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An Examination of the Relationship between Revenue Sources and Retention Rates at Private Historically Black Colleges and Universities

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Abstract

The purpose of this quantitative study was to examine the relationship between revenue sources and retention rates at the nation's private, not-for-profit, baccalaureate degree-granting historically Black colleges and universities (HBCUs). The major goal was to examine whether revenue sources were predictive of retention rates. Data from46 private, not-for-profit, baccalaureate degree-granting institutions (IPEDS, 2017) were used in the analysis. The results indicate that endowment assets show positive and statistically significant association with retention rates. The study also demonstrates that only endowment assets and private gifts were significant predictors of retention rates. This study has policy, leadership, and practical implications. This study provides a foundation on the examination of the relationship among revenue sources and retention rates.

Keywords: Retention at Private Historically Black Colleges and Universities, Retention Study, Resource Dependence at Private HBCUs

Introduction

Private HBCUs do not receive the same state-supported funding as their counterparts (Beamer, 2011; Peruso, 2010, 2012). This often leads to greater reliance on tuition and fees, causing them to be prone to tuition dependency (Campbell, 2017). "All of our private Historically Black Colleges and Universities (HBCU) suffer a lack of financial resources to some degree-some much more than others. It follows, then, that the private HBCUs must always find ways to accrue and better manage their limited financial resources" (Fort, 2013, p. 55). Today, there are 101 Historically Black Colleges and Universities, consisting of 47 four-year private, 40 four-year public, 10 two-year public institutions, three post-baccalaureate private, and one two-year private institution (National

Center for Education Statistics [NCES], 2017). Collectively, they comprise only 3% of the nation's institutions of higher learning (Brooks & Starks, 2011; Jackson & Nunn, 2003). However, they confer more than one-third of the four-year degrees awarded to African Americans, and HBCU graduates account for the following African-American degree attainment proportions: 75% of PhDs, 46% of business executives, 50% of engineers, 80% of federal judges, 50% of doctors, and 50% of attorneys (Brooks & Starks, 2011).

In contrast to the societal accomplishments of HBCUs, a number of researchers ponder the prospect of their survivability given the current challenging fiscal environment in which institutions of higher education operate (Betsey, 2008; Brooks & Starks, 2011). Since the 1980s, HBCUs have struggled with the financial ramifications associated with decreasing enrollment levels, among other adverse trends (Brooks & Starks, 2011). Thus, amidst an environment characterized by fiscal and operational challenges, a number of constituencies are beginning to question the HBCU's attractiveness as an educational option and their overall relevance (Canty, Blanc, Mack, & Davis, 2013; Kim, 2011). Alternatively, Brown and Ricard (2007) maintained that many view HBCUs as instrumental agents in preserving components of African-American ethnic identity. Bracey (2017) concluded that HBCUs are still necessary in our society today because they have been the "mainstay of educating African Americans at the colleges and universities levels."

Unfortunately, there exists a heavy reliance on government funding, in various forms, for HBCUs (Evans, Evans, & Evans, 2002). Canty et al. (2013) cautioned institutions regarding this financial posture with respect to its inherent fiscal instability and potential for setting the stage for reactionary leadership of institutions. HBCU issues regarding the lack of financial resources have begun to be integrated into larger discussions of their relevancy, survivability, and performance against their academic missions (Canty et al., 2013). Few HBCUs have the resources to support student success without adequate state and federal funding (Richards &Awokoya, 2012).
Previous literature on retention rates at HBCUs focus on public HBCUs, rather than private HBCUs, so this study bridged the research gap. HBCUs were created to provide power and possibilities to underserved and underrepresented students. Private and public HBCUs play critical role in broadening the participation of African-American students in education for the public good. Retention and graduation rates, despite being criticized as unrepresentative and misleading, are an important part of accountability systems, and they frequently have been used as indicators of institutional quality and effectiveness in education research (Pike & Graunke, 2015). Private HBCUs depend on tuition as the primary source of revenue, and rely on student enrollment, retention, and progression as stable sources of revenue. Since private HBCUs have significantly lower endowments and higher tuition rates than its public counterparts, the institutional resources available to them are limited, demonstrating the somewhat difficult circumstances and environments in which they function and the challenges that they face (Nettles, Wagener, Millett, &Killenbeck, 1999).

