	49 (21.7%)	51 (22.6%)

Table 2 show that the HSSC students having A and A+ grades; 22.6% study six hours daily at home, 21.7% study five or four hours, 8.8% study two hours, 2.7% study one hour and only 0.4% do not study at home. Among them 22.5% study for five or six hours daily at home, 23.2% students study for four hours, 20.3% students study for three hours, 8.7% students study for two hours and 2.9% students study for one hour.

While among the students having A+ grade, 27% students study for five or six hours daily at home, 19.3% students study for four hours, 25% students study for three hours, 9% students study for two hours, 2.3% students study for one hour and only one percent claimed that they do not study at home daily.

Table 3
Grades of students with respect to fathers' employment

Grades	Fathers' Employment							
	Un employed	Farmer	Business	Govt. Employee	Private Employee	Labour	Other	Total
A	1 (0.7%)	33 (23.9%)	12 (8.7%)	66 (47.8%)	2 (1.4%)	21 (15.2%)	3 (2.2%)	138 (61%)
A+	0 (0.0%)	20 (22.7%)	11 (12.5%)	38 (43.2%)	1 (1.1%)	17 (19.3%)	1 (1.1%)	88 (39%)
Total	1 (0.4%)	53 (23.5%)	23 (10.2%)	104 (46%)	3 (1.3%)	38 (16.8%)	4 (1.8%)	226 (100.0%)

Table 3 shows that there were 46% students with A or A+ grade whose fathers were Government employees and 23.5% were those students whose fathers were farmer, 16.8% were those students whose fathers were labourer, 10.2% students' fathers were businessmen, 1.8% and 1.3% students were those whose fathers had other professions, and private employees respectively and only 0.4% students were the sons of unemployed fathers.

Table 4
Grades of students with respect to family hours

HSSC Grades	Family Order						Total
	First	Second	Third	Four	Fifth	Sixth	
A	34	32	21	12	33	6	138
	24.6%	23.2%	15.2%	8.7%	24%	4.3%	61%
A+	24	17	19	8	20	0	88
	27.3%	19.3%	21.6%	9.1%	22.7%	0.0%	39%
Total	58	49	40	20	53	6	226
	25.7%	21.7%	17.7%	8.8%	23.5%	2.7%	100.0%

Table 4 show that there was no clear situation of students having A and A+ grades with respect to family order; overall 25.7% students were first in family order, 23.5% students were fifth in family order, 21.7% students were second in family order, 17.7% were third in family order and 8.8% students were fourth in family order. Similarly, there was no clear situation of students having A grade; 24.6% students were first in family order, 23.2% student were second, 15.2% students were third, 8.7% students were fourth and 24% were fifth and 4.3% students were 6[th]in family order. The same unclear position was of the students having A+ grade; 27.3% students with A+ grade were first in family order, 19.3% students were second, 21.6% were third, 9% students were 4th, 22.7% and students were 5th in family order.

Table 5
Grades of students with respect to help in study

Family Member	No	Father	Mother	Sister	Brother	Other	Total
A	52	19	7	21	32	7	138
	37.7%	13.8%	5%	15.2%	23.2%	5%	100.0%
A+	29	13	3	11	26	6	88
	33.0%	14.8%	3.4%	12.5%	29.5%	6.8%	100.0%
Total	81	32	10	32	58	13	226
	35.8%	14.2%	4.4%	14.2%	25.7%	5.8%	100.0%

Table 5 show that there was no clear situation of students having A and A+ grades with respect help in study at home; overall 35.8% students get no help in study at home, 25.7% students get help from their brothers, 14.2% students get help from their sisters and fathers, 4.4% get help from their mothers and 5.8% students get help from other people. Similarly, there was no clear situation of students having A grade; 37.7% students get no help in studies at home, 23.2% student get help from their brothers, 15.2% students get help from their sisters, 13.8% students get help from their fathers, 5% students get help from their mothers and from other people. The same unclear position was of the students having A+ grade; 33% students with A+ grade get no help in studies at home, 29.5% students get help from their brothers, 14.8% students get help from their fathers, 12.5% students get help from their sisters, 3.4% students get help from their mothers and 6.8% students get help from other people.

