

RETURN ON INVESTMENT CONVENING

A Return on Investment Analysis for Black Graduates of Historically Black Colleges and Universities: Insights from Three Studies

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Executive Summary

Much of the research on returns on postsecondary education investments suggests that earning a bachelor's degree significantly influences one's economic success and labor market outcomes such as earnings, occupational status, and job satisfaction. Still, there has been fairly consistent debate about the "educational justification" of historically Black college or universities (HBCUs) and whether such institutions confer labor market advantages on Black graduates compared to those who earn a bachelor's from predominantly White institutions (PWIs) or other non-HBCUs. This topic is addressed in the paper included herein.

The paper presents results from several analyses that measure the returns on one's investment in earning a bachelor's degree from an HBCU in the United States. Building on a previous analysis (Strayhorn, 2008), in Study One I conducted a series of analyses using a blend of statistical methods with a rigorous set of statistical controls to understand the influence of graduating from a historically Black college (versus non-HBCU) and institutional selectivity on labor market outcomes for a nationally representative sample of African American college graduates. Study Two uses National Survey of Black Americans data to explore the relationship between graduating from an HBCU (versus a PWI) and Black Americans' occupational status, job satisfaction, and four social psychological measures (i.e., self-esteem, Black identity, psychological distress, life satisfaction). Study Three is based on one-on-one exploratory interviews with a relatively small group of HBCU graduates.

Findings generally suggest positive returns on Black students' investment in attending and graduating from an HBCU, especially in terms of occupational status and Black identity, although results are mixed in terms of annual earnings and job satisfaction. Important implications for policy, practice, and future research are discussed. Here is a summary of key findings:

- Black graduates from HBCUs earn lower annual salaries, on average, compared to same-race graduates from PWIs and these differences persist even when controlling for institutional selectivity;
- Black graduates from HBCUs assume higher status occupations compared to same-race graduates from PWIs and these differences persist even when controlling for institutional selectivity;
- Black graduates from HBCUs report higher scores than same-race PWI graduates on the NSBA Black Identity Index;
- Black graduates from HBCUs and PWIs generally do not differ in terms of job satisfaction, self-esteem, and psychological distress, although occupational status (SEI) differences approach statistical significance in Study Two.
- Black graduates from HBCUs are socialized to higher status occupations in college, HBCU environments affirm their racial/ethnic identity, and many Black HBCU graduates report significant non-monetary returns on their educational investment.

A Return on Investment Analysis for Black Graduates of Historically Black Colleges and Universities: Insights from Three Studies

College enrollment rates have increased for all groups over the last 30 years. Today, approximately 18 million students are enrolled in postsecondary degree-granting institutions compared to only 11 million in 1976—an increase of approximately 64% in just three decades (U.S. Department of Education, 2006). And, more women and students of color enroll in college today than ever before. Yet, significant gaps across racial/ethnic groups persist. For example, while upwards of 75-80% of White students enroll in college immediately following high school graduation, only 35-50% of African American¹ students do so. And, when they do enroll, African Americans tend to be concentrated in less selective 4-year institutions, 2-year community colleges, and minority-serving institutions such as historically Black colleges and universities (HBCUs) (Baum & Payea, 2004; Strayhorn & Hirt, 2008; Thomas & Perna, 2004).

Not only is there evidence of gaps across groups but some researchers have also studied within-group differences. For instance, one line of scholarly inquiry focuses on disparities in the post-baccalaureate (BA) outcomes of African Americans who attended predominantly White institutions (PWIs) and their same-race counterparts at HBCUs. Although “much of the research on the effects of college suggests that earning a bachelor’s degree significantly influences one’s economic success and labor market outcomes such as earnings, job security, and prestige of one’s occupation” (Strayhorn, 2008), prior research conclusions that compare Blacks at PWIs to Blacks at HBCUs are equivocal and oftentimes contradictory (Allen, 1992; Constantine, 1994, 1995; Ehrenberg, & Rothstein, 1994; Fitzgerald, 2000; London, 1998; Solnick, 1990; Thomas, 2000). For example, Ehrenberg and Rothstein analyzed national data and found that attending a HBCU had a negligible effect on subsequent occupational status and earnings, controlling for gender, SAT scores, high school rank, educational attainment, and a number of other confounding influences. On the other hand, Constantine studied African Americans at four-year institutions and found that attendance at a HBCU versus a PWI had a statistically significant positive effect on graduates’ earnings, controlling for a battery of individual level characteristics such as high school achievement and gender.

And, as another example, I previously analyzed national data (Strayhorn, 2008), on African American college graduates to study the influence of racial campus composition (i.e., HBCU vs. PWI) on three measures of post-BA labor market outcomes—not just earnings but also job satisfaction and occupational status. I found compelling evidence that HBCU attendance was associated with lower annual salary or earnings, higher occupational status, and yielded no influence on job satisfaction. Rather than arguing that HBCUs confer an earnings disadvantage or what J. Riley (2010) calls a “wage penalty” on Black graduates, the analysis seemed to reveal ways in which employers preferences and other workplace discriminatory practices negatively affect Blacks who earn college degrees from HBCUs that may be less well known or valued in the mainstream compared to larger PWIs.

Despite use of a methodologically rigorous research design, widely-used nationally-representative data, and statistical controls for confounding influences, concerns were raised among some leaders of several national HBCU-serving organizations that the observed inequities were due, in part, to differences in institutional factors such as institutional control and quality (B. Daniels, February 3, 2015, personal communication). However, to date, comparatively few

¹ In this article, the terms “African American” and “Black” are used interchangeably.

researchers have studied the role that institutional selectivity plays in explaining disparities in student outcomes among African American college graduates. The first study presented as part of this return on investment (ROI) analysis responds to the concerns expressed by these national organization leaders and addresses this important gap in our current literature. Figure 1 is a diagram that represents the underlying assumptions guiding the ROI analyses featured in this commissioned paper.

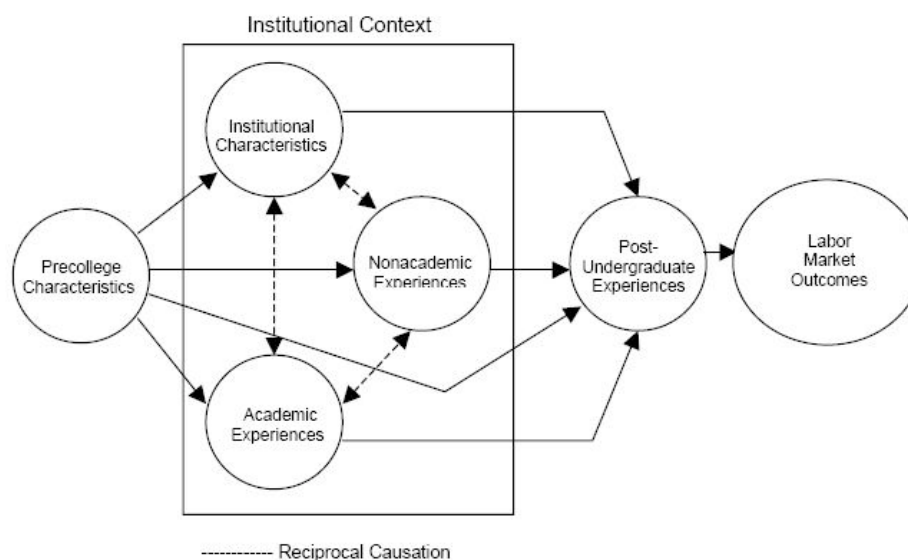


Figure 1. Figure adapted by author.

Study One

Institutional Selectivity and Labor Market Disparities among African American College Graduates: A National Study

Purpose

The purpose of the study was to measure differences in the post-BA outcomes of African American college graduates who attended PWIs and their same-race peers at HBCUs. Using data from the National Center for Education Statistics (NCES') *Baccalaureate and Beyond Longitudinal Study: 1993/97 Second follow-up methodology report* (B&B: 93/97; U.S. Department of Education, 1999;)², this study seeks to answer the following research questions:

1. Are there differences among HBCU and non-HBCU African American college graduates in terms of three measures of labor market outcomes, controlling for differences in institutional selectivity as measured by *Barron's Profiles of American Colleges*?

² In this paper I refer to the study in general as "B&B" and the first (U.S. Department of Education, 1996) and second (U.S. Department of Education, 1999) follow-up methodology reports as "B&B:93/94" and B&B:93/97", respectively.