Revenues at Private Historically Black Colleges and Universities

Private HBCUs have struggled with economic health since the beginning of their existence (Cody-Mitchell, 2001). The author also stated that student enrollment, revenue growth, and expenditure patterns have all been factors that have contributed to their financial health. In comparison to their public counterparts, private HBCUs often experience more financial distress (Roebuck &Murty, 1993; Thompson, 1973). Private HBCUs do not receive the same state-supported funding as their counterparts (Beamer, 2011; Peruso, 2010). This often leads to a greater reliance on tuition and fees, causing them to be prone to tuition dependency (Campbell, 2017). At most private HBCUs, as much as 90% of operating revenues are obtained from tuition and fees (Gasman, 2009; Goldstein, 2005; Lee & Keys, 2013). In addition to the lack of state funding, private HBCUs are also at a competitive disadvantage against institutions that are better funded or have larger endowments (Gasman & Bowman, 2011). This history of financial disparity has left private HBCUs financially disadvantaged, threatening their mission of serving low-income students who often do not have the means of obtaining a college degree (Campbell, 2017).

In response to private HBCUs' persistent financial crisis, the United Negro College Fund (UNCF) was established in 1944. UNCF was the first American educational organization to utilize a cooperative fundraising strategy. The UNCF sought to ease the financial burden of private institutions through the organization of nationwide fundraising campaigns with the hopes of raising the revenue needed by the private HBCUs. UNCF's first campaigned yielded $765,000 on behalf of its then 27 member organizations (Fordyce, 1995). This was more than three times the amount the institutions raised individually during the previous fiscal year. Since its establishment,

the UNCF continues to provide financial resources to its members. Today, UNCF awards over 10,000 scholarships, fellowships, and internships under 400 programs, solely by contributions, foundations, families, and individual (Awokoya, 2014).In today's political, economic, and leadership challenges, UNCF is a relevance as ever in making positive impact on students that attend HBCUs as well as in the development of federal policies that affect students (Reid, 2011).

As noted by Gasman (2010) these institutions have struggled to increase annual giving, build endowments, and secure substantial financial gifts. Additionally, these tuition dependent private HBCUs often lack the strategies to secure significant external funding (Gasman, 2009, Goldstein, 2005; Lee & Keys, 2013). Private gifts, which include alumni giving, are a central aspect of higher education, making up ten percent of universities' operations (Drezner, 2010). When combined with endowment assets, this number increases (Drezner, 2010). Absent of these dollars, which are used to supplement tuition and other institutional income, universities would be unable to meet fiscal obligations or curricular goals (Brittingham &Pezzullo, 1990; Poock& Siegal, 2005).

Retention

Kuh, Cruce, Shoup, Kinzie, and Gonyea (2008) examined the effects of student engagement on first-year college grades and persistence in a quantitative study of 6,193 students with complete data on variables used in their analysis. The authors found that student engagement in educationally purposeful activities is positively related to academic outcomes as represented by first-year student grades and by persistence between the first and second year of college. This is especially evidence for persistence at the same institution.

Pike and Graunke (2015) examined the effects of institutional and cohort characteristics on retention rates in a quantitative study of 252 colleges and universities across six cohorts. Results indicated that unobserved heterogeneity was a significant issue in the study, traditional regression methods may overstate the effects of institutional characteristics on retention rates, and the effects of institutional and cohort characteristics were essentially stable over time and across cohorts. This study examined the effects of institutional and cohort characteristics on one-year retention rates using random effect and fixed effect regression models for panel data.

