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Which Matters Most? Perceptions of Family Income or Parental Education on Academic Achievement

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Abstract

The purpose of this study was to examine the impact of college students' perception of family income, parental education levels, and race on academic achievement. Ninety-four second-year college students from a small, liberal arts, college in New York City responded to the survey during the Fall of 2009. Of the respondents, 52 were female and 42 were male. The survey collected demographic data on student perception of family income, parental education levels, and race. Academic achievement was measured by gathering students' grade point averages. Findings in the research demonstrated that the education-level of the students' fathers had the greatest impact on academic achievement.

Keywords: college, ethnicity, parental educational levels, family income, education, race, undergraduate, academic achievement, small liberal arts, urban second-year students



For several decades, the persistence or retention of students has been a topic of concern for higher education administrators. According to Leppel (2002), it would take at least four first-year dropouts to match the revenue produced by one student who remained for the entire four-year period. It has often been less costly for colleges to put a greater emphasis on retention strategies as opposed to recruiting new students (Bozick, 2007; Leppel, 2002). Research has shown that family income has a positive influence on academic achievement (Titus, 2006; Walpole, 2003). Further research demonstrated that parental education levels as well as race and ethnicity influence academic achievement (Cokley & Chapman, 2008; Perna & Titus, 2005; Schlechter & Milevsky, 2010). Based on this frame of reference, the purpose of this study was to examine the impact of college students' perceptions of family income, parental education levels, and race on academic achievement.

Theoretical Framework

Higher levels of family income have been identified as having a positive effect on student persistence and academic achievement. While researchers vary in their understanding of this finding, one popular observation has been that students from lower income families had to work more than students from higher income families; more hours dedicated to employment equated with fewer hours dedicated to school work. Those who were fortunate enough to utilize government financial aid typically had to negotiate a complex process for receiving it. These financial pressures caused many low-income college students to disengage from school or drop out (Bozick, 2007; Leppel, 2002).

Walpole (2003) found that students from low socioeconomic families were less engaged in academics because they worked more and studied less than students from high socioeconomic families. Low socioeconomic students were less likely to participate in student study groups. Both Walpole (2003) and Titus' (2006) suggested that college students from high-income families outperformed students from low-income families academically by grade point average (GPA). Stinebrickner and Stinebrickner's (2003) found that students from high-income families had an 18% higher probability of successfully completing more than six semesters than students from low income families. This was supported by Nam and Huang (2009) findings that family income and liquid assets had a significant impact on college attendance and graduation rates.



In contrast to studies that showed the negative effect of low family income on academic achievement, Terenzini, Cabrera, and Bernal (2001) found that more similarities than differences in overall grade performance, when comparing students from low and high socioeconomic backgrounds. They observed that the addition of factors such as institution type and length of enrollment increased this variation (Terenzini et al., 2001). Paulson and St. John (2002) found that academic performance and persistence rates of students with low socioeconomic backgrounds were higher than their high socioeconomic counterparts, however, many of those from the low socioeconomic group were older than those from the high socioeconomic group, which may have impacted their findings.

Clearly student achievement may be impacted by a complex set of factors. Cokley and Chapman (2008) found that racial and ethnic identity predicted academic achievement among African American college students at a historically Black university. Perna and Titus (2005) examined differences in college-going rates among racial and ethnic groups and identified parental involvement as being important in promoting college enrollment among racial and ethnic groups that were underrepresented in higher education. Stinebrickner and Stinebrickner (2003) reported that other circumstances regarding family background were significant. They found that the impact of family income declined when at least one of the students' parents had a college degree (Stinebrickner & Stinebrickner, 2003). Rowan-Kenyon, Bell, and Perna's (2008) highlighted the importance of encouragement from college-educated parents in students' collegiate outcomes.

Suizzo and Stapleton (2007) defined parental involvement as the level of support that parents give to their child's learning and development. This support included learning inside as well as outside of the classroom setting, engaging in school functions, serving on committees, maintaining contact with teachers, and participating in home-based support. Most parents practiced home-based support through learning activities such as reading, discussions pertinent to school and family, and communicating expectations and goals (Suizzo & Stapleton, 2007). Parental involvement in a students' education before college influenced the students' pursuit of education, and has been shown to positively influence academic achievement. Furthermore, parents' beliefs and expectations about their children's intellectual abilities were predictors of academic performance (Suizzo & Stapleton, 2007).



Students' preparedness and academic performance were connected to their experiences outside of the classroom and within their home (Durand, 2011). Specifically, students' home environments and their parents' involvement in their education varied due to sex, age, mother's psychological health and education level (Suizzo & Stapleton, 2007).

Durand (2011) highlighted mothers as the primary source of learning, while implementing and maintaining socialization, beliefs and values. In a qualitative study, six mothers described their children's routine chores, schedules, and choices for leisure activities under the condition that all homework assignments were complete. Five out of six mothers articulated long-term goals for their children, and approximately one-third of the mothers who reported their long-term goals for their children referenced the importance of graduating high school or going to college to gain professional advantages (Durand, 2011). The mothers commented that given these choices, their children would have more independent lives than their own mothers had. In contrast, one mother expressed her concern to raise a moral child rather than an intellectual child (Durand, 2011).

