

CHAPTER 4. DATA ANALYSIS

Chapter 4 begins with a description of the data collected for this study followed by a discussion of the criteria used to select participants. Included in this description is an overview of the demographic characteristics of those students and their families. This is followed by a discussion of participation data and all recoding that was performed to prepare student data for statistical analysis.

This chapter then focuses on how the statistical models in this study were constructed. The first model the association between participation and future earnings and educational attainment was calculated. The second model featured a bivariate linear regression model that was estimated for each dependent variable: future earnings and educational attainment. The final model featured a multiple regression model that was estimated for each dependent variable: future earnings and educational attainment. In each case, a series of independent variables used in a singular and combined nature were utilized.

Selection Criteria

The target population for this study was every student who participated in activities while in high school. The National Educational Longitudinal Study (NELS: 88) sample from which this study's sample was drawn from initially consisted of 12,144 students. These students completed the fourth and final follow-up to the NELS:88 survey in 2000 which included questions pertaining to their current educational and employment status. Student and family variables of interest were tagged and exported using the NELS:88 database and imported into SPSS 13.0 for Windows. This program was utilized to manipulate the data extracted.

Students in the Study

According to the National Center for Education Statistics (NCES), NELS:88 is a “nationally representative sample” (2002, p. 2) of individuals first surveyed in eighth grade in the year 1988. Follow-up surveys were conducted in 1990, 1992, 1994, and 2000.

Students who participated in the fourth follow-up, completed in 2000, made up the sample for this study because information pertaining to educational and employment status was collected at that time. The 12,144 participants were first narrowed after 743 participants were removed because of incomplete financial information and then again reduced after 2,410 participants were removed because of incomplete education status information. In all, a total of 8,991 participants made up the sample used for this study.

Student Demographic Information

Demographic information pertaining to the student sample is provided in Table 1. As the table illustrates, two of the student variables in the study were categorical variables that related to student demographics: gender and race. The table shows that females outnumbered males in this study and that over 67% of the population of the sample defined themselves as White, not Hispanic.

Table 1
Student Demographic Information

Variable	Frequency (N = 8991)	%
<i>Gender</i>		
Male	4150	46.2
Female	4841	53.8
<i>Race</i>		
American Indian or Alaska Native	71	0.8
Asian or Pacific Islander	556	6.2
Black, not Hispanic	747	8.3
White, not Hispanic	6063	67.4
Hispanic or Latino	1161	12.9
More than one race	247	2.7
Missing race information	146	1.6

Family Demographic Information

In addition, demographic information pertaining to the family is also included and highlighted in Tables 2 through 5. The socio-economic status (SES) of the family unit in which the student was living during the second follow-up in 1992 was collected. This variable represents an estimation of the SES of the family by centile as reported in NELS:88 in 1992, during the second follow-up. Table 2 demonstrates that the mean SES centile was 64.42.

Table 2
Student Socio-Economic Status

Quartile	Frequency (N = 8991)
Quartile 1	34.00
Quartile 2	60.00
Quartile 3	82.00

Information highlighting to total family income was collected during the second follow-up in 1992. Table 3 highlights that 22.6% of the sample population lived in a family where the total income was less than \$25,000. Nearly one half of the sample population lived in a family with a total income in 1991 between \$25,000 and \$75,000. This information is included to support the Socio-Economic data provided in Table 2.

Table 3
Total Family Income

Income Level	Frequency (N = 8991)	%
None	34	.4
Less than \$1,000	22	.2
\$1,000 - \$2,999	45	.5
\$3,000 - \$4,999	65	.7
\$5,000 - \$7,499	147	1.6
\$7,500 - \$9,999	236	2.6
\$10,000 - \$14,999	405	4.5
\$15,000 - \$19,999	459	5.1
\$20,000 - \$24,999	631	7.0
\$25,000 - \$34,999	1075	12.0
\$35,000 - \$49,999	1611	17.9
\$50,000 - \$74,999	1616	18.0
\$75,000 - \$99,999	574	6.4
\$100,000 - \$199,999	517	5.8
\$200,000 or more	190	2.1
Missing Information	1364	15.2

The education level of the parents of the sample population was also recorded. This variable represents the highest educational level of either parent in the family, as reported by the parent during the second follow-up in 1992. Table 4 indicates that nearly 33% of all respondents in the sample completed college.

Table 4
Parent Educational Status

Education Level	Frequency (N = 8991)	%
Didn't Finish HS	597	6.6
HS Grad or GED	1371	15.2
HS, Some College	3353	37.3
College Graduate	1460	16.2
M.A. or Equal	904	10.1
Ph.D., M.D., Other	552	6.1
Missing Information	754	8.5

One final piece of demographic information pertaining to the family was marital status of the family unit in which the student in the sample population was living at the time. These data were collected in interviews the parent during the second follow-up in 1992. Table 5 demonstrates that over 70% of the respondents in the sample lived in a family where the parental unit members identified themselves as married.

Table 5
Parent Marital Status

Marital Status	Frequency (N = 8991)	%
Single, Never Married	185	2.1
Married	6347	70.6
Divorced / Separated	1102	12.3
Widowed	222	2.5
Living Like Married	68	.8
Missing Information	1067	11.7

Participation Data

NELS:88 includes participation data on high school activities from two collection periods: the first follow-up in 1990 and the second follow-up in 1992. Those time periods closely represent a student's tenth grade and twelfth grade experience in high school. This data is best broken out into the following participation categories: team sports participation, individual sports participation, sports participation, cheer/dance participation, performing arts participation, high school activities participation.

Team Sports Participation

NELS:88 identified team sports as baseball/softball, basketball, football, soccer, swim team, and a category identified as other team sports (inclusive of hockey, volleyball, and other team sports). In the first follow-up in 1990, team sports participation was identified as a single variable for each sport, baseball/softball, basketball, football, soccer, swim team, and other team sports. For the purpose of this study, these variables were merged together to form a single team sports variable for this follow-up. In the second follow-up in 1992, team sports participation was identified as a single variable in NELS:88. Students with missing information were coded as a non-participant for the purpose of this study. A single variable was created using team sports participation data from both the first and second-follow ups to create an overall high school team sports participation variable. As seen in Table 6, there was a decline in overall participation between grade 10 and grade 12. Overall, nearly 40% of students in this study participated in a team sport in high school.