Revenues and Retention

Berger and Kostal (2002), in a quantitative study, examined financial resources, regulation, and enrollment in U.S. public higher education using secondary data obtained from the Digest of Education Statistics. The findings of this study suggest that it is important to ensure a reasonable level of tuition and a sufficient amount of state and local appropriations to meet the goals of maintaining high enrollment. Davis (2015) explored how a black college survives the economic recession in a qualitative study of one HBCU which suffered extreme financial burden within the past five years, maintained the same presidential leadership throughout the financial crisis, and was effectively handling the financial burdens. Findings indicated that pruning operations and enforcing strict fiscal policies, implementing effective marketing strategies, involving faculty in strategic planning, and revising and implementing tenure and promotion policies were effective in how an HBCU used a number of resources and strategies to serve the community while also reversing a severe financial deficit.

Purpose of the Study

The purpose of this quantitative study was to examine the relationship between revenue sources and retention rate at private HBCUs in the United States. While there is a significant amount of general research about how revenues impact retention in higher education, few of these studies focus on private HBCUs. The independent variable is revenue sources, defined as the inflow of resources or other enhancement of net assets of an institution (Integrated Postsecondary Education Data System[IPEDS], 2017). The dependent variable is retention rates, defined as a measure of the rate at which students persist in their educational program at an institution, expressed as a percentage. For 4-year institutions, this is the percentage of first-time bachelors (or equivalent) degree-seeking undergraduates from the previous fall who are again enrolled in the current fall (IPEDS, 2017).

Research Questions

In order to conduct a comprehensive research study on the relationship between revenue sources and retention rates at private HBCUs, strong research questions were posed to guide the focus of the study:

RQ1. What is the relationship between revenue sources and retention rates at private Historically Black Colleges and Universities?

RQ1A. What is the relationship between federal grants and contracts, and retention rates at private Historically Black Colleges and Universities?

RQ1B. What is the relationship between state grants and contracts, and retention rates at private Historically Black Colleges and Universities?

RQ1C. What is the relationship between private gifts, grants and contracts, and retention rates at private Historically Black Colleges and Universities?

RQ1D. What is the relationship between endowment assets and retention rates at private Historically Black Colleges and Universities?

RQ2. Are revenue sources predictive of retention rates at private Historically Black Colleges and Universities?

Theoretical Framework

In order to conduct a comprehensive research study such as this, two theoretical frameworks wereused to frame and ground the study: Pfeffer and Salancik's (1978) Resource Dependence Theory (RDT) and Tinto's (1975) Model of Student Retention.

Resource Dependence Theory

Since the introduction of Resource Dependence Theory (RDT) over thirty years ago, it has been used in numerous fields of research to explain how organizations reduce environmental interdependence and uncertainty (Hillman, Withers, & Collins, 2009). Pfeffer and Salancik (1978) conceptualized that sources of organizational power are circumscribed by relationships with external parties, and the associated consequences that result. However, these external parties can have two sources of power over an organization by determining if an organization receives the resources it needs, and by determining how the organization uses the resources (Bess & Dee, 2008).

Conceptually, RDT consists of three core tenets: the importance of social context, institutions' formulations of policies to increase autonomy, and the acknowledgement of power as an essential element to understanding organizational actions (Davis & Cobb, 2009). From these tenants, institutional options about managing resource dependence arises, including reduced interest in resources, co-optation through integrating dominant party involvement in organizational power structure, organizational power enhancement through organizational growth via mergers and acquisitions, alliances with peer organizations, and identification and leveraging of alternative sources of supply (Casciaro &Piskorski, 2005; Davis & Cobb, 2009). This study focuses on the latter, the identification and leveraging of sources of supply, naming revenue sources including but not limited to federal and state grants and contracts, private gifts, and endowments.

Tinto's Model of Student Retention

In an effort to gain more knowledge about the theoretical frameworks that surround student success, researchers and higher education practitioners have employed the work of Vincent Tinto (1975). Tinto's (1993) theory focuses on three main reasons for student departure: academic difficulties, student inability to resolve educational and occupational goals, and students' failure to become involved and remain involved in the institution's intellectual and social life. His theory proclaims that students must integrate into the formal and informal academic social systems in order to remain in college.

