TASK FORCE TO STUDY THE IMPACT OF ADJUNCT FACULTY ON GRADUATION RATES AT HISTORICALLY BLACK INSTITUTIONS

MSAR #8765

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EXECUTIVE SUMMARY

This report, provided by The Maryland Higher Education Commission (MHEC), fulfills the reporting requirements outlined in Chapter 223 of the 2011 Session of the Maryland General Assembly (Task Force to Study the Impact of Adjunct Faculty on Graduation Rates at Historically Black Institutions). For the purposes of this study, adjunct faculty were considered instructional staff that were not tenured or on the tenure-track.

Findings

- *Results from this study did not indicate that increased exposure to adjunct instruction had any influence on student persistence.* The regression analyses did not provide any evidence to suggest that taking more classes from adjunct faculty in the first year would increase or decrease a student's chances of returning for a second or third year. This finding was similar at both HBCUs (historically Black colleges and universities) and TWIs (traditionally White institutions).

- *Despite determining that there was no broad statewide trend at HBCUs and TWIs regarding the impact of adjunct faculty on student persistence, there is some evidence that suggests increased exposure to adjunct faculty may have an impact – negative or positive – on student persistence at some campuses.*

- *HBCUs employed more adjunct instructors (faculty) than TWIs in 2012-13.* Nearly 57.0% of faculty at TWIs had achieved tenure or were on the tenure track, compared to 50.0% of faculty at HBCUs.

- *HBCUs employed slightly more part-time faculty than traditionally White institutions (TWIs) in 2012-13.* Part-time faculty comprised 39.2% of all faculty members at the State's four HBCUs and 37.6% of all faculty members at seven of the State's TWIs. UMUC and UMB were excluded from the analysis.

- *First-time, full-time (FTFT) students at TWIs were more likely to have a higher percentage of their courses taught by adjunct faculty.* Nearly 67% of courses taken by FTFT students at TWIs were taught by adjunct faculty, compared to approximately 62% at HBCUs.

Discussion

This study investigates whether the percentage of a student's courses taken from adjunct instructors in the first year has an impact on a student's likelihood of persistence. Regression models focused on examining the impact of increased exposure to adjunct instruction (in the first year) on second and third year persistence at HBCUs and TWIs. A total of four regression models were constructed for this study. The regression findings indicated that taking a larger percentage of first-year credits with adjunct faculty members did not affect whether a student persisted into the fall semester of their second or third year. This finding was consistent for both HBCUs and TWIs.

The findings do not suggest increased exposure to adjunct instruction has a major impact on student persistence in a broad, overarching way at HBCUs or TWIs. However, policymakers, administrators, faculty, and the legislature should not use this study as a means to justify expanding or restricting the employment of adjunct faculty. This finding should be interpreted with caution and further research on this topic is warranted for numerous reasons. *First*, a lack of detailed data provided only for analyses that treated adjunct faculty as a monolithic group. Research has shown that adjunct faculty members differ substantially across campuses and across departments with regard to how they teach, how they integrate themselves into the campus community, and how campuses support them in their important work.

Second, one HBCU campus provided incomplete information to the Commission, and many of the institutions lacked a number of important predictor variables for students that could have been used in study. Research has consistently demonstrated that students' ambitions, self-efficacy, pre-college experiences, and their academic and extracurricular behaviors in college influence their likelihood of persisting in college. In order to fully understand the impact of adjunct faculty, additional student- and faculty-level data would be needed that are not currently collected or easy to collect.

Third, although no significant effect was found, it is possible that instruction from adjunct faculty does impact other variables (e.g., GPA, engagement, learning, cognitive development, etc.), beyond persistence and retention, which were not the focus of this study. This study only focused on persistence, and increased exposure to adjunct instruction could affect numerous facets of a student's educational experience. Additionally, it is plausible that increased exposure to adjunct faculty may affect a student's academic performance (or other variables), which could in turn influence decisions to persist or discontinue their studies. This would be an indirect effect, and the methods used in this study are unable to detect these types of indirect effects. Therefore, a more sophisticated analytical procedure would be required.