2. What is the net effect of attending a HBCU on the post-BA earnings of African American college graduates, controlling for an extensive array of confounding influences and differences in institutional selectivity?
3. What is the net effect of attending a HBCU on the post-BA occupational status of African American college graduates, controlling for an extensive array of confounding influences and differences in institutional selectivity?
4. What is the net effect of attending a HBCU on the post-BA job satisfaction of African American college graduates, controlling for an extensive array of confounding influences and differences in institutional selectivity?

Significance of the Study

The present study is significant for at least one of three reasons. First, this study represents the second in a series of papers about the post-BA labor market outcomes of African American collegians (e.g., Strayhorn, 2008). And, while Zhang (2005) examined the effect of college quality, as defined by *Integrated Postsecondary Education Data System* (IPEDs) institutional control and a selectivity index, on college graduates' earnings, his analysis was limited to college quality, used alternative measures of selectivity, college graduates' earnings (not occupational status and job satisfaction, which are two other important labor market outcomes), and included students across all racial/ethnic subgroups. By including African Americans only, who tend to differ significantly from their non-Black counterparts in terms of precollege characteristics, academic experiences, and even the *campus type* or dominant racial composition of the undergraduate college attended (e.g., HBCU) (Fleming, 1984; Flowers, 2002), I attempt to advance this line of inquiry in terms of isolating the net impact of HBCU graduation on labor market outcomes for a racially homogenous sample, thereby reducing the potential inflation of parameter estimates.

Second, this analysis differs from prior research in a number of ways. Prior research consists largely of single-institution or small student samples (Constantine, 1994, 1995), samples from a single employment sector (Solnick, 1990), and even single states (Johnson, 1982). In contrast, this analysis was based on nationally representative data drawn from a large-scale survey of students from multiple institutions and across various academic disciplines.

Third, previous studies tended to examine the outcomes of college using unadjusted prediction models or "flat analytical techniques without statistical controls" (Strayhorn, 2008, p. 31). The absence of statistical controls proves problematic (Keith, 2006), potentially biasing the estimates of the effects upward by not accounting for the confounding influences of other independent variables (e.g., age, sex, academic major). In the present study, I employ an extensive array of statistical controls for potentially confounding variables to isolate the net impact of HBCU graduation on labor market outcomes disparities among Blacks, with a particular emphasis on controlling for differences in institutional selectivity as measured by *Barron's Profiles of American Colleges* (Brewer & Ehrenberg, 1996; Brewer, Eide, & Ehrenberg, 1999).

Finally, this study is grounded in widely-cited theoretical perspectives. For instance, in this investigation I employed a blended theoretical framework consisting of college impact theory and notions drawn from social and cultural capital theories to estimate relationships among all factors and to justify the selection or elimination of variables (and proxies) included in the statistical model.

Methods

The present study is part of a larger research program that centers on issues of access, retention, and success for historically underrepresented students, especially racial/ethnic and economic minorities, in higher education.

Data Source

Data were drawn from the National Center for Education Statistics' B&B study. The B&B study follows baccalaureate degree completers over time to provide information on work experiences after college and post-BA outcomes such as earnings. Using the 1993 National Postsecondary Student Aid Study (NPSAS) sample as the base year, the B&B:93/97 Longitudinal Study follows baccalaureate degree completers beyond their undergraduate graduation (U. S. Department of Education, 1999). This is particularly useful for studying the effect of college on post-BA labor market outcomes such as annual earnings. In addition, given the maximum economic return is associated with actually graduating from college (Murphy & Welch, 1989; Rupert, Schweitzer, Serverance-Lossin, & Turner, 1996; Turner & Bowen, 1990), this data source was most appropriate as it provides longitudinal information on a national sample of recent college graduates.

The follow-up surveys provide a unique opportunity to gather information concerning delayed entry into graduate education, graduate school aspirations, persistence, and the interaction between work and education experiences beyond obtaining a bachelor's degree (U. S. Department of Education, 1999). The first-year follow up report (B&B:93/94; U. S. Department of Education, 1996) surveys BA recipients one year after receiving their college degree while the second follow up (B&B:93/97; U. S. Department of Education, 1999) elicits information about participants four to five years after college graduation. The second follow-up data were deemed appropriate for this investigation and have been used in previous studies to explore the decision to enroll in graduate school (Perna, 2000, 2004) and graduate student persistence (Strayhorn, 2005).

Analytic Sample

The total sample consisted of 9,274 respondents representing 83% of the original sample. For this analysis, the sample was restricted to African American students only. The weighted sample size (explained in next section) was 71,831. The majority were female (67%) and 33% graduated from a HBCU while 67% did not. Table 1.1 presents additional information to describe the sample.

Variables

The dependent variables, in this study, are measures of labor market outcomes, 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 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). Specifically, job satisfaction³ was measured using an index or composite with adequate reliability ($\alpha = 0.80$) composed of nine variables from the B&B:93/97 database. 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 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.

The second and third set of predictors included institutional characteristics and academic factors, respectively. Institutional characteristics included campus racial composition, college selectivity, and institutional control. A single dichotomous variable was created to indicate campus racial composition with scores recorded as 0 ("PWI") and 1 ("HBCU"). College selectivity was measured according to information from *Barron's Profiles of American Colleges*. Barron's rating categorizes institutions into six selectivity groups on the basis of entering students' class rank, high school grade point average (GPA), average SAT scores, and the percentage of applicants admitted. Scores ranged from 5 ("most competitive") to 0 ("non-competitive"). In addition, I extracted institutional control data (i.e., public vs. private) from IPEDs.

Academic variables included college GPA, associate's degree attainment, and undergraduate academic major. Major was operationalized using a set of four dichotomous variables indicating whether one's major was classified as specialized hard, specialized soft, broad professional, or general liberal arts. This conceptualization was also used in Sagen, Dallam, and Laverty's (1997) study. Finally, nonacademic experiences and post-BA experiences were included in the model. Nonacademic experiences refer to the hours worked per week while post-BA experiences include participation in graduate education and marital status. Precedent for using these variables to estimate the net impacts of college attendance on student-level outcomes was set in previous studies (Ehrenberg & Rothstein, 1994; Lin & Vogt, 1996; Pascarella & Smart, 1990; Strayhorn, 2008). Table 1.2 presents descriptive statistics for all variables included in the analysis.

³ Job satisfaction was measured using a composite of 9 survey items that assessed the level of one's satisfaction with pay, employment benefits, job challenge, work conditions, opportunities for promotion, job security, supervisor, coworkers, and educational benefits. Item responses ranged from 1 (*dissatisfied*) to 3 (*very satisfied*) while the scale ranged from 3 to 27.

Data Analysis

Several analytical procedures were used to investigate the research questions. First, descriptive statistics were computed to characterize the sample and to distinguish those who graduated from historically Black colleges and universities from those who did not. Second, analysis of covariance (ANCOVA) tests were used to determine differences between these two groups on three labor market outcome measures, controlling for differences in institutional selectivity. ANCOVA is an appropriate technique for “subtract[ing] statistically the effects of a variable to see what a relationship [i.e., comparison of group means] would be without it” (Vogt, 1999, p. 56).

Lastly, hierarchical linear regression techniques were used to measure the influence of such factors on three measures of labor market outcomes, namely annual earnings, occupational status attainment, and job satisfaction. Hierarchical regression analysis is “a method of regression analysis in which independent variables are entered into the regression equation in a sequence specified by the researcher in advance” (Vogt, 1999, p. 129). Accordingly, independent variables were entered into the statistical model proceeding from precollege and background traits, to college experiences (academic and nonacademic) and institutional factors, to post-BA experiences. The independent variable of interest, whether a student graduated from a HBCU, was entered in the last and final model. This statistical design permitted the use of a rigorous set of statistical controls and isolated the “net effect” of individual sets of predictors on the dependent variable(s) under study; by net effect, I mean the statistical relationship between a variable or set of variables (X) on a dependent (Y) subtracting all other effects.