Table 6
Team Sports Participation Data

Variable	Frequency (N = 8991)	%
<i>10th Grade Team Sports Participation – 1990</i>		
Participant	3308	36.8
Non-Participant	5683	63.2
<i>12th Grade Team Sports Participation – 1992</i>		
Participant	2582	28.7
Non-Participant	6409	71.3
<i>High School Team Sports Participation</i>		
Participant	3560	39.6
Non-Participant	5431	60.4

Individual Sports Participation

NELS:88 identified individual sports as cross-country, gymnastics, golf, tennis, track, and wrestling. In both the first follow-up in 1990 and the second follow-up in 1992, individual sports participation was identified as a single variable. Students with missing information were coded as a non-participant for the purpose of this study. A single variable was created using individual sports participation data from both the first and second-follow ups to create an overall high school individual sports participation variable. Table 8 highlights that nearly thirty percent of all students in this sample participated in an individual sport in high school.

Table 7
Individual Sports Participation Data

Variable	Frequency (N = 8991)	%
<i>10th Grade Individual Sports Participation – 1990</i>		
Participant	1808	20.1
Non-Participant	7183	79.9
<i>12th Grade Individual Sports Participation – 1992</i>		
Participant	1742	19.4
Non-Participant	7249	80.6
<i>High School Individual Sports Participation</i>		
Participant	2499	27.8
Non-Participant	6492	72.2

Total Sports Participation

A single variable was created using team sports participation and individual sports participation data from both the first and second-follow ups to create an overall high school sports participation variable. Table 8 highlights that nearly forty-two percent of all high school students in this sample participated in one sport or another, team or individual, during their high school career.

Table 8
High School Sports Participation Data

Variable	Frequency (N = 8991)	%
<i>High School Sports Participation – 1990</i>		
Participant	3239	36.0
Non-Participant	5752	64.0
<i>High School Sports Participation – 1992</i>		
Participant	3377	37.6
Non-Participant	5614	62.4
<i>High School Sports Participation</i>		
Participant	3940	43.8
Non-Participant	5051	56.2

Cheer/Dance Participation

NELS:88 identified two other areas of activity participation: cheer participation and dance (pom-pom) participation. In the first follow-up in 1990, cheer and dance participation were identified as two separate single variables for each activity. For the purpose of this study, these variables were merged together to form a cheer/dance variable for this follow-up. In the second follow-up in 1992, cheer/dance participation was identified as a single variable in NELS:88. Students with missing information were coded as a non-participant for the purpose of this study. A single variable was created using cheer/dance participation data from both the first and second-follow ups to create an overall high school cheer/dance

participation variable. As seen in Table 9, cheer/dance participation is relatively low in terms of participation numbers compared to athletic participation.

Table 9
High School Cheer/Dance Participation Data

Variable	Frequency (N = 8991)	%
<i>High School Cheer/Dance Participation – 1990</i>		
Participant	692	7.7
Non-Participant	8299	92.3
<i>High School Cheer/Dance Participation – 1992</i>		
Participant	663	7.4
Non-Participant	8328	92.6
<i>High School Cheer/Dance Participation</i>		
Participant	943	10.5
Non-Participant	8048	89.5

Performing Arts Participation

Within NELS:88, two areas related to performing arts participation were identified: participated in school band or orchestra and participated in school play or musical. In the first follow-up in 1990 and the second follow-up in 1992, both were identified as two separate single variables for each activity. For the purpose of this study, these variables were merged together to form an overall performing arts participation variable for both follow-ups. Students with missing information were coded as a non-participant for the purpose of

this study. A single variable was created using merged school band or orchestra and school play or musical data from both the first and second-follow ups to create an overall high school performing arts participation variable. As seen in Table 10, over thirty percent of the sample population participated in the performing arts while in high school.

Table 10
High School Performing Arts Participation Data

Variable	Frequency (N = 8991)	%
<i>High School Performing Arts Participation – 1990</i>		
Participant	2402	26.7
Non-Participant	6589	73.3
<i>High School Performing Arts Participation – 1992</i>		
Participant	2453	27.3
Non-Participant	6538	72.7
<i>High School Performing Arts Participation</i>		
Participant	2733	30.4
Non-Participant	6258	69.6

High School Activities Participation

A single variable was created using sports participation and performing arts participation data from both the first and second-follow ups to create an overall high school activities participation variable. Table 11 highlights that nearly 70% of the students included

in this sample population participation in one or more activities during their high school experience.

Table 11
High School Activities Participation Data

Variable	Frequency (N = 8991)	%
<i>High School Activities Participation – 1990</i>		
Participant	4179	46.5
Non-Participant	4812	53.5
<i>High School Activities Participation – 1992</i>		
Participant	5044	56.1
Non-Participant	3947	43.9
<i>High School Activities Participation</i>		
Participant	6223	69.2
Non-Participant	2768	30.8

Findings from the Models of Association

For this statistical analysis, the student data related to participation in high school and educational attainment and earnings data from beyond high school were imported into SPSS for Windows. This model was used to study the relationship between participation, measured in different degrees by different variables, and future earnings and educational attainment.

Somer's d was selected as the calculation to measure the association between these two ordinal variables. Somer's d is an asymmetric measure of association between two variables which are ordinal in nature (Newson, n.d.). In the first set of calculations, the dependent variable, future earnings, was an ordinal variable, while the independent variable indicating participation was also ordinal. In the second instance, the dependent variable, educational attainment, was ordinal. The independent variable was ordinal, indicating participation.

Future Earnings

A calculation of the association between a series of independent variables measuring participation and future earning was completed. This calculation demonstrated that there is some relationship between participation in activities and future earnings, though not robust by any means. It is important to note that there are higher correlations between participation in athletic activities and future earnings when compared to participation in cheer/dance and performing arts and a higher correlation between activities participation in grade 12 compared to grade 10, as is demonstrated in Table 12.