Fourth, the analyses used in this study controlled for institutional effects, but it is likely that adjunct instruction affects persistence and retention at campuses in different ways. In fact, exploratory analysis conducted while producing this report provided enough evidence to suggest that increased exposure to adjunct instruction does in fact have an impact on persistence at specific campuses – in both negative and positive ways. Regression models, which did not control for where a student was enrolled, did reveal some statistically significant relationships between adjunct instruction and student persistence. Institutions are encouraged to conduct further research on this topic as individual campuses are best positioned to produce a more insightful study given their more intricate knowledge of campus, department, and program norms regarding the use of adjunct faculty. Institutional-level studies should use mixed method approaches (i.e., qualitative and quantitative procedures), since the effect of adjunct faculty may be nuanced in ways that would make an impact difficult to detect with quantitative procedures given the current data limitations that exist.

OVERVIEW

This report, provided by The Maryland Higher Education Commission (MHEC), fulfills the reporting requirements outlined in Chapter 223 of the 2011 Session of the Maryland General Assembly (Task Force to Study the Impact of Adjunct Faculty on Graduation Rates at Historically Black Institutions). This report explores the employment, use, and impact of adjunct instruction at HBCUs and TWIs. For the purposes of this study, adjunct faculty were considered instructional staff that were not tenured or on the tenure-track. Part I of this report includes data on the number of adjunct and part-time faculty employed by public four-year institutions in Maryland. Part II of this report, presents the methods and results from four logistic regression models that explored the impact of adjunct instruction on student persistence at HBCUs and TWIs. The report concludes with a discussion of the implications and conclusions.

PART I: EMPLOYMENT OF ADJUNCT FACULTY

The MHEC's Employee Data System (EDS) was used to provide basic descriptive data on the employment of part-time and adjunct faculty at HBCUs and TWIs. Instructional faculty members from all four-year institutions were included in this analysis except those teaching at the University of Maryland - Baltimore (UMB) and the University of Maryland -University College (UMUC). Faculty members from these institutions were excluded from the analysis given the distinct missions and unique characteristics of UMB and UMUC. The instruction at UMUC and the curriculum offered at UMB is quite different from what is provided at the HBCUs. The final sample included 8140 faculty members. Data were provided for the 2012/2013 academic year.

The descriptive analysis of EDS data focused on the adjunct and full-time/part-time status for staff whose principal occupational assignment was instruction. Faculty members were considered adjunct instructors if they had not achieved tenure or were not on the tenure track. Faculty members were considered part-time if they did not occupy a full-time budget position and/or were paid for less than 35+ hours per week. In Table 1 (on the next page), these data are displayed for each of the 11 four-year institutions, the four HBCUs as a collective group, the 7 TWIs as a collective group, and for all institutions (i.e., total).

The data show that HBCUs relied more heavily on part-time faculty and adjunct instructors in academic year 2011-12. While 37.6% of faculty members at TWIs were classified as part-time, 39.2% of faculty members at HBCUs were considered part-time. St. Mary's College of Maryland (26.5%) and UM - College Park (29.4%) had the lowest percentage of part-time faculty, and the University of Baltimore (51.1%) and Coppin State University (49.4%) had the highest percentages of part-time faculty. With only 30.4% of faculty working part-time, Morgan State University had the lowest percentage of part-time faculty among the four HBCUs.

Similarly, HBCUs, on average, had higher percentages of adjunct instructors. Nearly 57.0% of HBCU faculty were not tenured or on the tenure track, compared to 50.0% of faculty at TWIs. Again, St. Mary's College of Maryland (35.3%) and UM - College Park (40.0%) had the lowest

percentages. On the other end of the spectrum were Bowie State University (61.3%) and Towson University (63.7%).