Weighting and Technical Issues

While the instruments used for both the NPSAS and the B&B surveys were found to be reliable through field testing and follow-up studies, adjustments must be made to compensate for “unequal probability of selection into the B&B sample and to adjust for non-response” (U. S. Department of Education, 1999, p. 108). Due to the complex sampling design, appropriate sampling weights must be applied when approximating the population of the 1992-1993 bachelor’s degree recipients in the longitudinal sample. The B&B:93/97 panel weight is appropriate for this purpose and was applied to provide national probability estimates adjusted for differential rates of selection and nonresponse. To “minimize the influence of sample sizes on standard errors while also correcting for the over sampling of some groups, each case is weighted by the panel weight divided by the average weight for the sample [the relative weight]” (Perna, 2004, p. 492).

All statistical analyses were conducted using *AM software* (version 0.06.03 beta) provided by the American Institutes for Research (2002) which is appropriate for use with weighted data from large-scale, complex samples. In addition, due to the nested nature of these data, a more rigorous threshold of statistical significance ($p < 0.01$) was used to interpret the results where possible (Thomas & Heck, 2001).

Limitations

Despite the adjustments described above, there are several limitations that should be discussed before presenting the results of this analysis.

Missing Data

Some analyses in this study are limited by the magnitude of missing data. Variables with the largest share of missing data are those pertaining to family income, salary, and age, although all variables in the study were missing less than 10% of cases. In some cases, listwise deletion would reduce the analytic sample significantly and possibly result in a sample that is not representative of the population of 1992-93 bachelor's degree recipients. Therefore, I considered options for preserving statistical power (Cohen, 1977).

While researchers disagree on the minimum number of cases that is required per independent variable, most generally agree that larger samples will generate more stable parameter estimates and more accurate χ^2 distributions (Peng, So, Stage, & St. John, 2002). To avoid the substantial reduction in sample size that would occur during listwise 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, scores were imputed for cases that were missing data on continuous independent variables using a series of linear interpolations. While these data were imputed to minimize the effects of missing data, this procedure may result in an underestimation of standard errors by 10% to 20% and increase the chances of making a type-1 error. Therefore, a more rigorous threshold of statistical significance ($p < 0.01$) was used when interpreting such results.

Some cases were missing data on scale variables. In that event, the researcher used trend equations (Thomas & Heck, 2001) to impute values for the missing cases. Trend equations act much like regression equations and predict missing value using data provided on valid cases in the sample. Predicted values were imputed for all missing cases on scale items, except when missing values constituted no more than 1% of all cases.

It is important to note that linear imputation of values in place of missing observations was used only for continuous independent variables, while trend calculations were used to impute values for missing observations on survey scale items with restricted ranges. Missing cases for the dependent variables were excluded from the analysis as recommended by others (Galloway, 2004; Perna, 2004).

Results

ANCOVAs were conducted to evaluate the relationship between campus racial composition (i.e., attending a HBCU vs. PWI) and three measures of labor market outcomes, controlling for differences in institutional selectivity. The ANCOVA was significant for annual earnings, $F(2, 662) = 5.54, p < 0.01$. That is, the strength of the relationship between campus racial composition and annual earnings was statistically significant at the 0.01 level, holding constant one's undergraduate institution's level of selectivity. Similar results were found for occupational status (i.e., SEI), $F(2, 662) = 4.57, p < 0.01$. However, no statistically significant results were found for job satisfaction, $F(2, 662) = 0.15, p = n.s.$

A hierarchical linear regression analysis was conducted to estimate the net effect of HBCU attendance on African American college graduates' post-BA annual earnings, as reported in 1997. The final hierarchical regression model was found to be significant overall, $F(21, 643) = 7.48, p < 0.01$. The sample multiple correlation coefficient was 0.44, indicating that approximately 20% of the variance in earnings can be explained by the linear combination of independent and control variables. Results indicate that several variables are significant

predictors of annual earnings: gender, age, marital status, specialized hard major, broad professional major, and HBCU. And, perhaps surprisingly, results suggest that differences between HBCU and non-HBCU African Americans persist in the presence of a powerful set of statistical controls. Relative standardized regression weight comparisons suggest that age, marital status, and broad professional major have the stronger influences on earnings. Results from the final model are reported in Table 1.3.

A hierarchical linear regression analysis was conducted to estimate the net effect of HBCU attendance on African American college graduates' post-BA occupational status, as measured by a conventional socioeconomic index. The final hierarchical regression model was found to be significant overall, $F(21, 643) = 18.67, p < 0.01$. The sample multiple correlation coefficient was 0.62, indicating that 38% of the variance in occupational status can be explained by the linear combination of independent and control variables. Interpretation of the parameter estimates indicates that several variables are significant predictors of occupational status: age, marital status, educational aspirations, enrollment in graduate school, and institutional selectivity. And relative standardized regression weight comparisons suggest that age, marital status, broad professional major, and graduate school attendance have the greatest influence on occupational status for the sample. Differences in occupational status between HBCU and non-HBCU African American graduates persist in the face of an extensive array of statistical controls. Results from the final model are reported in Table 1.4.

A hierarchical linear regression analysis was conducted to estimate the net effect of HBCU attendance on African American college graduates' post-BA job satisfaction, as reported in 1997. The final hierarchical regression model was found to be significant overall, $F(21, 643) = 1.94, p < 0.01$. The sample multiple correlation coefficient was 0.24, indicating that approximately 6% of the variance in job satisfaction can be explained by the linear combination of independent and control variables. Results indicate that several variables are significant predictors of job satisfaction: gender, GPA, hours spent working while enrolled, and SAT score. Results from the final model are reported in Table 1.5.

Lastly, I conducted follow-up tests to check for multicollinearity. Multicollinearity exists when "one independent variable is a near linear combination of other independent variables" or a complex correlational relationship exists among many variables (Keith, 2006, p. 199). This makes it difficult, if not impossible, to determine the direct effects on the dependent variable (Vogt, 1999). Results suggest that collinearity was not a problem for this investigation as all tolerance values approach "1" (range from 0.79 to 0.98) indicating near complete independence (Cohen, Cohen, West, & Aiken, 2003).

Discussion

Building upon my previous study (Strayhorn, 2008), this analysis employed a hierarchical design with statistical controls for potentially confounding influences to estimate the net impact of attending a HBCU on three measures of labor market outcomes using a national sample of African American college graduates. Specifically, in this study I considered the role that institutional selectivity, as measured by *Barron's Profiles of American Colleges*, plays in mediating this relationship. Findings suggest a number of important conclusions. Overall, HBCU and non-HBCU African American graduates differ significantly on post-BA annual earnings and occupational status but not job satisfaction. Still, a number of important nuances should be highlighted.

Attending a HBCU is associated with lower levels of annual salary for African American college graduates. These results are consistent with findings reported elsewhere (Ehrenberg & Rothstein, 1994; Fitzgerald, 2000; Strayhorn, 2008; Thomas, 2000). However, they are inconsistent with conclusions drawn in Constantine's (1995) study; she found that HBCU attendance exerts a positive influence on subsequent wages. While the weight of evidence suggests that African American HBCU graduates earn lower annual salaries, on average, than their non-HBCU counterparts, additional research is needed to test whether this relationship holds across different databases, measures of earnings, and student subpopulations.

Second, contrary to popular belief and the opinions expressed by national agency leaders upon publication of the first manuscript (Strayhorn, 2008) and critics like J. Riley (2010) and Vedder (2010), economic inequities persist between HBCU and non-HBCU African American college graduates even after "subtracting out" the effect of institutional selectivity/quality on the outcome. And while the results present compelling evidence of the impact of HBCU attendance on annual earnings, far less is revealed about the causal mechanism underlying this relationship. As I argued previously, these results "may provide evidence of employers' [biased] preferences for non-HBCU graduates rather than an actual negative 'effect' that HBCUs confer upon their students" (Strayhorn, 2008, p.47). Indeed, countless studies have shown that attending HBCUs has a positive effect on African American students in terms of cognitive and affective outcomes (Berger & Milem, 2000), racial ideology (Cokley, 1999), racial identity (McCowen & Alston, 1998), and even racial uplift (Hirt, Strayhorn, Amelink, & Bennett, 2006). Thus, readers should exercise caution when interpreting this finding. Rather than blaming historically Black institutions, I encourage readers and policymakers to focus on factors over which we have some programmatic and policy control such as employer's biases, degree offerings, financial investments in HBCUs, and Black students' ability to negotiate competitive salaries, to name a few.