Tinto's work has impacted how student retention is handled at the university level. Tinto asserts the student success and retention is not only the responsibility of the student, but of the university. Tinto proclaims that upon establishing retention policies, institutions must also discern their own goals and commitments in addition to those of the individual students (Tinto, 1993). The author also states that institutions should frontload student retention efforts. He further explains that effective retention programs put student welfare ahead of institutional goals, are committed to the education of all students, and that effective retention programs are committed to the inclusion and development of social and educational communities, which integrate students (Tinto, 1993). Tinto asserts that positive academic and social system interactions positively impact retention as opposed to negative academic and social system interactions which lead to students' departure from school (Tinto, 1997, 1998, 1999). Academic and social systems, programs, and initiatives require the necessary funding and resources for effective and impactful implementation. Due to the lack of financial resources at private HBCUs, the institutions must find

ways to acquire and manage their scarce resources (Fort, 2013). These resources are vital for student success and retention.

Method

This study used an explanatory correlational research design to examine the relationships between revenue sources and retention rates at private, not-for-profit, baccalaureate degree-granting HBCUs. Data analysis included descriptive and inferential statistics that include multiple analyses of variance (ANOVA) and multiple regression models.

Sample

There are currently 101 HBCUs; of those, 47 are private, not-for-profit, baccalaureate degree-granting institutions (NCES, 2017). Baccalaureate degree-granting HBCUs are those institutions designated by the Carnegie Foundation and includes four-year degree-granting "institutions where baccalaureate or higher degrees represent at least 50 percent of all degrees but where fewer than 50 master's degrees or 20 doctoral degrees were awarded during the update year" (http://carnegieclassifications.iu.edu/classification_descriptions/basic.php).The sample for this study included 46 private, not-for-profit, baccalaureate degree-granting HBCU institutions (IPEDS, 2017). Interdenominational Theological Center, Meharry Medical College, and Morehouse School of Medicine are private HBCUs, but were excluded from the study because these are post baccalaureate institutions. This criterion reduced the sample to 47 institutions in the study. Additionally, Simmons College of Kentucky reported insufficient retention rate data and was also excluded from the study. Therefore, the sample includes 46 of the 47 not-for-profit four-year private HBCUs. Data were collected on all members of this specifically defined population. The sample size utilized for this study was that of the institutional population.

Data Collection

In this study, secondary data collected by IPEDS were used. The IPEDS program department was founded in 1992. Currently it is a system of 12 interrelated surveys conducted three times annually by the National Center for Educational Statistics (NCES), the federal entity primarily responsible for collecting and analyzing data related to education in the U.S. and other nations (IPEDS, 2017). NCES is a part of the Institutes for Education Sciences within the United States Department of Education. "NCES fulfills a Congressional mandate to collect, collate, analyze, and report complete statistics on the condition of American education; conduct and publish reports; and review and report on education activities internationally" (IPEDS, 2017) All institutions that participate in, or apply to participate in any federal financial assistance programs authorized by Title IV of the Higher Educational Act of 1965 are required to completed the IPEDs surveys.

Variables

Four independent variables that include the following revenue sources: federal grants and contracts; state grants and contracts; private gifts, grants, and contracts; and endowment assets for the 46 private, not-for-profit, baccalaureate degree-granting HBCUs during the years 2010, 2011, 2012, 2013, 2014, and 2015 were used. The dependent variable is retention rate for the 46 private, not-for-profit, baccalaureate degree-granting HBCUs during the years of 2010, 2011, 2012, 2013, 2014, and 2015. Following are detailed descriptions for each variable.