Table 12
*Correlation between Participation in High School Activities and Future Earnings
 (n=8991 respondents)*

	Somer's d Value	Significance
Team Sports Participation – Grade 10	.162	.000*
Individual Sports Participation – Grade 10	.136	.000*
Total Sports Participation – Grade 10	.144	.000*
Cheer / Dance Participation – Grade 10	.086	.000*
Performing Arts Participation – Grade 10	.094	.000*
Total Activities Participation – Grade 10	.124	.000*
Team Sports Participation – Grade 12	.133	.000*
Individual Sports Participation – Grade 12	.201	.000*
Total Sports Participation – Grade 12	.190	.000*
Cheer / Dance Participation – Grade 12	.122	.000*
Performing Arts Participation – Grade 12	.118	.000*
Total Activities Participation – Grade 12	.212	.000*
Team Sports Participation - HS	.134	.000*
Individual Sports Participation – HS	.185	.000*
Total Sports Participation – HS	.150	.000*
Cheer / Dance Participation – HS	.080	.000*
Performing Arts Participation – HS	.080	.000*
Total Activities Participation – HS	.208	.000*

* p<.001

Educational Attainment

A calculation of the association between a series of independent variables measuring participation and educational attainment was completed. This calculation demonstrated that there is some relationship between participation in activities and educational attainment, though not robust by any means. It is important to note that there are more robust correlations between participation in athletic activities and educational attainment when compared to participation in cheer/dance and performing arts in all levels of participation as is demonstrated in Table 13.

Table 13
Correlation between Participation in High School Activities and Educational Attainment
(n=8991 respondents)

Variable	Somer's d Value	Significance
Team Sports Participation – Grade 10	.162	.000*
Individual Sports Participation – Grade 10	.181	.000*
Total Sports Participation – Grade 10	.160	.000*
Cheer / Dance Participation – Grade 10	-.029	.525
Performing Arts Participation – Grade 10	-.026	.057
Total Activities Participation – Grade 10	.074	.000*
Team Sports Participation – Grade 12	.175	.000*
Individual Sports Participation – Grade 12	.193	.000*
Total Sports Participation – Grade 12	.204	.000*
Cheer / Dance Participation – Grade 12	-.014	.000*
Performing Arts Participation – Grade 12	-.022	.110
Total Activities Participation – Grade 12	.137	.000*
Team Sports Participation - HS	.166	.000*
Individual Sports Participation – HS	.180	.000*
Total Sports Participation – HS	.164	.000*
Cheer / Dance Participation – HS	-.045	.000*
Performing Arts Participation – HS	-.029	.000*
Total Activities Participation – HS	.145	.000*

* p<.001

Summary

In each case, no statistical correlation was found between participation and future wage earnings or future educational attainment. This was further verified by the completion of a Gamma calculation, along with other nonparametric measures, each of which demonstrated similar results. In each case, there was no statistical correlation.

Findings from the Bivariate Linear Regression Model

For this statistical analysis, the student data related to participation in high school and educational attainment and earnings data from beyond high school were imported into SPSS for Windows. This model was selected due to the fact that the only analysis desired was the direct, singular relationship between activities and future earnings and educational attainment, not accounting for additional variables.

In these linear regression problems, what is known about one variable is used to make predictions about other variables (Keppel & Zedeck, 1989). As Green and Salkind (2005) highlighted, bivariate linear regression computes the following equation that relates the predicted Y scores (\hat{Y}) to X scores. The equation includes a slope weight for the independent variable and an additive constant:

$$\hat{Y} = B_{slope}X + B_{constant}$$

\hat{Y} = the dependent variable, future earnings or educational attainment

X = the independent variable, participation, either a participant or non-participant

B_{slope} = the slope weight of the equation

$B_{constant}$ = the additive constant

This equation was calculated, using participation in varying levels, the independent variable in each case, and either future earnings or educational attainment as the dependent variable. The analysis of each is highlighted in this section by dependent variable.

This section highlights the analysis of participation in activities with future earnings and educational attainment. The first level of analysis was conducted using only a direct relationship between participation and the dependent variable. Control variables were then introduced in each section to extend the analysis.

Future Earnings

Future earnings are defined by a singular variable collected in the fourth follow-up of NELS:88 in 2000. This variable represents the current earnings rate of the individual respondent in 2000, as reported by the individual. The range of income stretched from \$1.00 to over \$500,000 annually. Individuals who earned less than \$1.00 were coded as losing money during the time period and were excluded from this study. The mean income for these respondents in 2000 was \$21,431.04; the median income was \$20,000.

Grade 10 Activities Participation

A linear regression analysis was conducted to evaluate the prediction of student participation in activities during tenth grade (1990) on future earnings, 10 years after the participation occurred (2000). Table 14 highlights the findings for six different variables used in the analysis. For the variable Total Activities Participation in grade 10, the correlation between activities participation and future earnings was .056. Less than 1% of the variance of future earnings was accounted for by its linear relationship with participation in activities in tenth grade.

Table 14
*Bivariate Linear Regression Analysis of the impact of Grade 10 Activities
 on Future Earnings*

Variable	r^2	Beta	Significance
Team Sports Participation	.016	.125	.000*
Individual Sports Participation	.015	.124	.000*
Total Sports Participation	.016	.126	.000*
Cheer / Dance Participation	.000	-.021	.049
Performing Arts Participation	.000	-.012	.254
Total Activities Participation	.003	.056	.000*

* $p < .001$

Grade 12 Activities Participation

A linear regression analysis was conducted to evaluate the prediction of student participation in activities during twelfth grade (1992) on future earnings, 8 years after the participation occurred (2000). Table 15 highlights the findings for six different variables used in the analysis. For the variable Total Activities Participation in grade 12, the correlation between activities participation and future earnings was .102. Approximately 1% of the variance of future earnings was accounted for by its linear relationship with participation in activities in twelfth grade.

Table 15
*Bivariate Linear Regression Analysis of the impact of Grade 12 Activities
 on Future Earnings*

Variable	r^2	Beta	Significance
Team Sports Participation	.014	.119	.000*
Individual Sports Participation	.013	.112	.000*
Total Sports Participation	.023	.152	.000*
Cheer / Dance Participation	.000	-.021	.000*
Performing Arts Participation	.000	-.017	.117
Total Activities Participation	.010	.102	.000*

* $p < .001$

High School Activities Participation

A linear regression analysis was conducted to evaluate the prediction of student participation in activities during high school on future earnings, 8 years after graduation (2000). Table 16 highlights the findings for six different variables used in the analysis. For the variable Total Activities Participation in high school, the correlation between activities participation and future earnings was .099. Approximately 1% of the variance of future earnings was accounted for by its linear relationship with participation in activities in high school.