Third, institutional selectivity was not a significant predictor of annual earnings for African American college graduates. In other words, all other things being equal, African American college graduates earn comparable salaries regardless of the selectivity level (or quality) of their undergraduate institution. Although statistically nonsignificant, this finding has some practical significance as most studies underscore the important role that institutional quality plays in predicting post-BA outcomes (e.g., Zhang, 2005). So, why might African American college graduates from highly selective institutions earn salaries comparable with their same-race peers at less selective institutions? Future research should take up this issue as it may provide evidence of the link between race and economic inequities in the labor market. It may be the case that employers and supervisors give more attention to race, age, gender, marital status, and major than the quality of one's undergraduate institution. Of course at least one other explanation exists to explain this finding—employers may be unaware of institutional quality and therefore salary decisions are made without reference to this factor.

Fourth, consistent with previous research (Ehrenberg & Rothstein, 1994; London, 1998; Strayhorn, 2008), attending a HBCU was associated with higher occupational status in the present study. Specifically, findings suggest that African American college graduates who have similar educational and personal histories, who are the same with respect to age and marital status, who share similar levels of social and cultural capital, and who attend comparable undergraduate institutions are more likely to assume high status occupations if they attend a historically Black college. Indeed, this is good news for HBCUs and lends powerful support to their continuing significance (Strayhorn & Hirt, 2008). As I argued in the earlier work, this

finding may reflect that HBCUs continue to produce “the vast majority of Black professionals and those who the Black community and society in general have acknowledged as ‘Black leaders’” (Barthelemy, 1984, p. 14). Federal agencies, policymakers, and private philanthropists should consider these results in light of recent imperatives to increase the number of racial/ethnic minorities (e.g., African Americans) in highly specialized scientific occupations (e.g., biologist, chemist, engineer) and professional fields such as business, law, and medicine, which are typically classified as “high status” occupations (Brown & Davis, 2001). According to information presented herein, HBCUs represent an important pathway for broadening minority participation in high status fields; therefore, investments in expanding HBCUs’ institutional capacity in such fields should be seen as worthy attempts to further, if not accomplish, these broader goals.

Fifth, the “HBCU advantage,” which I uncovered in the previous analysis, persisted in the face of statistical controls for institutional selectivity. That is, all other things being equal, African American college graduates who attended HBCUs assumed higher status jobs than their counterparts at comparable (in terms of institutional quality) non-HBCUs. Not only does this provide substantial support for what I have termed the “HBCU advantage” relative to occupational status, but it also points to an area of concern—namely, the experiences of African American students at non-HBCUs or, in other words, predominantly White institutions. Indeed, countless studies have explored the experiences of Black students at White institutions (e.g., Allen, 1992; Fleming, 1984), but more information is needed to understand why Blacks at PWIs would assume lower status jobs compared to their same-race peers at HBCUs. It could be argued that PWIs lack the supportive environment that is typically ascribed to HBCUs, which according to research nurtures African American students’ aspirations and engenders their success (Palmer & Gasman, 2008). To the extent that this is true, the question becomes: What can be done to build and sustain that sort of environment at PWIs where the vast majority of Black collegians are educated today (Hoffman, Llagas, & Snyder, 2003)? Future research might explore this topic more closely and consider the role that mentoring (Strayhorn & Terrell, 2007), living-learning communities (Inkelas et al., 2006), and the availability of a “critical mass” (Pound, 1987; Tatum, 1997) of same-race peers play in Black students’ success at PWIs.

Finally, African American college graduates who attended HBCUs did not differ from their same-race peers who attended non-HBCUs in terms of job satisfaction. This is consistent with previous research (Strayhorn, 2008). The weight of evidence suggests that factors included in the statistical model have a small, virtually negligible influence on job satisfaction (i.e., $R^2 = 0.06$). In fact, results across both studies provide clear evidence that job satisfaction is largely a function of variables not included in the analysis. This makes sense as organization theory and previous empirical research suggest that institutional fit, professional roles and responsibilities, organizational commitment, and wages affect job satisfaction (Currivan, 1999; Martin & Bennett, 1996; Olsen, Maple, & Stage, 1995; Tett & Meyer, 1993). Researchers might consider this information when designing future studies. Future work would benefit from the inclusion of organization- and work-related variables such as job responsibilities, size of staff, degree of autonomy, wages and benefits, year of work experience, and the extent to which individuals feel prepared or “able” to perform their job (i.e., work self-efficacy).

Conclusion

In this study I expand upon prior labor market outcomes research, some of which is my own, by modeling the impact of attending a HBCU on post-BA earnings, occupational status, and job satisfaction for African American college graduates, controlling for differences in demographic traits, academic experiences, and institutional characteristics such as institutional selectivity. Findings raise important and necessary questions about issues of equity and diversity in higher education. And, a number of questions remain unanswered. Contrary to popular belief, institutional selectivity plays a relatively small role in explaining disparities between African Americans who attended HBCUs and their same-race peers at PWIs. This underscores the need for additional information to unravel the mechanisms that drive the HBCU “advantage” and “disadvantage” described in this article. While far from complete, this study represents an important and timely contribution to the labor market puzzle.

Table 1.1
Description of sample

Characteristic/Variable	%
Father's Educational Attainment	
Not HS graduate or equivalent	8.0
HS graduate or equivalent	30.2
Some postsecondary, less than 2 years	8.6
2 years of postsecondary, less than BA	13.6
Bachelor's degree	21.0
Advanced degree	18.6
Mother's Educational Attainment	
Not HS graduate or equivalent	6.4
HS graduate or equivalent	33.6
Some postsecondary, less than 2 years	24.8
2 years of postsecondary, less than BA	8.1
Bachelor's degree	17.0
Advanced degree	10.1
Gender	
Male	33.3
Female	66.7
HBCU Graduate	
No	67.0
Yes	33.0
Graduate School Enrollment	
No	69.4
Yes	30.6

Note. HS = high school, BA = bachelor's degree, HBCU = historically Black college or university.

Table 1.2
Mean and Standard Deviations of Independent and Dependent Variables

Independent Variables	<i>M</i>	<i>SD</i>
Gender	0.67	0.47
Age	26.25	7.82
Family income	39,159.12	10,031.90
Mother's level of education	3.08	1.48
Father's level of education	3.19	1.63
Type of high school	1.30	0.75
Marital status	4.04	2.35
Education aspirations	4.06	1.36
GPA	273.22	56.38
Hours worked	19.24	15.05
ACT Score	20.89	3.51
SAT Score	897.32	164.23
Control	1.41	0.53
Associate's degree	0.11	0.32
Major-specialized hard	0.17	0.38
Major-broad professional	0.15	0.36
Major-liberal arts	0.23	0.42
Attend graduate school	0.31	0.46
Institutional selectivity	1.67	0.27
Attend HBCU	0.33	0.47
Annual salary	\$30,842.62	14,849.69
SEI	58.48	22.82
Satisfaction	20.82	3.70
Weighted <i>N</i>	71,831	

Note. GPA = grade point average, HBCU = historically Black college or university, SEI = socioeconomic index.

Table 1.3
Summary of Model Predicting Earnings from Background, Precollege, College, and Related Variables

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
(Constant)	13761.99	7080.57		1.94	0.05
Gender	-2432.39	1214.61	-0.07	-2.00	0.05
Age	417.43	60.78	0.27	6.87	0.01
Father's education	-179.74	427.12	-0.02	-0.42	0.67
Mother's education	668.26	477.82	0.06	1.40	0.16
Marital status	726.31	145.51	0.20	4.99	0.01
High school type	1249.60	883.86	0.05	1.41	0.16
Family SES	-0.03	0.06	-0.02	-0.61	0.55
Educational aspirations	-84.04	369.52	-0.01	-0.23	0.82
College GPA	-13.12	12.93	-0.04	-1.02	0.31
Hours worked	75.12	41.96	0.07	1.79	0.07
ACT score	159.77	174.85	0.03	0.91	0.36
SAT score	2.05	3.70	0.02	0.55	0.58
Institutional control	864.38	1180.23	0.03	0.73	0.47
Associate's degree	-532.35	1928.67	-0.01	-0.28	0.78
Specialized hard major	3577.46	1706.36	0.08	2.10	0.04
Broad professional major	4639.73	1767.39	0.10	2.63	0.01
General liberal arts major	-264.76	1563.69	-0.01	-0.17	0.87
Attend graduate school	1498.14	1309.37	0.04	1.14	0.25
<i>Barron's</i> selectivity index	1036.81	2201.73	0.02	0.47	0.64
Graduate from HBCU	-2934.73	1302.54	-0.08	-2.25	0.03
<i>R</i>	0.24				
<i>R</i> ²	0.06				

Note. *B* = regression weight, β = standardized regression weight, SES = socioeconomic status, GPA = grade point average. HBCU = historically Black college or university.

