Perna, L. W. (2004). Understanding the decision to enroll in graduate school: Sex and racial/ethnic group differences. The Journal of Higher Education, 75(5), 487-527.

Missing data
The analyses are limited by the magnitude of missing data. The variables with the largest shares of missing data are those measuring the direct contribution of the parent to the student's education (17% of the cases) and an individual's values toward additional education and aspects of future work (14% of the cases). Listwise deletion would reduce the analytic sample from 9,241 cases to 5,340 (adjusted weighted sample sizes) and result in a sample that is not representative of the population of 1992–93 bachelor's degree recipients. Although women and men are equally likely to be excluded because of listwise deletion of missing data, the likelihood of being excluded varies by racial/ethnic group, with missing data more common among individuals of other or unknown race/ethnicity than among the sample as a whole. Individuals who enrolled in a doctoral program also appear to be more likely than other students to be missing data for at least one variable.

Although researchers disagree on the minimum number of cases that is required per independent variable, researchers generally agree that larger sample sizes will generate more stable parameter estimates and more accurate $\chi 2$ distributions (Peng et al., 2002). To avoid the substantial reduction in sample size that would result from listwise deletion of missing data and to account for the tendency of cases to be missing data for more than one independent variable, the analyses include a single independent variable that reflects a "tendency to have missing data" (Cohen & Cohen, 1983). This variable is calculated as the number of independent variables on which data are missing. Mean scores are imputed for cases that are missing data for either of the two continuous variables. While preserving sample sizes, this treatment of missing values may result in an underestimation of the standard errors. Therefore, the use of a rigorous threshold of statistical significance ($p < .001$) not only corrects for the design effects (described above) but also reduces the possibility that the parameters for these variables falsely appear to be statistically significant (Type I error).
FROM PAGE 499 IN PERNA.

Strayhorn, T. L. (2005). More than money matters: An integrated model of graduate student persistence (Doctoral dissertation, Virginia Tech).

Missing Data
The analyses in the study are limited by the magnitude of missing data. The variables with the largest share of missing data are those pertaining to amount of educational debt (39% of the cases) and values toward additional education and future work (24% of the cases). List wise deletion would reduce the analytic sample from 3,328 cases to less than 2,500 (adjusted weighted sample sizes) and result in a sample that is not representative of the population of 1992-93 bachelor's degree recipients who enrolled in graduate study by 1997. Although men and women are equally likely to be excluded because of list wise deletion of missing data, the likelihood of being excluded varies by race/ethnicity, with missing data more common among non-White individuals than among the sample as a whole. Individuals who enrolled in a doctoral program also appear to be more likely than other students to be missing data for at least one variable.

Researchers disagree on the minimum number of cases that is required per independent variable, but generally agree that larger sample sizes will generate more stable parameter estimates and more accurate X2 distributions (Peng et al., 2002). To avoid the substantial reduction in sample size that would result from list wise deletion of missing data and to account for the tendency of cases to be missing data for more than one independent variable, the researcher took several steps to reduce the number of missing cases (Cohen & Cohen, 1983). First, mean scores are imputed for cases that are missing data for the continuous variables. The continuous variables in the present study include: B2TOTAID, B2GRSCDB, B2TOTUDB, B2OWENFM, B2EDTOT, and B2NDEPEN. These variables relate to the total aid received for graduate school, amount borrowed for graduate school (non family sources), total undergraduate debt, amount of education debt still owed, total education debt (undergraduate and graduate), and the number of children who are dependents respectively. While preserving sample sizes, this treatment of missing values may result in an underestimation of the standard errors. Therefore, the use of a rigorous threshold of statistical significance ($p < .01$) not only corrects for the design effects but also reduces the possibility that the parameters for these variables falsely appear to be statistically significant (Type I error).
FROM PAGES 75-78 OF DISSERTATION.

Bachelor's degree recipients who enroll in doctoral degree programs appear to be different from other bachelor's degree recipients in terms of their undergraduate major field, cumulative undergraduate grade-point average, Carnegie classification of bachelor's degree-granting institution, and location of bachelor's degree-granting institution. Individuals who enroll in doctoral degree programs appear to be similar to individuals who enroll in first-professional degree programs and different from those in other groups in terms of such variables as the total amount borrowed for their undergraduate education, marital status in 1993, number of dependents in 1993, income and dependency status, SAT/ACT quartile, age, parents' education, tuition at the undergraduate institution, and total direct monetary support from parents for undergraduate education.
FROM PAGE 501 IN PERNA.