- *Federal grants and contracts (FGC)*—Transfers of money or property from the Federal government to the education institution without a requirement to receive anything in return. These grants may take the form of grants to the institutions to undertake research or they may be in the form of student financial aid (used for reporting on the Finance component; IPEDS, 2017).
- *State grants and contracts (SGC)*—A sum of money or property bestowed on a postsecondary institution by a state government. These amounts can be treated as an allowance, an agency transaction, or as a student aid expenses in the institution's general purpose financial statements and are reported differently depending on their treatment. Generally, however, private institutions report these grants as allowances when applied to the student's account and as state grant revenues when received (IPEDS, 2017).
- *Private gifts, grants, and contracts (PRIV)*—Revenues from private donors for which no legal consideration is involved and from private contracts for specific goods and services provided to the funder as stipulation for receipt of the funds. Includes only those gifts, grants, and contracts that are directly related to instruction, research, public service, or other institutional purposes. Includes monies received as a result of

gifts, grants, or contracts from a foreign government. Also includes the estimated dollar amount of contributed services. (IPEDS, 2017).

- *Endowment Assets (END)*—Gross investments of endowment funds, term endowment funds, and funds functioning as endowment for the institution and any of its foundations and other affiliated organizations (IPEDS, 2017).
- *Retention Rate (RET)*—A measure of the rate at which students persist in their educational program at an institution, expressed as a percentage. For four-year institutions, this is the percentage of first-time bachelors (or equivalent) degree-seeking undergraduates from the previous fall who are again enrolled in the current fall. For all other institutions, this is the percentage of first-time degree/certificate-seeking students from the previous fall who either re-enrolled or successfully completed their program by the current fall (IPEDS, 2017).

Data Preparation

The following sequences of steps were followed in data scrubbing:

1. The existing financial values were averaged to fill in missing values.
2. The following universities were eliminated from the analysis: Interdenominational Theological Center, Meharry Medical College, and Morehouse School of Medicine. While these institutions are private HBCUs, they are post baccalaureate degree-granting institutions. Simmons College of Kentucky is a not-for-profit 4-year private HBCU. However, Simmons College of Kentucky provided insufficient retention rate data, and has been removed from the study.
3. Financial values were converted into constant dollars with 2015 as the base year. This enabled comparison of financial data across years.

Data Analysis

Several statistical procedures were utilized to answer the research questions in the study. Those statistical procedures included descriptive, multiple ANOVAs, and multiple regressions. Descriptive statistics were utilized to gain a better understanding of the general tendencies, the spread of scores, and understanding how the revenue source and retention scores of each institution relate to one another (Creswell, 2012). Multiple analyses of variance (ANOVA) were conducted to answer RQ1, RQ1A, RQ1B, RQ1C, and RQ1D, which examines the relationships between revenue sources and retention. For each revenue source a separate ANOVA was performed for each year (2010-2015) of retention rates. Multiple regression was used to answer RQ2.

Research Question 1.*What is the Relationship between Revenue Sources and Retention Rates at Private Historically Black Colleges and Universities?* This question dealt with the nature of relationship between revenue sources and retention rates. The analysis for this research was done by examining the correlation of the two variables in question (see Table 1). ANOVA was used to compare universities over time and to explore the data and answer any questions about group comparisons (see Table 2). This method of ANOVA treats each university as a group, and generates comparisons between university groups.

Table 1: *Correlations of Retention Rates and Revenue Sources*

		Retention Rate	Federal Grant	State Grants	Local Grants	Private	Endowment
Retention rate	Pearson Correlation	1	.363**	-.084	.048	.373**	.463**
	Sig. (2-tailed)		.000	.166	.430	.000	.000
	N	276	276	276	276	276	276
Fed Grant Constant	Pearson Correlation	.363**	1	.069	-.033	.344**	.785**
	Sig. (2-tailed)	.000		.250	.584	.000	.000
	N	276	276	276	276	276	276
State Grants Constant	Pearson Correlation	-.084	.069	1	.042	.040	.000
	Sig. (2-tailed)	.166	.250		.489	.512	.994
	N	276	276	276	276	276	276
Local grants Constant	Pearson Correlation	.048	-.033	.042	1	-.080	-.049
	Sig. (2-tailed)	.430	.584	.489		.184	.418
	N	276	276	276	276	276	276
Private Constant	Pearson Correlation	.373**	.344**	.040	-.080	1	.471**
	Sig. (2-tailed)	.000	.000	.512	.184		.000
	N	276	276	276	276	276	276
Endowment Constant	Pearson Correlation	.463**	.785**	.000	-.049	.471**	1
	Sig. (2-tailed)	.000	.000	.994	.418	.000	
	N	276	276	276	276	276	276