Table 1.4

Summary of Model Predicting Occupational Status Attainment (SEI) from Background, Precollege, College, and Related Variables

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
(Constant)	16.77	10.98		1.53	0.13
Gender	2.28	1.88	0.04	1.21	0.23
Age	0.29	0.09	0.11	3.12	0.00
Father's education	-0.55	0.66	-0.03	-0.83	0.41
Mother's education	-0.55	0.74	-0.03	-0.74	0.46
Marital status	3.36	0.23	0.53	14.88	0.00
High school type	0.73	1.37	0.02	0.53	0.60
Family SES	0.01	0.01	0.05	1.42	0.16
Educational aspirations	1.26	0.57	0.07	2.20	0.03
College GPA	0.02	0.02	0.04	1.10	0.27
Hours worked	0.03	0.07	0.01	0.38	0.70
ACT score	-0.34	0.27	-0.04	-1.25	0.21
SAT score	-0.01	0.01	-0.02	-0.56	0.58
Institutional control	0.36	1.82	0.01	0.20	0.84
Associate's degree	-1.69	2.99	-0.02	-0.57	0.57
Specialized hard major	-1.84	2.64	-0.02	-0.69	0.49
Broad professional major	-8.20	2.74	-0.10	-2.99	0.00
General liberal arts major	-3.82	2.43	-0.06	-1.57	0.12
Attend graduate school	5.96	2.03	0.09	2.94	0.00
<i>Barron's</i> Institutional selectivity	7.72	3.41	0.07	2.26	0.02
Graduate from HBCU	4.51	2.02	0.07	2.23	0.03
<i>R</i>	0.62				
<i>R</i> ²	0.38				

Note. *B* = regression weight, β = standardized regression weight, SES = socioeconomic status, GPA = grade point average. HBCU = historically Black college or university.

Table 1.5
Summary of Model Predicting Job Satisfaction from Background, Pre-college, College, and Related Variables

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
(Constant)	19.49	1.69		11.54	0.00
Gender	-1.07	0.29	-0.15	-3.70	0.00
Age	-0.00	0.01	-0.01	-0.17	0.86
Father's education	-0.08	0.10	-0.03	-0.76	0.45
Mother's education	0.08	0.11	0.03	0.65	0.51
Marital status	-0.04	0.04	-0.06	-1.25	0.21
High school type	0.09	0.21	0.02	0.41	0.68
Family SES	0.01	0.00	0.04	1.01	0.32
Educational aspirations	-0.04	0.09	-0.02	-0.47	0.64
College GPA	0.01	0.00	0.11	2.75	0.01
Hours worked	0.02	0.01	0.08	1.91	0.05
ACT score	0.03	0.04	0.02	0.61	0.54
SAT score	-0.01	0.00	-0.08	-1.96	0.05
Institutional control	-0.21	0.28	-0.03	-0.76	0.45
Associate's degree	0.19	0.46	0.02	0.41	0.68
Specialized hard major	0.24	0.41	0.03	0.60	0.55
Broad professional major	-0.18	0.42	-0.02	-0.44	0.66
General liberal arts major	-0.19	0.37	-0.02	-0.51	0.61
Attend graduate school	0.07	0.31	0.01	0.23	0.82
<i>Barron's</i> institutional selectivity	0.24	0.53	0.02	0.46	0.65
Graduate from HBCU	0.14	0.31	0.02	0.45	0.66
<i>R</i>	0.24				
<i>R</i> ²	0.06				

Note. *B* = regression weight, β = standardized regression weight, SES = socioeconomic status, GPA = grade point average. HBCU = historically Black college or university.

Study Two

Long-Term Social Psychological Returns on Investment

The purpose of this study was to explore differences in various returns on investment (ROI) in postsecondary education comparing Black graduates from HBCUs to same-race counterparts from PWIs using nationally representative data from the National Survey of Black Americans (NSBA) provided by the Interuniversity Consortium for Political and Social Research (ICPSR) at the University of Michigan. A single research question guided this set of analyses: *Are there statistically significant differences between Black HBCU graduates and Black PWI graduates in terms of their occupational status, job satisfaction, self-esteem, Black identity, psychological distress, and life satisfaction, as measured by the NSBA?*

Methods

Design

This study is based on a secondary analysis of data from the NSBA (Waves 1 through 4) sponsored by the ICPSR at the University of Michigan. The NSBA was designed expressly for the scientific study of Black Americans with input from social scientists, students, and a national advisory board. The NSBA examines neighborhood-community integration, social services, religion, education, effects of race on social outcomes, and an array of social psychological factors such as self-esteem, race identity, group stereotypes, and life satisfaction, which makes it superior to more recent national surveys (e.g., *Baccalaureate & Beyond*) that include fewer Black Americans, no HBCUs, and/or no psychological measures. The NSBA employs a national multistage probability sample that generalizes to Black citizens in the U.S. aged 18 years or older. According to the survey's *Codebook*, Wave 1 was administered to 2,107 respondents, Wave 2 to 951 respondents, Wave 3 to 793 respondents, and Wave 4 to 659 respondents. For more information about the database, see Jackson et al. (1996).

Sample

The analytic sample included 288 Black respondents to all waves of the NSBA who graduated from a 4-year college or university, representing approximately 14% of the original base sample. The majority of respondents in the analytic sample were Black women (65%) and the average age was 47.6 years ($SD = 12.3$), ranging from 29 to 84 years. Over half (51%) of sample participants were located in the Southern region of the country, while 19% were in the Northeast, 24% in North Central, and 6% in the West. Fifty-four percent (54%) of participants who completed college attended an HBCU or predominantly Black institution while 46% attended a PWI. Statistics suggest that the sample is fairly representative of the adult Black population (Jackson et al., 1996).

Variables

The dependent variables in this study are return on investment (ROI) measures or proxies of labor market success—namely, occupational status attainment and job satisfaction—and four long-term social psychological assessments including self-esteem, Black identity, psychological distress, and life satisfaction.

Occupational status attainment was measured by converting each individual's occupational code to a measure of 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 (SEI) based on extensive research on occupational status (see Featherman & Stevens, 1982, for a full discussion of the SEI); higher scores are associated with higher status occupations such as scientific and highly technical jobs (e.g., engineer, medical doctor, surgeon) and other professions (e.g., professor). This variable is consistent with techniques used in previous studies (Ehrenberg & Rothstein, 1994; Lin & Vogt, 1996; Smart, 1986; Strayhorn, 2008; Trusheim & Crouse, 1981).

Job satisfaction was defined as the degree of pleasure or happiness derived by employees from their work, work relations, and work-related factors such as salary, benefits, work environment, advancement, and job security, in consonance with prior research (Fisher, 2000; Mau & Kopischke, 2001; Strayhorn, 2008). In theory, job satisfaction is based on the degree of congruence between an individual's skill and aspirations and the perceived or actual nature of the job (Bretz & Judge, 1994). Job satisfaction was measured using multiple items from the NSBA; response options ranged from 1 (*very dissatisfied*) to 4 (*very satisfied*).

Self-esteem was measured using multiple NSBA survey items drawn from Rosenberg's (1965) *Self-Esteem Index*. An example of this index is, "I feel that I'm a person of worth." Response options range from 1 (*low self-esteem*) to 4 (*high self-esteem*); higher index scores indicate higher levels of overall self-esteem. This index has been used in prior research on Black Americans (A. L. Riley, 2003).

Black identity was measured using multiple NSBA survey items that composed a *Black Identity Index* described in the codebook. Scores ranged from 1 to 4 with higher scores indicating stronger feelings of Black identity (i.e., ratings and beliefs that align with more Afrocentric views or perspectives). For more information, see Jackson et al. (1996).

Psychological distress was measured by computing an overall index that was equal to the mean of 10 NSBA survey items. A few examples of this index include: "During the past month, how much of the time did you feel... (a) under strain, stress, or pressure (b) in low spirits (c) moody" and so on. Item response options ranged from 1 (*none of the time*) to 4 (*all of the time*) and overall index scores were averaged so that higher scores indicate high levels of psychological distress. This index has been used in prior research (Ware, 1979) and Cronbach's alpha for internal consistency exceeds 0.89 in each Wave of the NSBA (Jackson et al., 1996).