Descriptive analyses (Table 7) suggest that bachelor's degree recipients who enroll in doctoral degree programs are different from bachelor's degree recipients who enroll in master's degree programs in terms of their undergraduate major field, undergraduate GPA, and the Carnegie classification of bachelor's degree-granting institution. Individuals who enroll in doctoral degree programs appear to be more akin to individuals who enroll in first-professional degree programs. For this reason, first-professional students are collapsed with doctoral students in the analyses.
FROM PAGES 71-72 OF DISSERTATION

The NPSAS:93 utilized a two-stage stratified sample design in which 1,243 eligible postsecondary educational institutions were first identified, and then students attending the 88% of the institutions that responded with lists of students were selected (Green, Myers,Veldman, & Pedlow, 1999).

Data were collected from 73% of the 16,316 students who were initially identified as bachelor's degree recipients. Subsampling of nonrespondents increased the sample size to 12,478. Further review of the interview and transcript data revealed that only 11,192 of the cases were eligible for inclusion in B&B (Green et al., 1999). The B&B:93/97 includes data for 9,274 students, or 83% of the 11,192 students in the base-year sample, who responded to all three data collections (McCormick et al., 1999). The sample used in this study is limited to the 9,241 cases that have data for the dependent variable, highest-degree program enrolled in by 1997.
FROM PAGE 492 OF PERNA

The NPSAS:93 used a two-stage stratified sample design in which 1,234 eligible postsecondary educational institutions were first identified, and then students attending the 88% of the institutions that responded with lists of students were selected (Green, Meyers, Veldman, & Pedlow, 1999).

Data were collected from 73% of the 16,316 students who were initially identified as bachelor's degree recipients. Sub-sampling of non-respondents increased the sample size to 12,478. Further review of the interview and transcript data revealed that only 11,192 of the cases were eligible for inclusion in B&B (Green, Meyes, Veldman, & Pedlow, 1999). The B&B:93/97 includes data for 9,274 students, or 83% of the 11,192 students in the base-year sample, who responded to all three data collections (McCormick et al., 1999). The sample used in this study is limited to the 3,328 bachelor's degree recipients who enrolled in graduate school by 1997. These cases have valid data for the dependent variable, PERSIST.
FROM PAGE 80 OF DISSERTATION

The B&B:93/97 panel weight is appropriate for approximating the population of 1992–93 bachelor's degree recipients in the longitudinal sample. To minimize the influence of large sample sizes on standard errors while also correcting for the oversampling of some groups, each case is weighted by the B&B:93/97 panel weight divided by the average weight for the sample (Thomas & Heck, 2001). To correct for the design effects of the B&B:93/97 that are associated with the nested nature of the data (i.e., bachelor's degree recipients selected from within selected institutions), a rigorous threshold of statistical significance ($p < .001$) is used to interpret the results (Thomas & Heck, 2001).
FROM PAGE 492 OF PERNA

The B&B:93/97 panel weight is appropriate for approximating the population of 1992-1993 bachelor's degree recipients in the longitudinal sample. To minimize the influence of large sample sizes on standard errors while also correcting for the oversampling of some groups (i.e., those in teaching fields) each case was weighted by the B&B:93/97 panel weight divided by the average weight for the sample (Thomas &Heck, 2001). Several quantitative experts in the field of higher education agreed with the researcher's procedure (D'Amico, 2004, personal communication; Perna, 2005, personal communication).
FROM PAGE 82 OF DISSERTATION

To correct for the design effects of the B&B:93/97 survey that are associated with the nested nature of the data (i.e., bachelor's degree recipients selected from within selected institutions), a rigorous threshold of statistical significance ($p < .01$) was used to interpret the results (Thomas & Heck, 2001).
FROM PAGE 83-84 OF DISSERTATION