Table 1: Percentage of Part-Time and Adjunct Faculty by Institution (AY12/13)*

Institution	Total	% Part-Time Faculty	% Adjunct Faculty
Bowie State University	408	47.1%	61.3%
Coppin State University	308	49.4%	56.2%
Frostburg State University	378	35.2%	43.9%
Salisbury University	660	38.9%	52.7%
Towson University	1643	48.4%	63.7%
University of Baltimore	403	51.1%	58.1%
University of Maryland - Baltimore County	782	35.8%	51.7%
Univ. of Maryland - College Park	2375	29.4%	40.0%
Univ. of Maryland - Eastern Shore	345	37.1%	54.5%
Morgan State University	634	30.4%	55.8%
St. Mary's College of Maryland	204	26.5%	35.3%
TOTAL (excluding UMUC, UMB)	**8140**	**37.9%**	**51.4%**
HBCUs	**1695**	**39.2%**	**56.9%**
TWIs (excluding UMUC, UMB)	**6445**	**37.6%**	**50.0%**

*All faculty included in the analysis are categorized as "instructional faculty"

PART II: IMPACT OF ADJUNCT INSTRUCTION ON STUDENT PERSISTENCE

This portion of the report focuses on the following two research questions:

1. Does increased exposure to instruction from adjunct faculty in the first year have an impact on student persistence to the second year at HBCUs or TWIs?

2. Does increased exposure to instruction from adjunct faculty in the first year have an impact on student persistence to the third year at HBCUs or TWIs?

Data and Sample

Data for this analysis was collected by MHEC through an ad hoc data collection from 10 public four-year universities in Maryland. As shown in Table 2, participating institutions include the four HBCUs in the State (i.e., Bowie State University, Coppin State University, University of Maryland Eastern Shore, and Morgan State University) and six TWIs in the State (i.e., Frostburg State University, Salisbury University, Towson University, University of Baltimore, University of Maryland College Park, and University of Maryland Baltimore County). Given its special mission and designation as an honors college, data from St. Mary's College of Maryland was not

included in the study. The sample included students who entered Maryland public universities as first-year students in the fall of 2008 or 2009. The final analytic sample included 28,214 students who initially enrolled full-time. The sample included 21,207 students from TWIs and 7,007 students from HBCUs.

Table 2: Institutions Represented in the Study

Institutions	
HBCUs	*TWIs*
Bowie State University	Frostburg State University
Coppin State University	Salisbury University
UM-Eastern Shore	Towson University
Morgan State University	University of Baltimore
	UM-College Park
	UM-Baltimore County

Variables / Analysis

Several variables were collected from the campuses in order to conduct the study. The two outcome (i.e., dependent) variables of interest were 1) retention into the second fall semester – second-year persistence and 2) retention into the third fall semester – third-year persistence. Both variables were binary or dichotomous, with 1 representing retention (persistence) and 0 representing attrition. The primary independent variable of interest was the percentage of courses taken from adjunct faculty. The variable was scaled such that all possible ranged from 0% to 10%.

The statistical models included a number of additional independent or control variables. The models controlled for initial year of enrollment (i.e., 2008 vs. 2009), out-of-state status, gender, total non-loan aid received (rescaled into $1,000 increments), total loan amount (rescaled into $1,000 increments), off campus residence, and students' age at entry. Additionally, the analyses accounted for students' prior academic preparation with the inclusion of a composite SAT score in the models[1]. A variable indicating whether a student intended to major in a STEM (i.e., science, technology, engineering, or math) discipline was also included. Finally, the model incorporated measures for the number of credits students passed in their first year and students' cumulative first-year college GPA.

The binary nature of the outcome variables required the use of logistic regression to answer the primary research questions. The Maryland legislature expressed interest in learning whether exposure to adjunct faculty significantly affected students' likelihood to persist into the second and third year and whether these effects differed between TWIs and HBCUs. Therefore, the logistic regression models were run separately for TWIs and HBCUs. Since there could potentially be some institutional effects, the study utilized a fixed effects approach. This method accounts for institutional influences by including dichotomous control variables for institutions

[1] Composite SAT scores were calculated by combining students' reading and math SAT scores and calculating equivalent scores for students who only took the ACT. The composite scores were rescaled such that a one-unit change corresponded with a 100-point change.

that are included in the analysis. UM - College Park was used as the reference group for TWIs, and Morgan State University was used as the reference group for HBCUs. Institutional differences were beyond the scope of this study and were not reported.