Table 16
*Bivariate Linear Regression Analysis of the impact of Total Activities
 on Future Earnings*

Variable	r^2	Beta	Significance
Team Sports Participation	.015	.123	.000*
Individual Sports Participation	.017	.130	.000*
Total Sports Participation	.017	.129	.000*
Cheer / Dance Participation	.001	-.037	.000*
Performing Arts Participation	.000	-.013	.201
Total Activities Participation	.010	.099	.000*

* $p < .001$

Controlling for other Variables

In this study, several variables were used as control variables to add richness to the analysis. Each of these variables had roots in the individual student or the student's family situation in high school. These control variables included gender, race, socio-economic status, parent marital status in high school (measured in the second follow-up, 1992), and parent education level (measured in the second follow-up, 1992).

Gender

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on future earnings when controlling for gender. In analyzing each individual variable related to participation highlighted in Table 17, there was relatively little difference between males and females with respect to the impact of participation on future earnings.

Table 17
*Bivariate Linear Regression Analysis of the impact of Participation
 on Future Earnings * Control Variable = Gender*

Variable	Male (n=4149)			Female (n=4840)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.016	.125	.000*	.023	.150	.000*
Individual Sports Participation	.024	.155	.000*	.031	.177	.000*
Total Sports Participation	.014	.118	.000	.033	.180	.000*
Cheer / Dance Participation	.000	-.003	.847	.002	.047	.001
Performing Arts Participation	.008	.087	.000*	.009	.097	.000*
Total Activities Participation	.031	.177	.000*	.036	.189	.000*

* p<.001

Race

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on future earnings when controlling for race. In analyzing each individual variable related to participation highlighted in Table 18, the impact that participation had on whites with respect to future earnings was slightly more robust than non-whites.

Table 18
*Bivariate Linear Regression Analysis of the impact of Participation
 on Future Earnings * Control Variable = Race*

Variable	American Indian or Alaska Native (n = 70)			Asian or Pacific Islander (n = 555)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.001	.034	.775	.003	.053	.209
Individual Sports Participation	.050	.223	.061	.023	.152	.000*
Total Sports Participation	.002	-.049	.684	.011	.104	.014
Cheer / Dance Participation	.005	-.074	.540	.000	-.002	.971
Performing Arts Participation	.013	.114	.342	.009	.092	.029
Total Activities Participation	.009	.094	.434	.014	.117	.006

* p<.001

Variable	Black, not Hispanic (n=746)			White, not Hispanic (n=6062)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.001	.032	.390	.019	.137	.000*
Individual Sports Participation	.003	.057	.123	.026	.161	.000*
Total Sports Participation	.001	.037	.319	.022	.149	.000*
Cheer / Dance Participation	.000	-.002	.959	.004	.060	.000*
Performing Arts Participation	.002	.049	.182	.011	.103	.000*
Total Activities Participation	.006	.075	.039	.038	.195	.000*

* p<.001

Variable	Hispanic or Latino (n=1160)			More than one race (n=246)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.011	.106	.000*	.021	.146	.022
Individual Sports Participation	.005	.072	.014	.024	.155	.015
Total Sports Participation	.007	.084	.004	.027	.165	.009
Cheer / Dance Participation	.004	.062	.035	.002	.045	.479
Performing Arts Participation	.008	.090	.002	.013	.116	.069
Total Activities Participation	.026	.162	.000*	.044	.211	.001

* p<.001

Variable	r^2	Not White (n=2927)	
		Beta	Sig.
Team Sports Participation	.004	.064	.001
Individual Sports Participation	.016	.126	.000*
Total Sports Participation	.008	.090	.000*
Cheer / Dance Participation	.000	.008	.663
Performing Arts Participation	.006	.074	.000*
Total Activities Participation	.016	.127	.000*

* p<.001

Socio-Economic Status

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on future earnings when controlling for socio-economic status. In analyzing each individual variable related to participation highlighted in Table 19, the impact that participation had on students above and below the mean socio-economic status was virtually the same with respect to future earnings.

Table 19
*Bivariate Linear Regression Analysis of the impact of Participation
 on Future Earnings * Control Variable = Socio-Economic Status*

Variable	Below the Mean (64.42) (n=4036)			Above/Equal to the Mean (64.42) (n=4955)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.010	.099	.000*	.013	.116	.000*
Individual Sports Participation	.011	.106	.000*	.013	.112	.000*
Total Sports Participation	.011	.106	.000*	.014	.117	.000*
Cheer / Dance Participation	.001	-.034	.017	.002	-.045	.004
Performing Arts Participation	.000	.006	.679	.003	-.054	.001
Total Activities Participation	.007	.085	.000*	.005	.068	.000*

* p<.001

Parent Marital Status

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on future earnings when controlling for parental marital status while the individual was in high school. In analyzing each individual variable related to participation highlighted in Table 20, the impact that participation had on students in from families where the parents are married vs. unmarried was virtually the same with respect to future earnings.

Table 20
*Bivariate Linear Regression Analysis of the impact of Participation
 on Educational Attainment * Control Variable = Marital Status*

Variable	Single, Never Married (n=184)			Married (n=6346)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.011	.104	.158	.016	.125	.000*
Individual Sports Participation	.003	.054	.465	.020	.140	.000*
Total Sports Participation	.013	.116	.116	.017	.131	.000*
Cheer / Dance Participation	.003	.053	.471	.002	-.047	.000*
Performing Arts Participation	.000	-.001	.956	.001	-.028	.024
Total Activities Participation	.013	.114	.121	.009	.096	.000*

* p<.001

Variable	Divorced / Separated (n=1101)			Widowed (n=221)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.020	.142	.000*	.001	-.29	.667
Individual Sports Participation	.012	.112	.000*	.005	.70	.297
Total Sports Participation	.023	.150	.000*	.002	-.040	.549
Cheer / Dance Participation	.001	-.031	.301	.000	.017	.802
Performing Arts Participation	.000	.019	.525	.003	-.054	.424
Total Activities Participation	.011	.105	.000*	.003	-.054	.421

* p<.001

Variable	Living Like Married (n=67)			Not Married (n=2643)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.001	-.026	.831	.010	.101	.000*
Individual Sports Participation	.001	.029	.812	.001	.081	.000*
Total Sports Participation	.029	-.171	.164	.019	.138	.000*
Cheer / Dance Participation	.006	.080	.517	.000	-.013	.501
Performing Arts Participation	.015	.122	.321	.000	.016	.425
Total Activities Participation	.030	.174	.156	.007	.085	.000*

* p<.001

Parent Education Level

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on future earnings when controlling for parent education status while the individual was in high school. In analyzing each individual variable related to participation highlighted in Table 21, the impact that participation had on students from families where the parents are not college graduates vs. college graduates was virtually the same with respect to future earnings.