Kalsner (1991) suggested that high academic and career goals, along with the support of parents, increase the students' chance of graduation. According to Tinto's (1975) interactionist model, incoming college students already possessed traits that determine their commitment to learning (as cited in Kisar & Price, 2008). Haveman and Wolfe (1995) supported this idea as they noted that less-educated parents may be less effective in supporting their child's academic achievement and career goals (as cited in Flouri, 2006). Ortiz and Dehon (2008) concurred with the importance of parental education levels and the impact on college student academic achievement, however, they found that the mothers' education level was more significant at predicting student academic achievement than the fathers' educational level.

Feinstein and Symons (1999) stated that parental support was the most influential factor contributing to educational attainment (Flouri, 2006). Further research suggested the impact of paternal and maternal influence on children's schooling. Flouri and Buchanan (2004) found "Father involvement and mother involvement at age seven independently predicted educational attainment by age 20" (p. 141). Crockett, Eggebeen, and Hawkins (1993) reported that fathers who are involved in their child's education typically supported them financially, which enhanced education opportunities and resources. Cabrera, Tamis-LeMonda, Bradley, Hofferth and Lamb



(2000) concurred that in families where fathers were involved, mothers were commonly involved, which resulted in a support system that fostered educational attainment and positive long-term contributions (as cited in Flouri, 2006).

Data Sources

The data for this study was from a larger study done by Howell (2010). Permission to conduct the study was obtained through both the Internal Review Board for the Protection of Human Subjects in Research (IRB) of the doctoral program and the college in which the study was conducted. The setting for this study was a small liberal arts college in New York City. This urban campus was religiously affiliated and had approximately 2,200 full time undergraduate students, with 44% male and 56% female students. Of the 2,200 students who identified their race on the fall 2009 enrollment survey, 41% were White, 15% were Black or African-American, 15% Hispanic, 4% were Asian, and 7% reported that they were not citizens of the United States of America.

This study focused on approximately 400 full-time second year students enrolled in the fall 2009 semester. Each student was sent a letter informing him or her about the research study, the fact that it was voluntary, anonymous, and confidential. A week later an electronic invitation was sent to both their college and personal email account. The instructions included a link to the web-based survey. If a student decided to participate and logged onto the survey, the system automatically generated a random pseudonym to maintain anonymity.

Method

In addition to demographic information, the survey asked participants their perception of their family income, the level of education of their mother and father, their race, and their estimated grade point average (GPA).

Perception of family income. Upon evaluation of the students' perception of their family's income most ($n = 41$, 43.6%) felt that their household income allowed for a small amount of savings, 25 (26.6%) felt that their families lived day-to-day, 14 (14.9%) felt that their families did not have enough income, and the remaining 12 (12.8%) felt that their families had plenty of money.



Parents education levels. Seventy-seven (81.9%) of the participants provided information regarding their fathers' level of education. Nineteen participants (20.2%) stated their fathers were in the 12th grade or less; 18 participants (19.1%) reported their father had graduated from high school or received their GED; 15 participants (16%) stated their fathers had some college experience, obtained their associate's degree, or completed a technical training program; and 25 participants (23.4%) reported their fathers had received a bachelor's degree. In comparison, the mean level of education of the mothers was slightly lower than the fathers. A total of 83 participants (88.3%) disclosed their mothers' level of education. Twenty-one participants (22.3%) reported their mothers were at a 12th grade level or less; 24 participants (25.5%) stated their mothers had graduated from high school or had obtained her GED; 13 participants (13.8%) said their mothers completed some college, obtained her associate's degree, or completed a technical training program; and 25 (26.6%) participants reported their mothers received their bachelor's degree.

Participants sex and race. Of the 404 students who were sent an invitation, 94 completed the survey. The participants included 42 (45%) males and 52 (55%) females, of which 48 (51%) were White, 19 (20%) were Black or African American, 13 (13%) were Hispanic, three (3%) were Asian, eight (8%) identified themselves as two or more races, and three (3%) preferred not to answer.

To ascertain whether the mean change in student's GPA score differed among their mother's level of education, father's level of education and perception of their family income, the researchers specifically looked for differences in the parents' level of education, the students' perception of family income and its effect on academic achievement. Three one-way ANOVAs were applied to indicate if the parents' level of education and the student's perception of family income influenced academic achievement.

Results

Crosstab analysis was made and no connection was found between race and the mother's level of education, father's level of education, and the student's perception of family income.



A one-way analysis of variance was conducted to evaluate the difference among a student's parental level of education, their perception of family income, and academic achievement. Six survey choices were offered for mother and father's level of education, including 12th grade or less, high school graduate or GED, some college or technical school, bachelor's degree, graduate degree, and prefer not to answer; because the small sample size o for statistical analysis only four levels were utilized (12th grade or less, high school graduate or GED, some college or technical school, and bachelor's degree). Perception of family income included four levels: is not enough, allows us to live day by day, allows us to have a small savings. One-way analysis of variance was used to calculate the mean differences for both parental levels of education and perception of family income on academic achievement. The ANOVA was significant $F(3,69) = 3.82, p = .01$ between the father's level of education and academic achievement. The student's average GPA was highest for those whose fathers had bachelor's degrees and lowest for the completion of some college, associate's degree, or technical training (Table 1).