Table 6
Grades of students with respect to father education

Education	Un educated	Less than SSC	SSC	HSSC	B A	M A	Total
A	22	24	37	19	19	17	138
	16%	17.4%	26.8%	13.8%	13.8%	12.3%	100.0%
A+	12	15	22	19	14	6	88
	13.6%	17.0%	25%	21.6%	16%	6.8%	100.0%
Total	34	39	59	38	33	23	226
	15.0%	17.3%	26%	16.8%	14.6%	10.2%	100.0%

Table 6 show that there was no clear situation of students having A and A+ grades with respect to their fathers education; overall there were 26% students whose fathers had matric or SSC level education, 17.3% students' fathers' education was less than SSC, 16.8% students' fathers have intermediate or HSSC level education, 15% students' fathers were uneducated, 14.6% students' fathers were B.A, and 10.2% students' fathers M.A level education. Similarly, there was no clear situation of students having A grade; 26.8% students' fathers had matric or SSC level education, 17.4% students' fathers had education less than SSC, 16% students' fathers were uneducated, 13.8% students' fathers education level was intermediate/ HSSC and B.A. 12.3% students' fathers education was M. A. The same unclear position was of the students having A+ grade; 25% students' fathers were matric or SSC level education, 21.6% students' fathers were intermediate/ HHSC, 17% students' fathers had less than SSC level education, 16% students' fathers were B.A., 13.6% students' fathers were uneducated and only 6.8% students fathers were M. A.

Table 7
Grades of students with respect to mother education

Education	Un educated	Less than SSC	SSC	HSSC	B A	M A	Total
A	51	36	30	6	9	6	138
	37.0%	26%	21.7%	4.3%	6.5%	4.3%	100.0%
A+	35	25	13	5	6	4	88
	40%	28.4%	14.8%	5.7%	6.8%	4.5%	100.0%
Total	86	61	43	11	15	10	226
	38%	27.0%	19.0%	5%	6.6%	4.4%	100.0%

Table 7 shows that there was low trend of education among the mothers of students having A and A+ grades with respect to their mothers' education; overall there were 38% students whose mothers uneducated, 27% students' mothers' education was less than SSC, 19% students' mothers have matric / SSC level education, 5% students' mothers were intermediate/HSSC level education, 6.6% students' mothers were B.A, and only 4.4% students' mothers had M.A level education. Similar low trends was seen among the mothers of students having A grade; 37% students' mothers were uneducated, 26% students mothers had less than SSC level education, 21.7% students' mothers had matric / SSC level education, 4.3% students' mothers were intermediate / HSSC and M.A, 6.5% and students' mothers education was B. A. The same low trends was seen among the mothers of students having A+ grade; 40% students' mothers

were uneducated, 28.4% students' mothers had less than SSC level education, 14.8% students' mothers were matric, 5.7% students' mothers were intermediate and 6.8% students' mothers were B. A. and only 4.5% students' mothers were M. A.

Table 8
Grades of students with respect to father income

HSSC Grades	Father Income (Rs.)					Total
	1-10,000	10,000-20,0000	20,000-30,000	30,000-40,000	40,000-50,000	
A	26	45	38	16	13	138
	18.8%	32.6%	27.5%	11.6%	9.4%	100.0%
A+	21	23	21	12	11	88
	24%	26%	24%	13.6%	12.5%	100.0%
Total	47	68	59	28	24	226
	21%	30%	26%	12.4%	10.6%	100.0%

Table 8 shows the trend that with increase in income results decrease in grades; 21% students having A or A+ grades, were those whose father income ranges upto 10,000 to 20,000 per month; fathers of 27.5% students earning range was 20,000 to 30, 000, 11.6% students' father had earning range 30,000 to 40,000, 9.4% students' fathers had earning range 40,000 to 50,000 and one out standing result was that 18.8% students fathers earning range was up to 10,000. Similarly, there are 24% students with A+ grade whose fathers earning range was up to 10,000, and also 20,000 to 30,000, 26% students were those whose fathers earning range was 10,000 to 20,000, 13.6% were those students whose fathers earned 30 – 40 thousands and 12.5% were the students whose fathers earned 40 – 50 thousand rupees per month. Overall trend is that students having A and A+ grades are from low income families as their fathers' income ranges from 1000 to 30,000 as compared to the students whose fathers are earning more than that.

Table 9
Grades of students with respect to play time

HSSC Grades	Play Time							Total
	No	One hour	Two hours	Three hours	Four hours	Five hours	Above	
A	37	52	38	6	4	1	0	138
	26.8%	37.7%	27.5%	4.3%	2.9%	0.7%	0.0%	100%
A+	20	35	24	6	1	1	1	88
	22.7%	40%	27.3%	6.8%	1.1%	1.1%	1.1%	100%
Total	57	87	62	12	5	2	1	226
	25.2%	38.5%	27.4%	5.3%	2.2%	0.9%	0.4%	100%

Table 9 shows the trend of the students having A or A+ grades either do not play or play only for one hour. There were 25.2% students who do not spend any time on play and 38.5% students having A grade play only for one hour daily, whereas 27.4% students having A grade play for two. The students playing three, four, five or six hours and have A grade were negligible i.e. 5.3%, 2.2%, 0.9% and 0.4% respectively. Similarly, students having A+ grade 22.7% were those who play either no game, 40% were those who play only for one hour, 27.3% students having A+ grade were those

who play for two hour. 6.8% students play for three hours and 1.1% students play for four, five or six hours daily and have A+ grade. Overall most of the high achiever students having A and A+ grades, either do not spend time in play or spend only one – two hours.