Table 21
*Bivariate Linear Regression Analysis of the impact of Participation
 on Future Earnings * Control Variable = Parent Education Level*

Variable	Didn't Finish HS (n=596)			HS Grad or GED (n=1370)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.000	.000	.999	.012	.111	.000*
Individual Sports Participation	.001	.028	.493	.011	.104	.000*
Total Sports Participation	.002	.048	.240	.008	.088	.000*
Cheer / Dance Participation	.000	-.018	.655	.000	.003	.904
Performing Arts Participation	.016	.125	.002	.004	.065	.017
Total Activities Participation	.010	.099	.016	.020	.141	.000*

* $p < .001$

Variable	HS, Some College (n=3352)			College Graduate (n=1459)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.011	.105	.000*	.010	.101	.000*
Individual Sports Participation	.018	.134	.000*	.004	.063	.017
Total Sports Participation	.014	.117	.000*	.011	.104	.000*
Cheer / Dance Participation	.003	.057	.001	.007	.084	.001
Performing Arts Participation	.007	.081	.000*	.002	.039	.136
Total Activities Participation	.024	.156	.000*	.015	.122	.000*

* p<.001

Variable	M.A. or Equal (n=903)			Ph.D., M.D., Other (n=551)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.005	.069	.037	.005	.073	.085
Individual Sports Participation	.017	.129	.000*	.012	.108	.011
Total Sports Participation	.008	.092	.006	.005	.072	.089
Cheer / Dance Participation	.001	.035	.293	.004	.064	.132
Performing Arts Participation	.000	.019	.577	.005	.071	.093
Total Activities Participation	.012	.108	.001	.017	.132	.002

* p<.001

Variable	Not a College Graduate (n=5320)			College Graduate (n=3669)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.011	.107	.000*	.012	.109	.000*
Individual Sports Participation	.016	.125	.000*	.011	.105	.000*
Total Sports Participation	.013	.114	.000*	.015	.122	.000*
Cheer / Dance Participation	.002	.041	.003	.003	.054	.001
Performing Arts Participation	.000	.088	.000*	.006	.079	.000*
Total Activities Participation	.026	.160	.000*	.024	.154	.000*

* p<.001

Cross Participation

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in athletic during high school on future earnings when controlling for participation itself. In analyzing the total athletic participation variable highlighted in Table 22, the impact that participation had on future earnings when controlling for cheer/dance and performing arts participation was more profound for those individuals that participated only in athletics.

Table 22
*Bivariate Linear Regression Analysis of the impact of Athletic Participation on Future Earnings * Control Variable = Participation*

Variable	Non-Participant			Participant		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Cheer / Dance Participation (n=8047)	.022	.149	.000*	.005	.069	.034
Performing Arts Participation (n=2732)	.024	.156	.000*	.010	.100	.000*

* p<.001

Summary

As demonstrated in the three sets of linear regression analyses, there is very little relationship between total activities participation in tenth grade, twelfth grade, and overall in high school and future earnings. There is however some indication that the value of participation in athletic endeavors outweighs that of participation in performing arts activities or cheer/dance activities. This can be gleaned through analysis of the correlations computed in athletic activities, where the correlation values were near .10 and in performing arts activities or cheer/dance activities where the correlation values were near .000. This is evident in all three levels of analysis when examining the correlation between participation

in sports (team, individual, total) and future earnings. When control variables were introduced, there was very little impact amongst the sub-groups.

It should be noted that when analyzing participation in cheer/dance and performing arts, the correlations that are present are best described as nonexistent or negative. While those negative correlations cannot be categorized as robust and some negative correlations and correlations close to zero are not significant at the 95% confidence interval, it should be noted that these correlations are consistently weak when compared to participation in athletic endeavors as related to future earnings. In addition, the data demonstrates that the impact of cheer/dance and performing arts participation on the influence of athletic participation on future earnings is less positive than simply athletic participation alone.

Educational Attainment

Educational attainment is defined by a singular variable collected in the fourth follow-up of NELS:88 in 2000. This variable indicates the level of degree beyond high school that an individual had received. This variable represents the educational attainment of the individual respondent in 2000, as reported by the individual. Table 23 demonstrates that over 40% of the respondents in this study had completed a bachelor's degree or higher in 2000 at the time of the fourth follow-up.

Table 23
Educational Attainment

Highest Level Completed	Frequency (N = 8991)	%
Some PSE, no degree attained	3408	37.9
Certificate / license	908	10.1
Associate's Degree	829	9.2
Bachelor's Degree	3399	37.8
Master's Degree / Equivalent	376	4.2
Ph.D. or Professional Degree	71	.8

Grade 10 Activities Participation

A linear regression analysis was conducted to evaluate the prediction of student participation in activities during tenth grade (1990) on educational attainment, 10 years after the participation occurred (2000). Table 24 highlights the findings for six different variables used in the analysis. For the variable Total Activities Participation in grade 10, the correlation between activities participation and educational attainment was .117. Just more than 1% of the variance of future earnings was accounted for by its linear relationship with participation in activities in tenth grade.

Table 24
*Bivariate Linear Regression Analysis of the impact of Grade 10 Activities
 on Educational Attainment*

Variable	r^2	Beta	Significance
Team Sports Participation	.015	.123	.000*
Individual Sports Participation	.018	.134	.000*
Total Sports Participation	.017	.130	.000*
Cheer / Dance Participation	.002	.042	.000*
Performing Arts Participation	.006	.077	.000*
Total Activities Participation	.014	.117	.000*

* $p < .001$

Grade 12 Activities Participation

A linear regression analysis was conducted to evaluate the prediction of student participation in activities during twelfth grade (1992) on educational attainment, 8 years after the participation occurred (2000). Table 25 highlights the findings for six different variables used in the analysis. For the variable Total Activities Participation in grade 12, the correlation between activities participation and educational attainment was .198. Approximately 4% of the variance of future earnings was accounted for by its linear relationship with participation in activities in twelfth grade.