Table 1

Father's Level of Education and Academic Achievement (GPA)

Highest Education – Father	Mean
12 Grade or Less	3.1405
High School Grad or GED	3.2794
Some College or Associates Degree or Tech Training	2.8914
Bachelor's Degree	3.5395
Total	3.2473



The strength of the relationship, as assessed by η^2 , was strong, with the father's level of education accounting for 14% of the variance of the student's academic achievement. There was no significance between academic achievement and the mother's level of education ($p = .27$) and perception of family income ($p = .24$) as demonstrated in Table 2.

Table 2

Parental Levels of Education, Perception of Family Income and Academic Achievement (On way ANOVA)

Source	df	Mean Square	F	<i>p</i>	η^2
Father's Level of Education	3	1.296	3.822	.014	.143
Mother's Level of Education	3	.540	1.338	.268	.049
Perception of Family Income	3	.556	1.427	.240	.047

Follow-up tests were conducted to evaluate pairwise differences among the means between the father's level of education and academic achievement. Post hoc comparisons were conducted with the use of the Scheffe test as there was no significant difference ($p = .1$) in the test of homogeneity of variance. There was a significant difference in the means between the fathers with some college experience and those who had attained their bachelor's degree, but no significant difference between the other groups. Fathers who had attained their bachelor's degree had a greater mean and a positive effect on the student's level of academic achievement in college than the ones who had no college or associate degree. The 95% confidence interval for the pairwise differences, as well as the means and standard deviations for the father's level of education are reported in Table 3.



Table 3

Fathers' Level of Education and Academic Achievement (Post-Hoc Comparison – Scheffe)

Highest Level of Education - Father	Highest Level of Education - Father	Mean Difference	Std. Error	<i>p</i>
12 grade or less	High School Grad or GED	-.1389	.19151	.913
	Some College or Associates Degree or Tech Training	.2491	.20508	.689
	Bachelor's Degree	-.3990	.18235	.198
	High School Grad or GED	.1389	.19151	.913
High School Grad or GED	12 grade or less	.1389	.19151	.913
	Some College or Associates Degree or Tech Training	.3880	.20748	.329
	Bachelor's Degree	-.2601	.18505	.580
Some College or Associates Degree or Tech Training	12 grade or less	-.2491	.20508	.689
	High School Grad or GED	-.3880	.20748	.329
Degree or Tech Training	High School Grad or GED	-.3880	.20748	.329
	Bachelor's Degree	-.6481	.19906	.019

Scholarly Significance

The impact that family income has on student achievement is not as evident as the researchers thought. Many studies have now disagreed with the popular belief that college students from high socioeconomic families will outperform students from low socioeconomic families on academic achievement. These studies focus on other underlying factors such as the number of work hours per week, institution type, length of enrollment, age of the student, and family background (Paulsen & St. John, 2002; Terenzini et al., 2001). Stinebrickner and Stinebrickner (2003) found that income was less significant with increased parental educational attainment. This coincides with the results of the present study, that a student's perception of family income does not impact academic achievement. In fact, fathers who support their child's



education leads mothers to follow and will often result in financial support further enhancing opportunities and resources in education (Flouri, 2006; Flouri & Buchanan, 2004).

Crockett et al.'s (1993) findings contradicted the findings in this study in that they found maternal educational attainment impacts student achievement. According to the results, paternal support of education significantly impacts academic achievement while the maternal education level has no significance. However, Cabrera et al. (2000) showed that families with active fathers fostered maternal involvement in the household resulting in a support system that fosters educational attainment and positive long-term contributions (Flouri, 2006).

While studies have shown that family income influenced student achievement (Walpole, 2003; Titus, 2006), the results of the present study showed no significant difference. Contrary to research that identified race and ethnicity as affecting academic achievement (Cokley & Chapman, 2008; Perna & Titus, 2005), results in this study did not establish a connection between race and academic achievement. The findings concurred with prior literature that showed the importance of parental education levels and the impact on college student achievement. These results differed in that the fathers' education level was significantly related to student's academic achievement, whereas no such relationship was observed with the mothers' education level (Ortiz & Dehon, 2008).

These findings are important to high school guidance departments and institutions of higher education. High school guidance counselors should provide added support or resources to college bound students whose parents, particularly the fathers, have no college education. Similarly, colleges should consider partnering with local high schools to provide mentors to students in this category to recruit and successfully retain them.

Limitations

The selected population of second-year college students was limited to a small, liberal arts college in New York City. The results cannot be generalized to other colleges or universities that do not have similar demographics to the one selected. Another limitation of this study was that the students self-reported their demographic data, instead of it being collected from the college's student database. In the self-reported data, Whites were overrepresented by 10% and



Blacks were overrepresented by 5%. Lastly, it is unknown if the students' parents were living together or separate at the time of the study.



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