Life satisfaction was defined as the degree of pleasure or happiness derived from one's activities over a lifetime, in consonance with prior research (A. L. Riley, 2003). A survey item asked participants: "In general, how satisfied are you with your life as a whole these days?" Response options ranged from 1 to 4, with higher scores indicating higher levels of personal well-being or life satisfaction. For more information, see Goodwin (2012).

Data Analysis

Several analytical procedures were used to investigate the ROI questions posed in this study. First, descriptive statistics and frequencies were computed to characterize the sample and to distinguish those who graduated from HBCUs from PWI graduates and those who did not attend or complete college at all. Independent samples *t*-tests were used to determine differences between HBCU and PWI Black graduate groups on both labor market outcomes and long-term social psychological indices; analysis of covariance (ANCOVA) was used to estimate group differences controlling for sex, where indicated.

Lastly, hierarchical linear regression techniques were used to measure the influence of such factors on selected outcomes, based on group difference results. Hierarchical regression analysis is "a method of regression analysis in which independent variables are entered into the

regression equation in a sequence specified by the researcher in advance. The hierarchy (order of the variables) is determined by the researcher's theoretical understanding of the relations among the variables" (Vogt, 1999, p. 129). This statistical design permitted the use of a rigorous set of statistical controls and isolated the "net effect" (see Study 1 for more) of HBCU attendance/graduation on the dependent variables (Owings, 1996; Thomas & Heck, 2001).

According to tolerance statistics, multicollinearity was not a problem for this investigation as the correlations between the independent variables are moderate to trivial and largely statistically nonsignificant. Moreover, correlations among independent variables were not a cause for concern.

Results

Descriptive statistics suggest that the NBSA sample of Black respondents who completed college were majority female (65%) and the average age at the time of Wave 4 was 47.6 years ($SD = 12.3$) with over half (51%) living in the Southern region of the United States.

HBCU versus PWI Comparisons

Independent sample *t*-tests were conducted to determine differences between HBCU and PWI Black graduates with respect to occupational status, job satisfaction, and 4 measures of social psychological factors including self-esteem, Black identity, psychological distress, and life satisfaction. HBCU and PWI Black graduates differed significantly in terms of Black identity, $t(221) = -2.82, p < 0.01$. That is, HBCU Black graduates reported higher Black identity scores ($M = 3.34, SD = 0.50$) than did their same-race counterparts who graduated from PWIs ($M = 3.15, SD = 0.49$). Interestingly, these differences persist even when controlling for sex using analysis of covariance (ANCOVA) techniques, $F(1,220) = 7.86, p < 0.01$, partial $\eta^2 = 0.03, R^2 = 0.035$, adjusted $R^2 = 0.026$. Table 2.1 presents summary statistics.

Independent sample *t*-tests revealed no other statistically significant differences between Black graduates in the sample on labor market or social psychological factors including psychological distress ($t[93] = 0.91, p = 0.37$), job satisfaction ($t[183] = 0.99, p = 0.32$), life satisfaction ($t[223] = 0.43, p = 0.67$), and self-esteem ($t[222] = 0.076, p = 0.94$); none of these tests were statistically significant using 0.05 as a significant threshold. And although HBCU Black graduates ($M = 56.05, SD = 20.15$) rank higher than PWI Black graduates ($M = 52.37, SD = 20.70$) with respect to occupational status or SEI, these differences only *approached* statistical significance ($p = 0.10$) for an exploratory study.

To further explore the statistically significant differences in *Black Identity* between Black graduates from HBCUs and their same-race counterparts from PWIs, hierarchical linear regression techniques were used to estimate the influence of the institution's racial composition (i.e., HBCU vs. PWI) on Black graduates' Black identity index scores, controlling for sex. Results of the final regression model were significant, $F(2,316) = 3.79, p < 0.05$. The sample multiple correlation coefficient was 0.15, indicating that approximately 2% of the variance in Black identity (adjusted $R^2 = 0.017$) could be accounted for by the linear combination of factors in the final model. Based on the regression results, graduating from an HBCU ($B = 0.144; \beta = 0.153$) tends to give Blacks an advantage over same-race PWI graduates in terms of their Black identity score. Table 2.2 presents the final model results.

Discussion

This study employed nationally representative survey data from the *National Survey of Black Americans* to estimate long-term labor market and social psychological differences for Black graduates from HBCUs and PWIs. Findings suggest a number of important conclusions. Overall, Black graduates from HBCUs score higher than their same-race peers from PWIs on the NSBA's *Black Identity Index*. And although differences failed to meet the threshold for statistical significance, results regarding occupational status (or SEI) *approach statistical significance* indicating that Black graduates from HBCUs generally assume higher status occupations when compared to Black graduates from PWIs.

Findings generally support conclusions from Study One and those reported elsewhere (Strayhorn, 2008), although results about graduates' Black identity represent a unique contribution of this study. More will be presented in a later section of the commissioned paper.

Table 2.1 *Group mean scores on Black Identity Index, HBCU vs. PWI*

Group	<i>M</i>	<i>SD</i>
PWI	3.15	0.49
HBCU/PBI	3.34	0.50
Total	3.25	0.50

Note. PWI = predominantly White institution, HBCU/PBI = historically Black college or university/predominantly Black institution; these were combined in the NSBA database.

Table 2.2 *Results of final regression model for Black Identity Index*

Model/Variable	<i>B</i>	<i>SE</i>	β
1			
Constant	3.27	0.10	---
Sex	-0.01	0.06	-0.00
2			
Constant	3.20	0.10	---
Sex	-0.00	0.06	-0.00
HBCU/PWI	0.14	0.05	0.15

Note: HBCU/PWI = historically Black [or predominantly Black] college or university/predominantly White institution, *B* = unstandardized beta. β = standardized beta.

Study Three

Voices from the Field: What Black HBCU Graduates Say about their Returns on Investment

Introduction

Most research studies exploring the return on investments in postsecondary education employ quantitative methods like those presented in the first two analyses that are part of this commissioned paper on HBCUs. While useful and generalizable to large numbers of African Americans and HBCU graduates (Thomas & Heck, 2001), quantitative studies are limited in their ability to uncover or unearth the experiences and perceptions of HBCU alumni who might offer details about *how* their college education at an HBCU has served them in life and *what* they have gained as a result of that investment. Qualitative methods are superior to quantitative techniques for achieving such naturalistic aims (Erlandson, Harris, Skipper, & Allen, 1993; Guba & Lincoln, 1981) and, thus, this third analysis is based on a qualitative approach described in the next section.

Methods

Research Design

Consistent with the sequential mixed methods explanatory design (Creswell, 2003) that guided the organization and sequences of studies presented in this commissioned paper (i.e., Quant-Quant-*qual*), this third study employed a constructivist qualitative approach involving one-on-one interviews with HBCU alumni and an open-ended demographic questionnaire. This approach was selected for several reasons, one of which is its epistemic underpinnings about the very nature of knowledge (i.e., that it's constructed) and how participants in a social setting construct multiple realities (Glesne, 2006). Furthermore, this approach has congruent positioning with my own ethics and values as a researcher; it allows me to “give voice” to a group of individuals (i.e., HBCU alumni) who are infrequently studied in the research literature and to do so without “doing violence” to their authentic voice (Lincoln & Guba, 1986).

Participants

Participants were selected purposefully using a snowball or chain sampling approach (Merriam, 1998) that has been used in my prior qualitative research on Black college students (e.g., Strayhorn, 2013; Strayhorn & Tillman-Kelly, 2013). As Patton (1990) aptly described, “The logic and power of purposeful sampling... leads to selecting information-rich cases for study in depth. Information cases are those from which one can learn a great deal about issues of central importance to the purpose of the research” (p. 46). Specifically, I worked with the presidents and provosts of several major HBCUs to identify and recruit a pool of prospective participants—that is, Black individuals who earned a bachelor's degree from an HBCU, identified as African American or Black, and were willing to talk with me about their experiences in school and since graduation. All prospective participants agreed to participate and this resulted in 8 exploratory interviews.