Table 10
Grades of students with respect to games

HSSC Grades	Games						Total
	No	Volleyball	Cricket	Football	Hockey	Other	
A	61	5	53	4	0	15	138
	44.2%	3.6%	38.4%	2.9%	0.0%	11%	100.0%
A+	33	7	31	3	1	13	88
	37.5%	8.0%	35.2%	3.4%	1.1%	14.8%	100.0%
Total	94	12	84	7	1	28	226
	41.6%	5.3%	37.2%	3%	0.4%	12.4%	100.0%

Table 10 show the trend that students having A and A+ grades either do not play any game or only play cricket. 41.6% students with A and A+ grades do not play any game, 5.3% students play volleyball, 37.2% students play cricket, only 3% play cricket, 0.4% play hockey and 12.4% play other games. Similarly, 44.2% students having grade A play volley ball, 38.4% students play cricket, 3% play football, 11% play other games and there was no student having A grade play hockey.

Table 11
Grades of students with respect to tuition

HSSC Grades	Tuition taking			
	Yes	Now and then	No	Total
A	52	10	76	138
	23%	4.2 %	33.6%	61%
A+	27	3	58	88
	12%	1.3%	25.6%	42.4%
Total	79	13	134	26
	35%	5.7%	59.3%	100%

Table 11 shows that 35% students with A and A+ grades take tuition, 59.3% students do not take tuition and only 5.7% students take tuition now and then. Similarly, 12% students with A+ grade take tuition. While there were 25.6% students with A+ grade do not take tuition and only 1.3% students with A+ grade take tuitions now and then. The same trend was among the students, with A Grade 33.6% students do not take tuition, 23% students take tuition and only 4.2% students take tuition now and then.

Table 12
Grades of students with respect to TV watching time

HSSC Grades	TV Watching Time							
	No	1 hour	2 hour	3 hour	4 hour	5 hour	Above	Total
A	101	52	38	6	4	1	0	138
	73.2%	23%	16.8%	2.6%	1.7%	0.4%	0%	61%
A+	68	35	24	6	1	1	1	88
	77.3%	15.5%	10.6%	2.6%	0.4%	0.4%	0.4%	39%
Total	169	87	62	12	5	2	1	226
	74.8%	38.4%	27.4%	5.3%	2.2%	0.88%	0.4%	100%

Table 12 shows overall trend that students with A & A+ grade either do not watch TV or do this only for one hour. 74% students with A and A+ grades were those who do not watch TV, 38.4% students watch TV only for one hour whereas students who watch TV for two hours were 27.4%, 5.3% students watch TV for three hours, 2.2% students watch TV for four hours, 0.88% and 0.4% students either watch TV for 5 or six hours. There were 77.3% students having A+ grade who do not watch TV, while 15.5% students watch TV only for 1 hour, 10.6% students watch TV for two hours, 2.6% watch TV for three hours and negligible number of students 1.7% and 0.4% students watch TV for four or five hours. While no students watch TV for more than five hours. There was same trend among the students with A grades, 73.2% students do not watch TV, and 23% students watch TV only for one hour, 16.8% students watch TV for two hours. A negligible number of students 2.6%, 1.7%, and 0.4% students watch TV for three, four and five hours respectively, while there was no such student who watch TV for more than five hours.

Conclusions and Discussions

This was to study demographics of high achiever students and see that what the high achiever students having A and A+ grades do in their daily life. Majority of the high achiever students are male, belongs to educated families with separate (nuclear) family system, their fathers are government employees and majority of the fathers of high achiever students, has matric (SSC) qualification but their mothers are either uneducated or less than matric education. High achievers are from mediocre families as their fathers' income ranges from 10,000 to 30000 per month and they study in urban areas government institutions. High achievers are 1st or fifth in family order and get no help in education from the family members.

Majority of high achiever students either do not spend time on play or spend only one – two hours, they either do not play any game or play only cricket. Majority of high achiever students do not take tuition and do not watch TV. Few among them watch TV but only for 1 or 2 hours.

Most of the results are similar to the studies of other countries. The result that majority of high achievers are male is similar to the results of Farooq, Chaudhry, Shafi, & Berhanu (2011). The students of nuclear families are high achiever was supported by the study of Yang (2014). The result that majority of the students whose fathers have low income are high achievers is similar to Naqvi and Hijazi (2006). The results of Shin (2004) were similar to this study that high achiever students do not watch TV or watch only for one hour.

It is recommended that teachers and school administration may consider the demographics of student and individual differences to take care, supervise and facilitate the students from mediocre families to get best out of them.

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