Because of the categorical nature of the dependent variable, a multinomial logit model, a special case of the general log-linear model, is used to examine the relationships between sex and race/ethnicity and postbaccalaureate enrollment status after controlling for other variables. Multinomial logit models estimate the log-odds of one outcome occurring relative to the baseline category. In these analyses, no enrollment by 1997 is the baseline category. If the baseline category is j, the model for the ith category (e.g., enrollment in a master's degree program) is:

EQUATION HERE BUT NOT INCLUDED

The logistic coefficients that result from this equation may be interpreted as the change in log odds that is associated with a one-unit change in the independent variable. The interpretation of the multinomial logit coefficients is facilitated by the use of odds-ratios, as described by the following equation:

EQUATION HERE BUT NOT INCLUDED

The odds-ratio represents the change in the odds of a particular type of enrollment relative to the reference category (not enrolled) that is associated with a one-unit change in a particular independent variable holding constant all other variables (Peng, So, Stage, & St. John, 2002). An odds-ratio greater than one represents an increase in the likelihood of enrolling in a particular type of post-baccalaureate program relative to not enrolling, whereas an odds-ratio less than one represents a decrease in the likelihood of enrolling in the program. The two continuous variables, the importance of labor market success and the importance of the quality of work life, are entered into the model as covariates. The test of whether a parameter is different from zero is based on two statistics that are generated by SPSS version 10.0: the likelihood ratio test and the Wald statistic (Peng et al., 2002). The likelihood ratio test is used to determine if a parameter is related to the probability of post-baccalaureate enrollment overall, and, if so, the Wald statistic is used to determine if a parameter is related to particular types of postbaccalaureate enrollment. **As suggested by others** (Cabrera, 1994; Peng et al., 2002), several indicators are used to evaluate the model. **While not completely comparable** to the R2 in ordinary least-squares regression, the McFadden pseudo-R2 indicates the strength of the relationship between the outcome variable and the independent variables (Peng et al., 2002). **The percentage of cases that is correctly classified,** the ratio of scaled deviance (G2) to its degrees of freedom, and the model chi-square provide three additional indicators of model fit (Cabrera, 1994; Peng et al., 2002). The model chi-square tests the difference in the -2 log likelihood between the final model and a model that includes the intercept only. The change in scaled deviance provides an indication of the improvement in fit that is associated with the inclusion of additional predictors (Cabrera, 1994).
FROM PAGE 497 IN PERNA

Given the nature of the dependent variable, a binomial logistic model, a special case of the general log-linear model, was used to examine the relationships between the dependent variable and the independent variables included in the integrated model developed for the present study (Kleinbaum, 1994). In addition, the binomial logistic model was used to explore the relationship between sex, race/ethnicity, and persistence status controlling for other variables in the integrated model. Binomial logistic models estimate the log-odds of an outcome occurring relative to the baseline category. In the present study, failed to persist (non-persister) by 1997 is the baseline category. If the baseline category is j, the model for the ith category (e.g., persister) is:

EQUATION HERE BUT NOT INCLUDED

The logistic regression coefficients taken from this equation may be interpreted as the change in log odds associated with one unit change in the independent variable (Kleinbaum, 1994). The interpretation of the binomial logistic coefficients is made easier by the use of odds-ratios, as outlined by the following equation (Pampel, 2000):

EQUATION HERE BUT NOT INCLUDED

The odds-ratio reflects the change in the odds of a particular outcome (persistence) relative to the reference category (non-persistence) that is associated with a one unit change in a single independent variable holding all other variables constant (Pampel, 2000: Peng, So, Stage, & St. John, 2002). An odds ratio greater than one represents an increase in the odds or likelihood of persisting relative to not persisting in graduate school. An odds-ratio less than one presents a decrease in the odds or likelihood of persisting relative to not persisting in graduate school.
As suggested by others (Andrieu, 1991; Cabrera, 1994; Olsen, personal communication, December 15, 2004; Peng et al., 2002), several indicators are used to evaluate the integrated model. **Though not completely comparable** to the R2 computed in ordinary least squares regression, several pseudo-R2 statistics indicate the strength of the relationship between the outcome variable and the independent variables (Peng et al., 2002). In addition, the **percentage of cases that are correctly classified**, the ratio of scaled deviance (G2) to its degrees of freedom, and the model chi-square are three measures of model fit (Cabrera, 1994; Peng et al., 2002). The model chi-square "tests the difference in the -2 log likelihood between the final model and a model that includes the intercept only" (Perna, 2004, p. 498). The change in scaled deviance provides a measure of the improvement in fit that is associated with the inclusion of other predictor variables (Cabrera, 1994).
FROM PAGE 85 OF DISSERTATION