** Correlation is significant at the 0.01 level (2-tailed).

Table 2*: Correlations of Retention Rates and Revenue Sources over Time*

Year	Federal Grants	State Grants	Local Grants	Private	Endowment
2010					0.387**
2011					0.389**
2012	0.305*				0.403**
2013	0.466**			0.440**	0.534**
2014	0.464**			0.530**	0.521
2015	0.402**			0.438**	0.487**

*=significant at $p<0.05$; **=significant at $p<0.001$

To create more dimensions in the analysis and adhere to the analysis plan, the universities were divided into four groups depending on the quartile distribution of the retention rates. The average retention rate during the six-year period 2010-2015, was 60.85. The minimum retention rate was 37.67 and maximum being 91.33. The percentile distributions were 25th percentile at 50.90. Depending on the quartile values obtained from the software, the data series was divided into the following:

Group 1= Average retention rate between 37.67 to 50.95%
Group 2= Average retention rate between 50.96 to 59.16%
Group 3= Average retention rate between 59.17 to 70.12%
Group 4= Average retention rate between 70.13 to 91.33%

There were 11 HBCUs in group 1, 12 in group 2, 12 in group 3 and 11 in group 4.This analysis was used to answer RQ1. The direction of association is reflected by the correlations. Analysis by retention groups allows more focus on the sample and how retention rates and revenue sources are distributed across different groups.

Research Question 2. *Are Revenue Sources Predictive of Retention Rates at Private Historically Black Colleges and Universities?* This research question focused on whether fiscal variables can be used to predict retention rates at HBCUs. Without considering a time element, the simplest linear regression estimation was done. For the regression, the fiscal variables were standardized into millions. A stepwise regression (see Table 3) was done which introduces fiscal variables sequentially to demonstrate the effect of each individual variable.

Table 3: *ANOVA: Comparison of Revenue Sources by Retention Rates*

		Sum of Squares	df	Mean Square	F	Sig.
Local Grants	Between Groups	75693451584.359	3	25231150528.120	1.283	.281
	Within Groups	5349161798127.387	272	19666036022.527		
	Total	5424855249711.745	275			
Private Gifts	Between Groups	943564003327766.500	3	314521334442588.800	19.744	.000
	Within Groups	4332852277651745.500	272	15929603961954.947		
	Total	5276416280979512.000	275			
Endowments	Between Groups	568199722070689090.000	3	189399907356896352.000	28.610	.000
	Within Groups	1800642340213586180.000	272	6620008603726420.000		
	Total	2368842062284275200.000	275			
Federal Grants	Between Groups	6067291480281347.000	3	2022430493427115.800	20.358	.000
	Within Groups	27021652412992644.000	272	99344310341884.720		
	Total	33088943893273992.000	275			
State Grants	Between Groups	16075642506789.127	3	5358547502263.042	3.466	.017
	Within Groups	420483330837294.700	272	1545894598666.525		
	Total	436558973344083.800	275			

**Correlation is significant at the 0.01 level (2-tailed) *$p < .05$

Random Effects Model

In this model variation across entities is assumed to be random or unrelated to the predictor variables included in the model. The model assumes that group related characteristics (in this case the university specific variables) even if omitted can be treated as non-variant because they will be similar across the period. In this case, it can be the gender composition of students, economic background of students, etc. of the particular institution. The random effects regression was estimated in STATA to observe the changes in the effect of predictors on the dependent variable over time for each unit. There were 46 colleges included in the analysis, and there were 6 observations per group (2010-2015) for each variable.