Participants all identified as African American or Black with only two expressing primary ethnic identification as “Haitian” and “Nigerian,” respectively. Participants ranged from recent graduates who attended their HBCU from 2003 to 2007 to older graduates who attended

their HBCU from 1978 to 1983. Academic majors included finance, political science, business education, business management, and psychology to name a few; minors included business, finance, and pre-law. All but one “entry-level” participant rated their current job as “mid-level” or “senior-level” (10 or more years) and annual salaries ranged from \$40,000 to more than \$70,000 per year. Participants reported having 2 to 6 jobs “since HBCU graduation” with the most recent graduate having the fewest jobs since graduation, as might be expected.

Data Collection

Data were collected via semi-structured, in-depth one-on-one interviews over a one-month period. The purpose of interviewing is to “find out what is in and on someone else’s mind” (Patton, 1990, p. 278). In this case, I wanted to know about their post-graduation experiences and what they perceive as the “return on their investment” in graduating from the HBCU they attended. Interviews were conducted in a way to elicit stories from each participant about their HBCU experience, any challenges and advantages, as well as what they perceive as gains or returns on investment and these procedures followed those recommended by methodologists (Vygotsky, 1987). Interviews, on average, lasted approximately 30 minutes, although they ranged from 25 to 50 minutes across the sample. Consistent with the study’s design (Kvale, 1996), interview length varied across participants because some needed more, or less, time than others to recall their college experiences (e.g., it was a recent memory for recent graduates), to convey their feelings about their HBCU experience through spoken words, and to understand the “motive[s]” for my inquiry, which will be discussed in a later section of this paper. In some cases, additional questions were resolved through follow-up correspondence with the interviewee via telephone, email, or in-person for one participant.

A semi-structured interview protocol was employed that included questions about each participant’s demographic background (e.g., race, sex), prior schooling experiences (e.g., HBCU attended, dates of attendance, academic major or minor), and perceptions of ROI (e.g., what’s your overall opinion of your experience?). Given the exploratory nature of this research, I pilot-tested an interview question set that was quite productive for this study: “If someone asked you “whether attending [your HBCU] has paid or is paying off for you, what would be your response and why?” Questions were designed to elicit recollections of notable experiences, people, or circumstances related to their HBCU experience and post-graduation ROI. Where necessary, follow-up probes were used to prompt reconstructions of HBCU graduates’ experiences (e.g., “Can you tell me about a time when...?”).

Since I wished for interviews to be candid, I promised participants confidentiality, which proved important to most of the respondents who were concerned about comments being used to diminish the important role that HBCUs play in the higher education enterprise. For example, three interviewees asked to see copies of my field notes and any recorded material from their interview as a way of inspecting the information that was shared in any subsequent report. Virtually all participants asked questions about my motives for the study, whether I had attended an HBCU, and who would see the results and for what purpose. Answering their questions, building rapport (where possible), and promising to protect the names of HBCU institutions seems to quell any concerns (Glesne, 1989).

Data Analysis

Interview data were analyzed in three stages using the constant comparison method, as described by Strauss and his colleagues (Strauss, 1995; Strauss & Corbin, 1998). First, field

notes and comments were read and re-read to generate initial categories of information or codes that represented “an initial plot of the terrain” (Miles & Huberman, 1994, p. 69) using key findings from Study #1 and Study #2 as a guide; this is known as open coding (Strauss & Corbin, 1998). Coding is the process of “organizing the material into ‘chunks’ before bringing meaning to those chunks” (Rossman & Rallis, 1998, p. 171), although in this study meaning was derived, in part, from results presented earlier in the paper (e.g., looking for comments about occupational status).

Next, codes were collapsed by grouping categories that seemed to relate to each other while leaving intact those that stood independent from all others. This smaller list of categories was used to generate “supercodes,” or preliminary themes. Lastly, themes were compared and contrasted to understand the degree to which they were similar; closely related themes were collapsed or renamed so that the “whole name” reflected the sum of its parts. A final list of themes was derived and represent the major finding of the qualitative study in keeping with findings presented earlier.

Findings

Three major themes were identified using the analytic approach described in the previous section: (a) HBCU graduates are socialized to assume leadership and high status occupations, (b) HBCU graduates’ Black identity was affirmed and strengthened in college, and (c) HBCU graduates feel as if they have received “significant returns” on their investment although returns are not necessarily economic, financial, or monetary. Each of these themes is unpacked and explained briefly below, using verbatim quotes or paraphrased statements from interview participants to illustrate the meaning and significance of the finding.

Assuming Higher Status Occupations

Most HBCU graduates with whom I spoke talked at length about the role that HBCUs play in educating African Americans for positions of leadership, influence, and high status. Some shared stories about their HBCU institutions’ history that involved educating strong Black leaders and intellectuals such as Dr. Martin Luther King, Toni Morrison, Rev. Jesse Jackson, and hiring well-known professors such as WEB DuBois, to name a few. In fact, many of them shared how strong supportive relationships with HBCU faculty empowered them to excel academically and encouraged them to assume positions of leadership and high status occupations. Consider the following:

I am now on the path to managing all aspects financial for a multi-million dollar company.... My finance professor [name removed] at [said HBCU] was definitely a big factor in my success. He always pushed, encouraged, and most importantly practiced what he preached. Aside from his professional teaching career, he owned two franchised restaurants, a dealership and invested wisely. He shared those lessons with us, as his students, and always pushed us to do well too. He would say don’t plan to work *for* people [emphasis added]...work for yourself.

Indeed, several of the participants that I interviewed were at the “top of their field” or headed in that direction. And consistent with findings from Study #1, participants

indicated satisfaction with “returns” or rewards beyond annual salary to include benefits, perks, and opportunities for advancement. Consider the following:

Within 5 years I will be the Controller of my company making a six-figure salary, plus bonus, and company perks which sometimes matter the most. I usually don't talk about my salary but I am very proud of where my HBCU education has taken me and equating it into dollars from a business standpoint...attending [said HBCU] has definitely given me a enormous return on investment and helped me achieve a senior level job in a selective career.

Several interview participants shared that they were “just one of several” HBCU graduates in their family, reflecting a long-standing conclusion from the literature that HBCUs have educated large numbers of African Americans at *all levels* of postsecondary education and, still today, produce the vast majority of Black doctors, lawyers, teachers, and those who enter high status occupations (Strayhorn, 2008). Consider the following comments from a participant:

My grandmother reminded me about her [HBCU alma mater] and encouraged me to apply. I am a third generation graduate of [said HBCU], my grandparents met at [said HBCU] and I have an aunt and uncle who completed their studies [there] as well. Each have received additional advanced degrees, certificates, and work in ‘good jobs’ for major corporations. I would say that graduating from [said HBCU] has paid off for me and my family.

Comments like those shared in this section reveal the important role that HBCUs play as part of the higher education enterprise, educating large numbers of African Americans, preparing them for leadership in the Black community and larger society, and making them ready to assume high status occupations.

Affirming Black Identity

A second major theme that relates to results from the secondary analyses of existing survey data presented earlier in Study #1 and Study #2 is that Black identity and culture tend to be affirmed, celebrated, recognized, even valued, at HBCUs. Consequently, HBCU graduates report stronger Black identity ratings on surveys like those presented in Study #2 and speak more candidly about Black culture, race and ethnicity, the contributions of Black Americans to society and beyond.

Participants shared many direct comments that reflected results from the NSBA analysis presented in Study #2: HBCU graduates report higher Black identity scores after graduation or later in life, compared to same-race graduates from PWIs.

Prince (a pseudonym) shared the following:

I knew that I wanted to stay within state because I wanted to be close to my family. My parents were the ones who urged me to attend an HBCU because I grew up around mostly Caucasian people. The purpose was for me to learn about my culture and to be proud of being an African American. I was ashamed of being Black because the environment in which I was brought up said that African Americans were less than. We faced numerous events of racism in our

neighborhood because we were the only black family and I started to resent that...that's why they wanted me to go to [said HBCU].

Several expressed that faculty and staff at HBCUs played a major role in affirming their sense of self (e.g., confidence) and racial identity. Here are a few excerpts:

Although I'm a Black immigrant from Nigeria, my academic advisor took me under his wings and helped me realize my potential and strengths...thanks to his pushing and preaching that gave me confidence and set me up to compete with anyone.

[HBCU] faculty and staff invest in their students and they pushed me to be more than 'just a football player' even though I didn't see myself as more than a football player and quite frankly didn't want to be anything *more than* a football player when I first enrolled. They taught me that I was more, had more, and had to do more as Black male.