This research contributes to our understanding of the sources of the underrepresentation of women, African Americans, and Hispanics among doctoral and professional degree recipients by examining one phase of the educational pipeline: the enrollment of bachelor's degree recipients in different types of post-baccalaureate educational programs.
PAGE 488 IN PERNA

Building on research that has examined racial/ethnic group differences in undergraduate enrollment (Perna, 2000), this research develops and tests the appropriateness of an expanded econometric framework for understanding sex and racial/ethnic group differences in post-baccalaureate enrollment. A traditional econometric perspective assumes that individuals make decisions by weighing the monetary and nonmonetary costs against the monetary and nonmonetary benefits for all possible alternatives and then selecting the alternative that maximizes utility with respect to individual preferences, tastes, and expectations (Ehrenberg, 1991; Manski & Wise, 1983). Although the role of preferences, tastes, and expectations is generally ignored in most econometric approaches to decision making, this research explores the value of expanding a traditional econometric approach to include measures of social and cultural capital as proxies for individual expectations, preferences, tastes, and uncertainty about the graduate school enrollment decision (Paulsen & St. John, 2002; Perna, 2000; St. John & Asker, 2001).
PAGE 488 IN PERNA

Building on the suggestion of others (Paulsen & St. John, 2002; Perna, 2000; St. John & Asker, 2001) that traditional econometric frameworks be expanded to include aspects of social and cultural theories, the conceptual model that is used in this study assumes that the decision to enroll in a post-baccalaureate program is a function of sex, race/ethnicity, expected costs and benefits, financial and academic resources, and cultural and social capital. Five racial/ethnic groups are considered in the analyses: Asian, Black, Hispanic, White (reference group), and other. The "other" racial/ethnic group is comprised of American Indians/Alaskan Natives, nonresident aliens, and students with unknown or other race/ethnicity, categories with too few cases to be examined separately.2
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This research contributes to our understanding of the under-representation of certain groups (e.g., minorities) among master's and doctoral degree recipients by examining two aspects of the educational pipeline: the enrollment of baccalaureate degree recipients in post-baccalaureate educational programs and persistence in post baccalaureate programs.
PAGE 126 FROM DISSERTATION

This study proposed and tested a conceptual model for predicting graduate student persistence that is based on an expanded economic theoretical framework consisting of economic, academic, and non-academic variables. Traditional economic perspectives assume that individuals make decisions by weighting the monetary and non-monetary costs against the monetary and non-monetary benefits for all possible alternatives. In this frame, the individual selects the alternative that maximizes utility with respect to individual preferences, tastes, and expectations (Ehrenberg, 1991; Manski & Wise, 1983; Perna, 2004).

In most cases, the role of aspirations and values is generally ignored in econometric approaches to decision making. This research explores the value of expanding a traditional econometric approach to include measures of human, social, and cultural capital as proxies for individual values, aspirations, and exposure to resources that promote persistence in graduate school (Paulsen & St. John, 2002; Perna, 2000; St. John & Asker, 2001).

The conceptual model used in this study assumes that the decision to persist in graduate school is a function of sex, race/ethnicity, expected costs and benefits, financial factors, prior academic achievement, and non-academic factors related to one's social and cultural capital. In addition, a number of background variables are assumed to be related to graduate student persistence (e.g., age, marital status, parental status). Overall, the model can be described as an expanded econometric model that integrates concepts of human, social, and cultural capital using economic, academic, and non-academic variables. People make decisions on the basis of their human capital presumably. Human capital theory focuses on the characteristics of individuals. It refers to the individual's investments in their own personal development such as the amount and quality of one's education and training (Becker, 1993).
PAGES 55-56 IN DISSERTATION