The R square of the model for within group variation is 0.058, which is 5.8% variation in retention rate within group is explained by predictor variables. The R square for between group variation is 0.30, which translates that the model explains 30% of the variation in the dependent variable, retention rate, observed across the different groups. The overall R square is a weighted average of the above two, according to which the model explains 24% of the variation observed in the retention rates. The error terms are assumed that not correlated across independent variables or regressors. The Chi statistic is significant, with $p<0.05$, which means that the model is significant.

Results

The results from the correlation analysis show a statistically significant correlation between federal grants, private funds, and endowment. State grants are negatively correlated with retention rates. The strongest correlation is between endowment and retention rate. The correlation coefficients over time (in a year to year comparison) show that federal grants exhibit a positive association starting year 2012, and private gifts exhibit a positive association starting year 2013 whereas endowment shows a positive and statistically significant association with retention rates in the sample, for all time periods. State grants exhibit a negative correlation with retention rates, but none of the correlations are significant. (see Table 3).

The results from the regression show that for every million dollars received in federal grants, the retention rate increased by 0.484% (close to one-half percent). State grants are consistently negatively associated, which also reflects in their correlations. The coefficient of federal grants is not statistically significant. Only the private and endowment fiscal sources are significant predictors of retention rate. The largest increase in retention rate comes from an increase in private contributions with a coefficient of 0.693, followed closely by endowment funding with a coefficient of 0.057 (see Table 4). The results from the Stepwise Regression analysis show that there is a positive correlation between federal grants and endowment funding. In models I through IV, federal grants show positive significant correlation with retention rate, but it does not show statistical significance when endowment funding is considered. In other words, it is possible that endowment funding is a good proxy for federal grants because those institutions that have a good endowment fund are able to spend more resources on grant writing, and providing matching funds, compared to institutions that do not have such funding.

Table 4: *Stepwise Regression*

		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
Model		B	Std. Error	Beta	T	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	57.136	1.067		53.545	.000					
	FedGrantMil	.484	.079	.348	6.165	.000	.348	.348	.348	1.000	1.000
2	(Constant)	57.817	1.113		51.925	.000					
	FedGrantMil	.495	.078	.356	6.328	.000	.348	.357	.355	.995	1.005
	StateGrantMil	-1.378	.683	-.114	-2.019	.044	-.088	-.121	-.113	.995	1.005
3	(Constant)	57.620	1.128		51.081	.000					
	FedGrantMil	.498	.078	.358	6.364	.000	.348	.359	.357	.994	1.006
	StateGrantMil	-1.411	.683	-.116	-2.066	.040	-.088	-.124	-.116	.993	1.007
	LocalGrantMil	6.615	6.118	.061	1.081	.281	.044	.065	.061	.997	1.003
4	(Constant)	55.062	1.207		45.628	.000					
	FedGrantMil	.366	.080	.263	4.560	.000	.348	.266	.246	.877	1.141
	StateGrantMil	-1.480	.657	-.122	-2.253	.025	-.088	-.135	-.122	.992	1.008
	LocalGrantMil	8.704	5.898	.080	1.476	.141	.044	.089	.080	.992	1.008
	PrivateMil	.971	.201	.279	4.834	.000	.358	.281	.261	.875	1.143
5	(Constant)	56.292	1.221		46.117	.000					
	FedGrantMil	.021	.119	.015	.179	.858	.348	.011	.009	.378	2.647
	StateGrantMil	-1.230	.644	-.101	-1.908	.057	-.088	-.115	-.100	.982	1.018
	LocalGrantMil	8.893	5.756	.082	1.545	.124	.044	.093	.081	.992	1.009
	PrivateMil	.693	.209	.199	3.315	.001	.358	.197	.175	.770	1.299
	EndowMil	.057	.015	.349	3.829	.000	.451	.226	.202	.334	2.990