Table 25
*Bivariate Linear Regression Analysis of the impact of Grade 12 Activities
 on Educational Attainment*

Variable	r^2	Beta	Significance
Team Sports Participation	.013	.113	.000*
Individual Sports Participation	.022	.148	.000*
Total Sports Participation	.030	.173	.000*
Cheer / Dance Participation	.003	.058	.000*
Performing Arts Participation	.010	.098	.000*
Total Activities Participation	.039	.198	.000*

* p<.001

High School Activities Participation

A linear regression analysis was conducted to evaluate the prediction of student participation in activities during high school on educational attainment, 8 years after graduation (2000). Table 26 highlights the findings for six different variables used in the analysis. For the variable Total Activities Participation in high school, the correlation between activities participation and educational attainment was .181. Approximately 3% of the variance of future earnings was accounted for by its linear relationship with participation in activities in high school.

Table 26
*Bivariate Linear Regression Analysis of the impact of Total Activities
 on Educational Attainment*

Variable	r^2	Beta	Significance
Team Sports Participation	.015	.124	.000*
Individual Sports Participation	.024	.154	.000*
Total Sports Participation	.019	.140	.000*
Cheer / Dance Participation	.002	.045	.000*
Performing Arts Participation	.005	.068	.000*
Total Activities Participation	.033	.181	.000*

* p<.001

Controlling for other Variables

In this study, several variables were used as control variables to add richness to the analysis. Each of these variables had roots in the individual student or the student's family situation in high school. These control variables included gender, race, socio-economic status, parent marital status in high school, and parent education level (measured in the second follow-up, 1992).

Gender

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on educational attainment when controlling for gender. In analyzing each individual variable related to participation highlighted in Table 27, the impact that gender had on educational attainment slightly favored females.

Table 27
*Bivariate Linear Regression Analysis of the impact of Participation
 on Educational Attainment * Control Variable = Gender*

Variable	Male (n=4149)			Female (n=4840)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.006	.075	.000*	.012	.112	.000*
Individual Sports Participation	.009	.093	.000*	.014	.119	.000*
Total Sports Participation	.006	.076	.000*	.019	.140	.000*
Cheer / Dance Participation	.001	-.023	.140	.001	.027	.062
Performing Arts Participation	.000	.010	.512	.000	.010	.484
Total Activities Participation	.007	.083	.000*	.012	.110	.000*

* p<.001

Race

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on educational attainment when controlling for race. In analyzing each individual variable related to participation highlighted in Table 28, the impact that participation had on whites with respect to educational attainment was slightly more robust than non-whites.

Table 28
*Bivariate Linear Regression Analysis of the impact of Participation
 on Educational Attainment * Control Variable = Race*

Variable	American Indian or Alaska Native (n = 70)			Asian or Pacific Islander (n = 555)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.020	.146	.234	.008	.089	.035
Individual Sports Participation	.136	.368	.002	.014	.118	.005
Total Sports Participation	.044	.210	.079	.003	.055	.195
Cheer / Dance Participation	.021	-.146	.224	.002	-.046	.274
Performing Arts Participation	.004	.061	.614	.002	-.045	.285
Total Activities Participation	.027	.165	.168	.001	.035	.415

* p<.001

Variable	Black, not Hispanic (n=746)			White, not Hispanic (n=6062)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.016	.127	.000*	.017	.131	.000*
Individual Sports Participation	.009	.097	.008	.017	.132	.000*
Total Sports Participation	.021	.147	.000*	.017	.130	.000*
Cheer / Dance Participation	.000	.009	.796	.001	-.036	.005
Performing Arts Participation	.002	.042	.249	.000	-.019	.146
Total Activities Participation	.014	.120	.001	.010	.099	.000*

* p<.001

Variable	Hispanic or Latino (n=1160)			More than one race (n=246)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.008	.087	.003	.009	.092	.148
Individual Sports Participation	.007	.081	.006	.026	.161	.011
Total Sports Participation	.011	.106	.000	.007	.086	.176
Cheer / Dance Participation	.002	-.047	.108	.000	.019	.772
Performing Arts Participation	.000	.001	.982	.002	.042	.515
Total Activities Participation	.006	.080	.006	.015	.122	.056

* p<.001

Variable	Not White Not White (n=2927)		
	r^2	Beta	Sig.
Team Sports Participation	.007	.084	.000*
Individual Sports Participation	.013	.115	.000*
Total Sports Participation	.011	.105	.000*
Cheer / Dance Participation	.002	-.045	.015
Performing Arts Participation	.000	-.010	.571
Total Activities Participation	.006	.076	.000*

* p<.001

Socio-Economic Status

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on educational attainment when controlling for socio-economic status. In analyzing each individual variable related to participation highlighted in Table 29, the impact that participation had on students in the above and below the mean socio-economic status was virtually the same with respect to future educational attainment.

Table 29
*Bivariate Linear Regression Analysis of the impact of Participation
 on Educational Attainment * Control Variable = Socio-Economic Status*

Variable	Below the Mean (64.42) (n=4036)			Above/Equal to the Mean (64.42) (n=4955)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.010	.098	.000*	.009	.097	.000*
Individual Sports Participation	.013	.115	.000*	.016	.127	.000*
Total Sports Participation	.013	.114	.000*	.012	.108	.000*
Cheer / Dance Participation	.001	.030	.032	.004	.061	.000*
Performing Arts Participation	.005	.071	.000*	.001	.035	.025
Total Activities Participation	.024	.156	.000*	.020	.140	.000*

* p<.001

Parent Marital Status

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on educational attainment when controlling for parental marital status while the individual was in high school. In analyzing each individual variable related to participation highlighted in Table 30, the impact that participation had on students in from families where the parents are married vs. unmarried was virtually the same with respect to educational attainment.