Financial resources may also influence the assessment of the benefits and costs of post-baccalaureate enrollment (Becker, 1962). One measure of financial resources is the amount of undergraduate educational debt. Because about one-half of 1992–93 bachelor's degree recipients did not borrow to pay the costs of their undergraduate education and because the distribution of the amount borrowed is positively skewed even when only individuals who borrowed are considered, undergraduate borrowing is treated as an ordinal variable: did not borrow (54% of cases); borrowed less than $4,000 (10% of cases); borrowed between $4,000 and $7,999 (12% of cases); borrowed between $8,000 and $12,599 (12% of cases); and borrowed $12,600 or more (12% of cases, reference category). The levels reflect the lowest to the highest quartiles of the amount borrowed among individuals who borrowed.
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The economic variables included in this study relate to financial resources for both undergraduate and graduate study. Undergraduate debt load is one measure of financial resources. Because approximately one-half of 1992-1993 bachelor's degree recipients did not borrow to pay for college and because the amount borrowed is not evenly distributed among the sample, undergraduate debt load is coded as an ordinal variable: did not borrow (53% of sample); borrowed less than $4,000 (10%); borrowed between $4,000 and $7,999 (13%); borrowed between $8,000 and $12,599 (12%); and borrowed $12,600 or more (13%). The levels reflect the lowest to highest quartiles of the amount borrowed among those who borrowed.
PAGE 56 IN DISSERTATION

One way social and cultural capital may influence expectations, preferences, and uncertainty about graduate enrollment is through the provision of knowledge and information about the costs and benefits (DiMaggio & Mohr, 1985; McDonough, 1997). Social and cultural capital also refer to the value that is placed on obtaining an advanced degree (DiMaggio & Mohr, 1985; McDonough, 1997). Like human capital and physical capital, social and cultural capital are resources that may be invested to enhance productivity (Coleman 1988) and facilitate upward mobility (DiMaggio & Mohr 1985; Lamont & Lareau 1988). The conceptualization of social capital has at times overlapped with the conceptualization of cultural capital (McNeal, 1999). Whereas cultural capital refers to the system of factors that is derived from one's parents that defines an individual's class status (Bourdieu & Passeron 1977), social capital refers to social networks and the ways in which social networks and connections are sustained (Morrow 1999). In his comprehensive assessment of the origins and uses of social capital, Portes (1998) noted that social capital is acquired through an individual's relationships with other individuals, particularly through membership in social networks and other social structures. Social capital may also be understood as a tool for describing how individuals gain access to other forms of capital, including human capital and cultural capital, as well as institutional resources and support (Coleman, 1998; Portes, 1998; Morrow, 1999; Stanton-Salazar & Dornbusch, 1995).
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This research also explored the effect of expanding traditional econometric models to include measures of social and cultural capital as proxies for individual expectations, aspirations, and values. While most traditional econometric models ignore the role of such factors, social and cultural capital may influence graduate student persistence through the provision of knowledge and information about the costs and benefits of attending graduate school (DiMaggio & Mohr, 1985; McDonough, 1997) and the value of earning an advanced degree. Like human capital, social and cultural capital are resources that may be obtained and invested to enhance an individual's productivity, opportunity, and other outcomes (Coleman, 1988; DiMaggio & Mohr, 1985; Lamont & Lareau, 1988).

Cultural capital refers to factors derived from one's parents that define an individual's status or class (Bourdieu & Passeron, 1977). Social capital, on the other hand, refers to social networks and the way in which such connections are maintained (Morrow, 1999). Passeron (1977) suggested that social capital is obtained through relationships with others, emphasizing membership in social networks or institutions.
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The existence of other social networks that may promote graduate enrollment is measured by such characteristics of the bachelor's degree granting institution as Carnegie classification, tuition, and location. The Carnegie classification system reflects, at least in part, the relative emphasis of the institution on research and graduate education. The following Carnegie classes are included in the analyses: research I, other doctoral-granting, comprehensive I, liberal arts I, and other (e.g., liberal arts II, specialized). Tuition, one measure of institutional quality (McPherson & Winston, 1993; Perna, 1998), is measured by the tuition and fees that are typically charged by the institution for full-time, full-year attendance. Because the variable is positively skewed, tuition is recoded into quartiles. Location, a measure of the breadth of the peer network, is measured by whether the student received the bachelor's degree from an institution in the student's home state, home region, or outside the student's home region (reference category). Whether an individual attended a two-year college prior to receiving the bachelor's degree (yes or no) is also included.Two other measures of social capital were included in the present study.