Note. Dependent Variable: Retention rate

To observe the effect of time variable, a fixed and random effects model was fitted on the panel dataset. As fixed effects are not suitable if the entities change very little over time, a random effects model was calculated. The Hausmann test is provided in text after the random effects model, which is used to check for the appropriateness of reporting random or fixed effects models. As the output shows except endowment, none of the predictors are significant. The directionality of the federal and state grants is negative, private funding and endowments are positive. Endowment is the only predictor variable that shows a significant effect on retention rate. When there is an increase in endowment fund by 1 million across time and compared to other universities, the retention rate increases by 0.08%.

Discussion

The relationship between student retention and resource dependency is complex. Many private HBCUs admit a high percentage of first-generation college students. First-generation college students and students with high financial need are most at risk for dropping out of college for financial reasons. An increase in revenue sources and endowment assets can provide scholarship funds to students with high financial needs in addition to those that receive aid based upon academic performance. It is also known that students have choices about where to attend college and those students that choose to attend an HBCU attend for reasons such as institutional academic reputation, culture of the school, special educational programs, an offer of financial assistance, and relative recommendation. In each instance students are choosing the HBCU because of experiences that are unique to the HBCU. The connections between student retention and institutional resources lie in the acquisition and use of funds. Findings from this study promote strategic focus on the growth and allocation of endowments funds in areas that attract students to the HBCU. We note that students attending HBCUs will become alumni that may also become donors. Institutional advancement teams recognize that the relationship between the institution and alumni begins when the student is enrolled and on campus set the foundation to grow their funding network through alumni. As institutional advancement teams and other university leaders develop plans to build endowment assets, consideration should be given to consider both current and former students in the conversation. The findings from this study show that state grants are consistently negatively associated with retention. Private institutions do not receive significant funding from the state which may the reason for this result. It is also critical to note that other researchers have concluded that increased state funding is not associated with increased retention rate at four-year colleges and universities (Layzell, 1999; Sanford & Hunter, 2011; Shin & Milton, 2004; Zhang, 2009).

In order to gain deeper understanding of the relationship between endowment funds and retention, further research that delves into the financial structures at private HBCUs to determine if centralized or decentralized allocation of endowment income influences student retention could inform institutional policy and process. Additionally, examination of the relationship between private HBCUs that focus on endowment funds on programs that have higher rates of students obtaining degrees that lead them into career immediately after graduation and those programs that lead to more students pursuing advanced degrees in research fields in juxtaposition to those that do not could lead to understanding the how and the why of the positive relationship between endowment and retention.

Conclusion

The goal of this explanatory correlational research study was to examine the relationships between revenue sources and retention rates at private, not-for-profit, baccalaureate degree-granting HBCUs. This study provides a foundation on the examination of these relationships. Previous literature on retention rates at HBCUs focused on public HBCUs, rather than private HBCUs. Further, previous literature does not discuss revenue sources and its relationship to retention at private HBCUs. However, the literature was lacking in understanding how revenue sources can have a relationship to retention. As researchers continue to inquire about student retention, reducing resource dependency, and the survivability of HBCUs, this research study specifically brings private HBCUs in to the discussion.

The U.S. Department of Education uses fall-to-fall retention rates and focuses on freshmen student retention. Based on the findings from this study, there is a statistically significant relationship between private gifts and endowment assets and retention. So, it is recommended that leadership at private HBCUs, should seek to increase institutional retention rates from year to year by increasing revenue sources and implement a strategic initiative to

increase their endowment funds. Additional revenue sources could provide funding for academic support programs, while reducing resource dependence on external factors and external organizations.

Many private HBCUs admit a high percentage of first-generation college students. First-generation college students and students with high financial need are most at risk for dropping out of college for financial reasons. An increase in revenue sources and endowment assets can provide scholarship funds to students with high financial needs, rather than academic performance.

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