Table 30
*Bivariate Linear Regression Analysis of the impact of Participation
 on Future Earnings * Control Variable = Marital Status*

Variable	Single, Never Married (n=184)			Married (n=6346)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.011	.105	.156	.014	.118	.000*
Individual Sports Participation	.005	.068	.354	.025	.158	.000*
Total Sports Participation	.005	.070	.342	.019	.137	.000*
Cheer / Dance Participation	.002	.046	.018	.004	.061	.407
Performing Arts Participation	.000	-.017	.817	.009	.097	.000*
Total Activities Participation	.003	.056	.445	.034	.185	.000*

* p<.001

Variable	Divorced / Separated (n=1101)			Widowed (n=221)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.017	.128	.000*	.010	.099	.140
Individual Sports Participation	.010	.098	.001	.043	.208	.002
Total Sports Participation	.018	.135	.000*	.011	.106	.114
Cheer / Dance Participation	.001	.026	.381	.000	.011	.866
Performing Arts Participation	.012	.109	.000*	.001	-.025	.709
Total Activities Participation	.025	.159	.000*	.006	.075	.269

* p<.001

Variable	Living Like Married (n=67)			Not Married (n=2643)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.035	.187	.126	.012	.111	.000*
Individual Sports Participation	.004	.065	.599	.013	.116	.000*
Total Sports Participation	.004	.062	.615	.013	.113	.000*
Cheer / Dance Participation	.098	.313	.009	.002	.046	.018
Performing Arts Participation	.049	.221	.070	.004	.065	.001
Total Activities Participation	.061	.247	.042	.020	.143	.000*

* p<.001

Parent Education Level

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in activities during high school on educational attainment when controlling for parental marital status while the individual was in high school. In analyzing each individual variable related to participation highlighted in Table 31, the impact that participation had on students from families where the parents are not college graduates vs. college graduates was virtually the same with respect to educational attainment.

Table 31

*Bivariate Linear Regression Analysis of the impact of Participation on Educational Attainment * Control Variable = Parent Education Level*

Variable	Didn't Finish HS (n=596)			HS Grad or GED (n=1370)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.001	.036	.380	.017	.132	.000*
Individual Sports Participation	.001	.028	.490	.011	.104	.000*
Total Sports Participation	.003	.052	.203	.007	.084	.002
Cheer / Dance Participation	.007	-.081	.047	.001	-.034	.211
Performing Arts Participation	.001	-.023	.578	.001	-.028	.292
Total Activities Participation	.000	.021	.608	.006	.080	.003

* p<.001

Variable	HS, Some College (n=3352)			College Graduate (n=1459)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.009	.093	.000*	.022	.150	.000*
Individual Sports Participation	.018	.134	.000*	.004	.063	.017
Total Sports Participation	.014	.119	.000*	.017	.132	.000*
Cheer / Dance Participation	.002	-.040	.021	.002	-.044	.089
Performing Arts Participation	.000	-.010	.551	.003	-.050	.054
Total Activities Participation	.008	.092	.000*	.003	.052	.046

* p<.001

Variable	M.A. or Equal (n=903)			Ph.D., M.D., Other (n=551)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.010	.100	.003	.014	.120	.005
Individual Sports Participation	.017	.129	.000*	.012	.108	.011
Total Sports Participation	.018	.133	.000*	.006	.075	.077
Cheer / Dance Participation	.004	-.063	.060	.000	.0069	.883
Performing Arts Participation	.007	-.082	.014	.006	-.077	.070
Total Activities Participation	.006	.076	.023	.003	.054	.206

* p<.001

Variable	Not a College Graduate (n=5320)			College Graduate (n=3669)		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Team Sports Participation	.011	.103	.000*	.016	.128	.000*
Individual Sports Participation	.016	.125	.000*	.011	.105	.000*
Total Sports Participation	.013	.113	.000*	.015	.122	.000*
Cheer / Dance Participation	.001	-.038	.005	.001	-.038	.023
Performing Arts Participation	.000	-.010	.486	.001	-.034	.041
Total Activities Participation	.009	.092	.000*	.006	.076	.000*

* p<.001

Cross Participation

A linear regression analysis was conducted to evaluate the prediction of varying degrees of student participation in athletic during high school on educational attainment when controlling for participation itself. In analyzing the total athletic participation variable highlighted in Table 32, the impact that participation had on educational attainment when controlling for cheer/dance and performing arts participation was more profound for those individuals that participated only in athletics.

Table 32

*Bivariate Linear Regression Analysis of the impact of Athletic Participation on Educational Attainment * Control Variable = Participation*

Variable	Non-Participant			Participant		
	r^2	Beta	Sig.	r^2	Beta	Sig.
Cheer / Dance Participation (n=8047)	.019	.136	.000*	.001	.037	.254
Performing Arts Participation (n=2732)	.019	.137	.000*	.012	.111	.000*

* p<.001

Summary

As demonstrated in the three sets of linear regression analyses, there is very little relationship between total activities participation in tenth grade, twelfth grade, and overall in high school and educational attainment. There is however some indication that the value of participation in athletic endeavors outweighs that of participation in performing arts activities or cheer/dance activities, similar to the regression analyses of participation and future earnings. This is evident in all three levels of analysis when examining the correlation between participation in sports (team, individual, total) and educational attainment.

It should be noted that when analyzing participation in cheer/dance and performing arts, the correlations that are present are best described as nonexistent, though somewhat stronger than the correlations that existed in the analysis of future earnings. While some correlations were negative, neither these nor those close to zero can be categorized as robust and some are not significant at the 95% confidence interval, it should be noted that these correlations are consistently weak when compared to participation in athletic endeavors as related to educational attainment. In addition, the data demonstrates that the impact of cheer/dance and performing arts participation on the influence of athletic participation on educational attainment is less positive than simply athletic participation alone.

Findings from the Multiple Regression Model

For this statistical analysis, the student data related to participation in high school and educational attainment and earnings data from beyond high school were imported into SPSS for Windows. In addition, two other variables were added to highlight parent educational level and family income level during the second follow-up in 1992.

This model was used to study other variables beyond just participation activities, measured in different singular and combined format, in which an individual participates reported in relation to their future earnings and educational attainment. Rather, this model accounted for both participation and parents' educational attainment as it related to future earnings and educational attainment in one series of calculations. In a second series of calculations, it accounted for participation and family income as it related to future earnings and educational attainment. Finally, in a third calculation, it accounted for participation,

parents' educational attainment, and family income as it related to future earnings and educational attainment.

This model is different than the bivariate linear regression model in that it accounts for more than one independent variable. In this model, two or three independent variables were used in each calculation. The intent behind the use of this model was to provide further analysis on the impact of more than just the singular relationship between participation and future earnings and educational attainment.

Parents' Educational Attainment

A multiple regression analysis was conducted using the variable parents' educational attainment in addition to participation, measured on various different levels. The education level of the parents of the sample population was recorded in Table 4 and indicates that nearly 33% of all respondents in the sample population completed college. This variable represents the highest educational level of either parent in the family, as reported by the parent regarding their own educational level during the second follow-up in 1992 (when their student was in grade 12).