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Carnegie classification of the undergraduate institution served as a proxy for preparation for graduate school and also represented the institution's relative emphasis on research and graduate education. The following classes were included in the analyses: research I, doctoral-degree granting, comprehensive I, liberal arts I, and other (e.g., liberal arts II, specialized schools). Tuition served as a proxy for institutional quality as recommended by McPherson and Winston (1993) and Perna (1998). It was recoded into quartiles.

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A third factor, being successful in the labor market, is included in the analyses. Comprised of being successful in the line of work (factor loading = 0.750), finding steady work (0.754), and having enough leisure time to enjoy own interests (0.754), this factor has an alpha reliability coefficient of 0.644. The alpha reliability coefficient for the fourth factor, becoming a leader, is low (α= 0.415) and could not be increased by removing any of the items from the composite. Because the items appear to reflect the extent to which an individual values outcomes that may result from graduate education, each of the three questionnaire items (influencing the political structure, being a leader in the community, and becoming an authority in a given field), is included in the analyses.

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The second factor, becoming a leader, consisted of three items: influencing political structures (.732), being a leader in the community (.693), and becoming an authority in field (.518). The alpha reliability coefficient is very low (388 .= α). Given such low reliability, this factor could be discarded as unreliable. However, because the items appear to measure the extent to which an individual values outcomes associated with graduate education, the factor is included in the analyses. The third and fourth factors had low alpha reliability coefficients (277 .379. == αα and), were not related to outcomes of graduate education, and thus were not included in the analyses.

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The multinomial logistic regression analyses suggest that adding measures of cultural and social capital to traditional econometric measures improves the explanatory power of a model of post-baccalaureate enrollment. Table 2 shows that the ratio of deviance to degrees of freedom increases from 2.00 to 2.17, approaching the 2.5 minimum threshold that some researchers have proposed (Peng et al., 2002), when measures of cultural and social capital are added to a model that includes measures of expected costs and benefits and financial and academic resources. The change in defiance (−2 log likelihood) that is associated with the addition of measures of cultural and social capital to the model suggests a statistically significant improvement in fit. The percentage of cases that is correctly classified also increases somewhat when measures of cultural and social cultural capital are added to the model. Table 2 shows that adding measures of cultural and social capital to the measures of sex, race/ethnicity, expected costs and benefits, and financial and academic resources increases the percentage of cases that is correctly classified for submaster's level enrollment (from 1% to 2%) and master's degree enrollment (from 15% to 19%).

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The binomial logistic regression results suggest that adding academic, non academic, and measures of social and cultural capital to traditional economic measures improved the explanatory power of a model of graduate student persistence. The change in deviance (-2 log likelihood) associated with the addition of academic and non academic factors, measures of social capital, and measures of cultural capital to the model suggests a statistically significant improvement in fit. "Block 0" represented the state of affairs without any independent variables and the -2 Log likelihood of Block 0 was equal to

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The percentage of cases that were correctly classified also increased when academic and non-academic factors were added to the model. Table 14 reports that adding such measures to a traditional econometric model increased the percentage of cases that were correctly classified from 70% to 73%. In fact, the percentage of cases that were correctly classified as non-persisters increased over the three models (from 1% to 15%).

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The results of the binomial logistic regression analyses suggest that adding academic and non-academic factors, including measures of social and cultural capital, significantly improve the explanatory power of a traditional economic model. These results suggest that the underlying hypothesis is true—yes, more than money matters when predicting graduate student persistence.

PAGE 95 AND 96 IN DISSERTATION

Perna, L. W. (2000). Differences in the decision to attend college among African Americans, Hispanics, and Whites. The Journal of Higher Education, 71(2), 117-141.