Others shared how various aspects of their experience at the HBCU they attended affirmed their racial/ethnic (Black) identity and taught them about Black culture. Consider the following remarks:

During my matriculation at [said HBCU], I was taught about the history of the school and embracing our culture and teaching everyone about Black people and [the HBCU]. I joined several social organizations and a lot of them were Black-focused like the UNCF [United Negro College Fund], NAACP [National Association for the Advancement of Colored People] and I excelled academically but I also became more aware of who I was as a Black person and what my people had done to build this country...and that motivated me.

While institutional histories, faculty support, family legacies, and campus involvement experiences affirmed Black HBCU graduates' racial identity, there were also aspects of the campus ecology that strengthened their sense of self too. For instance, participants talked about statues of historical Black figures on campus, names of famous African Americans on buildings, and how the presence of a critical mass of Blacks on campus shaped or changed their racial beliefs.

Nonmonetary Returns on Investment

Participants spoke at length about their respect for the HBCU they attended, how it prepared them (and others) for leadership and high status occupations, and affirmed their ethnic/racial identity, but over half of them stressed that the "returns on investment" are not always monetary, financial, economic, or "easily counted," as one put it. Consider the following:

I think my education from [said HBCU] is paying off tremendously but not just in dollars...it's in 'sense' too. I learned how to do a lot. How to persevere. How to work hard and wait for gratification. How to stand out even when your school is less well known. I was one of 7 new hires in my company and the only African American. I also attended a school that majority had never heard of and other new

hires attended very prestigious PWIs. Still I worked hard, used all my skills, had grit and surpassed all the others in the end and I owe it to [said HBCU] for that.

Some attributed their personal and professional career success to opportunities that they had during college at the HBCU they attended and these also represented other nonmonetary “returns” on investment. Consider the following:

The Cooperative Education program at [said HBCU] was amazing and our [director] prepped us for the big interviews. Being required to complete 2 co-ops and co-op classes before graduation prepared me working for large corporations and perfected my interviewing skills. I mean in the end this might lead me to more money, but right now I see it as a ‘return on investment’ because I’m better prepared than those who went to PWIs or other schools.

A host of other nonmonetary “returns” were mentioned over the course of interviews; nonmonetary but significant returns included grit, perseverance, satisfaction with one’s professional field, confidence, ability to learn, discipline, and “friends for life.”

Discussion

Recall that the purpose of this study was to elicit qualitative data through one-on-one interviews as a way of explaining or further investigating results from the quantitative analyses presented earlier in this commissioned paper (Study #1 and Study #2). Analyzing interview data from 8 HBCU graduates, I identified three themes that align with results from the two quantitative studies presented earlier: (a) HBCU graduates are socialized to assume leadership and high status occupations, (b) HBCU graduates’ Black identity was affirmed and strengthened in college, and (c) HBCU graduates feel as if they have received “significant returns” on their investment although returns are not necessarily economic, financial, or monetary. Qualitative results not only reflect results from the survey analyses but offer deeper insights into how, why, and to what extent these findings are true for Black HBCU graduates.

Findings from the present study also provide insight into the ways in which campus and other professionals and policymakers can work to promote success and greater returns for Black HBCU graduates specifically, and minority-serving institution (MSI) graduates generally. These conclusions and implications are highlighted in the final section of this paper.

Recommendations for HBCU Research and Policy

“Investments in education pay off for individuals [and societies] in many ways” (Hout, 2012, p. 379). Black graduates from HBCUs assume higher status occupations, develop stronger Black identities, and report nonmonetary returns on their investment. Still there’s fairly consistent evidence that they earn lower annual salaries when compared to similarly-situated Black graduates from PWIs, and there are no significant differences between Black graduates from HBCUs and PWIs in terms of job satisfaction, life satisfaction, self-esteem, and psychological distress. While the three studies presented in this commissioned paper shed light on a number of important topics and issues related to ROI, there are a number of questions left unanswered, and important directions for future research and policy.

National trends indicate that there are approximately 103 HBCUs among the over 4,300 colleges and universities in the United States, representing less than 3% of all postsecondary institutions. This small segment of the higher education enterprise enrolls upwards of 20% of all Black college students and produces 25% of all Black graduate degrees in science, technology, engineering, and mathematics (STEM) fields. Whether or not the returns measured in this paper hold for Black HBCU graduates in STEM fields is an open question. Data are needed that can be mined for this purpose—unfortunately, the vast majority of existing datasets have relatively few Black students in large samples, adequate numbers of Black students overall but relatively few earning degrees in STEM, or adequate numbers of Black students in STEM fields but relatively few HBCUs included in the institutional sample. Future survey efforts should be designed with these goals in mind using appropriate oversampling techniques, weighting effects, and stratified random sampling designs where necessary.

Datasets that permit ROI analysis are hard to come by and even those that are readily available are limited in a number of ways. Databases like *Baccalaureate and Beyond* or *Educational Longitudinal Study* (ELS) sponsored by the Institute for Education Sciences within the US Department of Education require restricted licenses to conduct the kind of analysis that most ROI researchers have in mind. Restricted license processes require time, resources, protections (e.g., firewalls) and can involve long wait-times for data to be released. Other databases (e.g., NSBA) that might be more readily accessed through online warehouses like ICPSR tend to be dated, incomplete (i.e., might not include all variables thus increase model misspecification), or restricted to scales and indices created by the sponsoring organization and do not permit scale creation, recoding, or indexing by the secondary analyst. Future efforts should address these issues by providing open access to high-quality data about HBCUs and their graduates and flexibility for researchers to create or compute indices and scales; and I include robust measures of the factors and variables of interest to ROI analyses.

Much can be done to extend what we know about ROIs for all students, MSI students, and HBCU students specifically. The following three points are offered as recommendations for the future agenda on this topic:

1. More research is needed to explore the nonmonetary returns on investment for Black graduates from HBCUs. Future studies and surveys should include measures like those examined in Study #2 including self-esteem, psychological distress, and life satisfaction. Other outcomes or returns could be considered such as well-being, professional identity, engagement in prosocial activities, and even health morbidity outcomes. Integrated panel studies are recommended that draw together data from multiple large surveys, especially those that combine institutional variables with individual factors, financial information, academic transcripts, and post-graduation evaluations.
2. Findings from this study converge with those presented elsewhere (Strayhorn, 2008) and strengthen the conclusion that Black graduates from HBCUs assume higher status occupations but generally earn lower salaries. It is still less clear just why this is the case, although I have argued that employers' biased preferences likely play a role. Future research and data should be marshaled to explore employer preferences, how they play out in hiring decisions and salary judgments, and ways to reduce, if not eliminate, such disparities. Several designs and techniques can be used, although I am often reminded of the old "resume experiments" where employers received resumes that were virtually identical except for the name or "expressed [racial] identity" of the person; employers

consistently rated applicants perceived to be Black lower than those perceived to be White and offered them lower pay on average. Using similar designs or real data from Black graduates of HBCUs might be a fruitful step forward for ROI research.

3. Contrary to popular belief, institutional selectivity plays a relatively small role in explaining ROI disparities between Black graduates who attended HBCUs and their same-race peers at PWIs. This underscores the need for additional information to unravel the mechanisms that drive the HBCU “advantages” and “disadvantages” described in this commissioned paper. Institutional factors might include perceived prestige, endowment, spending on support services, faculty productivity, and ranking according to *US News and World Report*, to name a few. Future research efforts should incorporate such measures and others deemed important for explaining variance in the outcomes that we desire for students.

Conclusion

The studies presented in this commissioned paper expand upon prior labor market outcomes research, some of which is my own (Strayhorn, 2008), by modeling the impact of attending a HBCU on post-BA earnings, occupational status, and job satisfaction for African American college graduates, controlling for differences in demographic traits, academic experiences, and institutional characteristics such as institutional selectivity (Study #1). Results also demonstrate that Black graduates from HBCUs report stronger racial identity than their same-race peers who graduated from PWIs; this breaks new ground on ROI research by exploring long-term social psychological outcomes. And insights offered in one-on-one interview (Study #3) generally converge with those from the quantitative studies about the influence of HBCUs on Black graduates.

Taken together, findings raise important and necessary questions about issues of equity and diversity in higher education. While far from complete, results presented herein represent important and timely contributions to the ROI puzzle for HBCUs. There are many more pieces needed to solve this puzzle in the future.

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