Future Earnings

A multiple regression analysis was conducted to evaluate how well participation and parents' educational attainment measures future earnings. The linear combination of participation and parents' educational attainment was significantly related to future earnings. The sample multiple correlation coefficient was .099, indicating that approximately 1.0% of the variance of the future earnings index in the sample can be accounted for by the linear combination of participation in high school activities and parents' educational attainment.

Although significantly correlated, it is important to note that the relative importance of the impact of parents' educational attainment is negligible on future earnings.

Table 33
Multiple Linear Regression Analysis of the impact of Participation and Parents' Educational Attainment on Future Earnings

R	R square	Adjusted R Square	R Square Change	F Change	Sig. F Change
.099	.010	.010	.010	44.692	.000*

Future Earnings (n=8991)	Beta	Sig.
High School Activities Participation	.098	.000*
Parents' Educational Attainment	-.010	.328

* p<.001

Educational Attainment

A multiple regression analysis was conducted to evaluate how well participation and parents' educational attainment measures educational attainment. The linear combination of participation and parents' educational attainment was significantly related to educational attainment. The sample multiple correlation coefficient was .185, indicating that approximately 3.4% of the variance of the future earnings index in the sample can be accounted for by the linear combination of participation in high school activities and parents' educational attainment. Although significantly correlated, it is important to note that the relative importance of the impact of parents' educational attainment is negligible on future educational attainment.

Table 34
Multiple Linear Regression Analysis of the impact of Participation and Parents' Educational Attainment on Educational Attainment

R	R square	Adjusted R Square	R Square Change	F Change	Sig. F Change
.185	.034	.034	.034	159.819	.000*

Educational Attainment (n=8991)	Beta	Sig.
High School Activities Participation	.180	.000*
Parents' Educational Attainment	-.039	.000*

* p<.001

Family Income

A multiple regression analysis was conducted using the variable total family income in addition to participation, measured on various different levels. Information highlighting to total family income was collected during the second follow-up in 1992. Table 3 highlights that 22.6% of the sample population lived in a family where the total income was less than \$25,000. Nearly one half of the sample population lived in a family with a total income in 1991 between \$25,000 and \$75,000.

Future Earnings

A multiple regression analysis was conducted to evaluate how well participation and total family income measures future earnings. The linear combination of participation and total family income was significantly related to future earnings. The sample multiple correlation coefficient was .099, indicating that approximately 1.0% of the variance of the future earnings index in the sample can be accounted for by the linear combination of participation in high school activities and total family income. Although significantly

correlated, it is important to note that the relative importance of the impact of total family income is negligible on future earnings.

Table 35

Multiple Linear Regression Analysis of the impact of Participation and Total Family Income on Future Earnings

R	R square	Adjusted R Square	R Square Change	F Change	Sig. F Change
.099	.010	.010	.010	44.257	.000*

Future Earnings (n=8991)	Beta	Sig.
High School Activities Participation	.099	.000*
Total Family Income	-.003	.758

* p<.001

Educational Attainment

A multiple regression analysis was conducted to evaluate how well participation and total family income measures educational attainment. The linear combination of participation and total family income was significantly related to future earnings. The sample multiple correlation coefficient was .184, indicating that approximately 3.4% of the variance of the future earnings index in the sample can be accounted for by the linear combination of participation in high school activities and total family income. Although significantly correlated, it is important to note that the relative importance of the impact of total family income is negligible on educational attainment.

Table 36

Multiple Linear Regression Analysis of the impact of Participation and Total Family Income on Educational Attainment

R	R square	Adjusted R Square	R Square Change	F Change	Sig. F Change
.184	.034	.034	.034	158.241	.000*

Future Earnings (n=8991)	Beta	Sig.
High School Activities Participation	.180	.000*
Total Family Income	-.034	.001

* p<.001

Parents' Educational Attainment and Family Income

A multiple regression analysis was conducted using the variables parents' educational attainment and total family income in addition to participation, measured on various different levels.

Future Earnings

A multiple regression analysis was conducted to evaluate how well participation, parents' educational attainment and total family income measures future earnings. The linear combination of participation, parents' educational attainment, and total family income was significantly related to future earnings. The sample multiple correlation coefficient was .099, indicating that approximately 1.0% of the variance of the future earnings index in the sample can be accounted for by the linear combination of participation in high school activities, parents' educational attainment, and total family income. Although significantly correlated, it is important to note that the relative importance of the impact of parents' educational attainment and total family income is negligible on future earnings.

Table 37
Multiple Linear Regression Analysis of the impact of Participation, Total Family Income, and Parents' Educational Attainment on Future Earnings

R	R square	Adjusted R Square	R Square Change	F Change	Sig. F Change
.099	.010	.010	.010	29.889	.000*

Future Earnings (n=8991)	Beta	Sig.
High School Activities Participation	.099	.000*
Total Family Income	.008	.000*
Parents' Educational Attainment	-.016	.283

* p<.001

Educational Attainment

A multiple regression analysis was conducted to evaluate how well participation, parents' educational attainment and total family income measures educational attainment. The linear combination of participation, parents' educational attainment, and total family income was significantly related to educational attainment. The sample multiple correlation coefficient was .099, indicating that approximately 1.0% of the variance of the future earnings index in the sample can be accounted for by the linear combination of participation in high school activities, parents' educational attainment, and total family income. Although significantly correlated, it is important to note that the relative importance of the impact of parents' educational attainment and total family income is negligible on educational attainment.

Table 38
Multiple Linear Regression Analysis of the impact of Participation, Total Family Income, and Parents' Educational Attainment on Educational Attainment

R	R square	Adjusted R Square	R Square Change	F Change	Sig. F Change
.186	.034	.034	.034	106.833	.000*

Future Earnings (n=8991)	Beta	Sig.
High School Activities Participation	.180	.000*
Total Family Income	-.014	.352
Parents' Educational Attainment	-.029	.048

* p<.001

Summary

These multiple regression models all demonstrated that a modest, statistically significant relationship did exist between participation, parents' educational attainment, and total family income when related to future earnings and educational attainment. However, in each case, the impact was negligible on both dependent variables and thus, no real, practical relationship existed.

Summary

Chapter 4 began with a description of the data collected for this study and the criteria used to select the participants. An analysis of three different statistical models followed. Chapter 5 reviews the implications of the findings from the statistical analysis and outlines recommendations for future research and practice.