This study attempts to improve the explanatory power of econometric models by using measures of social and cultural capital to reflect differences in expectations, preferences, tastes, and certainty about higher education investment decisions. Like human capital and physical capital, social and cultural capital are resources that may be invested to enhance profitability (Bourdieu & Passeron, 1977) and productivity (Coleman, 1988) and facilitate upward mobility (DiMaggio & Mohr, 1985; Lamont & Lareau, 1988). Social capital may take the form of information-sharing channels and networks, as well as social norms, values, and expected behaviors (Coleman, 1988). Cultural capital is the system of factors derived from one's parents that defines an individual's class status (Bourdieu & Passeron, 1977). Members of the dominant class possess the most economically and symbolically valued kinds ofcultural capital (Bourdieu & Passeron, 1977; McDonough, 1997). Individuals who lack the required cultural capital may (a) lower their educational aspirations or self-select out of particular situations (e.g., not enroll in higher education) because they do not know the particular cultural norms; (b) overperform to compensate for their less-valued cultural resources; or (c) receive fewer rewards for their educational investment (Bourdieu & Passeron, 1977; Lamont & Lareau, 1988).
PAGE 119.

Strayhorn, T. L. (2008). Influences on labor market outcomes of African American college graduates: A national study. The Journal of Higher Education, 79(1), 28-57.

This study employed an integrated model that expands traditional econometric models that are typically applied in economic analysis by including measures of social and cultural capital. Like human capital, social and cultural capital are resources that can be invested to enhance profitability (Bourdieu & Passeron, 1977), increase productivity (Coleman, 1988), and facilitate upward mobility (DiMaggio & Mohr, 1985; Lamont & Lareau, 1988). Social capital takes the form of information-sharing networks as well as social norms, values, and expected behaviors (Coleman, 1988). Social capital also refers to the way in which those connections are maintained (Morrow, 1999). Cultural capital, on the other hand, is the system of beliefs, tastes, and preferences derived from one's parents (or guardians) that ultimately define an individual's class status (Bourdieu & Passeron, 1977; McDonough, 1997).
PAGE 32

Terrell L. Strayhorn (2008) Influences on Labor Market Outcomes of African American College Graduates: A National Study, The Journal of Higher Education, 79:1, 28-57

The dependent variables in this study are measures of labor market success—namely, annual earnings, occupational status attainment, and job satisfaction. Specifically, one dependent variable measured the annual salary (in dollars) of recent college graduates as reported on the B&B survey. Occupational status attainment (dependent variable 2) was measured by converting each individual's occupational code to a measure of occupational status attainment as defined by Duncan (1961) and later revised by Featherman and Stevens (1982). That is, each occupational code was assigned a socioeconomic index based on extensive research on occupational status (see Featherman & Stevens, 1982, for a full discussion of the socioeconomic index). These variables are consistent with techniques used in previous studies (Ehrenberg & Rothstein, 1994; Lin & Vogt, 1996; Smart, 1986; Trusheim & Crouse, 1981).

For the purposes of this study, job satisfaction (dependent variable 3) was defined as the degree of pleasure or happiness derived by employees from their work, work relations, and work-related factors such as salary, fringe benefits, working conditions, opportunity for advancement, and job security, to name a few (Fisher, 2000; Mau & Kopischke, 2001; Price & Mueller, 1986). Theoretically speaking, job satisfaction is based on the degree of congruence between an individual's skills and aspirations and the perceived or actual nature of the job (Bretz & Judge, 1994). Job satisfaction was measured using nine variables from the B&B:93/97 data base. Similar variables were used in previous research and were deemed appropriate for the current analysis (Mau & Kopischke, 2001).

The independent variables consist of five sets of predictors. The first set includes background traits and precollege characteristics. These include race, gender, age, family income, mother's educational attainment, father's educational attainment, type of high school attended, precollege ability as measured by college entrance exam scores, and educational aspirations. Educational aspirations were measured using four categories ranging from less than BA to advanced degree. Parental educational attainment was measured by six categories: less than high school; high school; some postsecondary education, less than BA; bachelor's degree; and advanced degree.
PAGES 34-36

Lamont Flowers (2003). Labor Market Outcomes of African American College Graduates. Association for Institutional Research (AIR) Grant Proposal.

Occupational status attainment will be measured by converting each student's occupational code (B2AJOBR) to a measure of occupational status attainment developed by Duncan (1961) and later revised by Featherman and Stevens (1982). Specifically, 13 each occupational code will receive a socioeconomic index based on extensive research on occupational status (see Featherman & Stevens, 1982 for a detailed discussion of the socioeconomic index). As a proxy for earnings (B2APRSAL), two separate variables will be developed: 1) the natural log of 2000 annual earnings, and 2) annual earnings (measured in dollars) reported by each student. Precedent for using these dependent variables as outcomes variables in socioeconomic attainment research can be found in other research reports estimating the impact of college attendance on labor market outcomes (e.g., Ehrenberg and Rothstein, 1994; Lin & Vogt, 1996; Smart, 1986; Trusheim & Crouse, 1981). For this study, job satisfaction will be defined as the degree of happiness and contentment experienced by employees as a result of particular features of their job and interactions with and perceptions of various aspects of their job (e.g., pay, fringe benefits, working conditions, opportunity for promotion, job security, relationship with co-workers, and opportunity for further education) (Fisher, 2000; Mau & Kopischke, 2001; Price & Mueller, 1986). Building on previous research employing B&B: 1993/1997 data (National Center for Education Statistics, 2002) and existing literature on job satisfaction (Bisconti & Solmon, 1977; Mau & Kopischke, 2001; National Center for Education Statistics, 2002, Serbu, 1997; Smith, 1992; Witte, Philips, & Kakela, 1998; Yuan, 1997), job satisfaction will be measured using nine variables from the B&B: 1993/1997 dataset (B2AJST01, B2AJST02, B2AJST03, B2AJST04, B2AJST05, B2AJST06, B2AJST07, B2AJST08, B2AJST09). This variable has been used in previous research and is deemed appropriate for the present study (Mau & Kopischke, 2001). The construction of the job satisfaction variable is also based on the Theory of Work Adjustment (Bretz & Judge, 1994), that suggested that job satisfaction is based on the degree of fit between an individual's skills, abilities, and aspirations and the perceived or real nature of the job (Witte, 14 Philips, & Kakela, 1998). Based on the conceptual framework for the proposed investigation, the study will incorporate a number of independent variables (Variable names for each independent variable from the B&B: 93/97 longitudinal study are shown in parentheses). The first set of independent variables will consist of students' precollege characteristics and background traits: age (AGEATBA), gender(GENDER), family income (PARAGI), mother's educational attainment (MOMEDUC), father's educational attainment (DADEDUC), type of high school attended (HSTYPE), precollege cognitive ability (ACTSCOR2, SATSCOR2), educational aspirations (ANYHILVL), and occupational

aspirations (OEXPLONG).

NOTES:

Perna's description of how to account for missing data appears to also have been used,without attribution in other empirical papers written by Strayhorn. These include, but are not limited to (because not all his papers were checked):

Strayhorn, T. L. (2010). Money matters: The influence of financial factors on graduate student persistence. Journal of Student Financial Aid, 40(3), 1.

Terrell L. Strayhorn (2008) Influences on Labor Market Outcomes of African American College Graduates: A National Study, The Journal of Higher Education, 79:1, 28-57.

Regarding the 2008 Strayhorn publication noted above, there are also instances of Strayhorn borrowing content for this paper from another Perna article:

Perna, L. W. (2000). Differences in the decision to attend college among African Americans, Hispanics, and Whites. The Journal of Higher Education, 71(2), 117-141

In particular, the content about human, cultural, and social capital that he borrowed from Perna for his dissertation, detailed in the comparisons in the main part of this document, was also used in Strayhorn's 2008 publication about labor market outcomes.

PLAGIARISM: You plagiarize if you directly quote other people's words and if you do not put quotation marks around these words and cite the person(s) words.

This is not, however, the only way one can plagiarize another's work. It is also plagiarism if you **paraphrase**, that is rephrase another authors idea(s) or words, and/or if you copy too many words or phrases from the author instead of using your own words**. Importantly**, this is considered plagiarism whether you cite the source or not.

In addition to the blatant cases described in this document, there was a lot of paraphrasing in Strayhorn's dissertation, but not included herein, and instances of this showing up in other papers he has authored as well.

Software used to conduct searches: iThenticate available at iThenticate.com.