Descriptive Findings

Located in the conclusion of this report, Table A, presents descriptive statistics for the variables included in the models for HBCUs and TWIs. TWIs had substantially higher second- and third-year retention rates compared to HBCUs. Approximately, 86% of students enrolled at TWIs returned for their second fall semester, compared with just 68% of students at HBCUs. Additionally, 79% of students at TWIs returned for their third year, compared with just over half (51%) of students at HBCUs. Table A also shows that students at TWIs took a higher percentage of their courses with part-time faculty compared to their counterparts at HBCUs. *Students at TWIs took roughly two-thirds (66.8%) of their first-year credits with adjunct faculty, whereas HBCU students took 61.7% of their first-year credits with adjunct faculty.*

Given their access mission, it is not surprising that students at HBCUs had lower composite SAT scores than peers at TWIs. Students at TWIs had an average composite (reading and math) SAT score of 1163, which was nearly 300 points higher than the average composite SAT score for students at HBCUs (874). Students at HBCUs were more likely to be female (62% vs. 52%), live off campus (24% to 20%), and rely more heavily on loans to finance college. Students at TWIs were more likely to major in a STEM discipline (26% vs. 21%). Table 2 (below) provides the racial/ethnic breakdown of the sample of students included in the study for the HBCUs and TWIs.

Table 2: Racial/Ethnic Distribution of TWIs and HBCUs

	TWIs	HBCUs
White	64.0%	1.5%
Black	14.0%	92.9%
Native American	0.3%	0.5%
Asian & Pacific Islander	11.1%	1.0%
Hispanic	4.6%	1.1%
Other/Unknown	4.6%	1.4%
Foreign	1.5%	1.6%
Total	100%	100%

Students at TWIs earned more credits than their peers at HBCUs in their first year. Credit earners at TWIs accrued an average of 19.50 credits, compared to 17.47 for HBCU students. TWI students finished their first year with higher cumulative GPAs (2.98) than their counterparts at HBCUs (2.38).

Logistic Regression Findings

Tables B and C, located at the end of this report, shows the results of the logistic regression models predicting retention to the second and third fall semesters for both TWIs and HBCUs. The key independent variable of exposure to adjunct faculty in the first year had no significant

relationship with retention to the second and third year for students at TWIs and HBCUs. In other words, having a greater or smaller proportion of first-year credits taught by adjunct faculty had no statistically significant bearing on whether students persist.

Three other variables included in the models were statistically significant predictors of retention to the second and third fall term at both TWIs and HBCUs. Being a non-Maryland resident was a negative predictor of persistence in all four models. Overall, the effect was strong, and more profound at the HBCUs. Both, total credits earned and first-year cumulative GPA were positive, statistically significant predictors of persistence in all four models. Stated differently, students who earned more credits and higher GPAs were more likely to persist to the second and third fall term. The strongest predictor of persistence was academic performance in the first year for each logistic regression model. Although the impact of performance was strong across all models for both TWIs and HBCUs, students' cumulative GPAs seemed to have a greater impact on persistence at the HBCUs.

There were several variables that were only statistically significant for either 1) TWIs or HBCUs or 2) second-year or third-year persistence. Oddly, after controlling for the influence of all other variables, performance on the SAT was negatively associated with second-year and third-year persistence for students at HBCUs. This finding is likely the result of multicollinearity, a phenomenon that produces statistical abnormalities that can often be counterintuitive when two predictor variables are highly correlated. The strong relationship between SAT and first-year academic performance (i.e., GPA) could have produced this result. For students at TWIs, residing off campus had a negative impact on student persistence while majoring in STEM increased the likelihood a student would return. At HBCUs, residing off campus was only found to be a statistically significant predictor of retention to the third year. This effect was negative. Students that lived off campus were less likely to persist to the third year. For students at HBCUs, financial aid and loans were positive predictors of persistence. As aid and loans increased, so did the chances of persistence. Although this effect was statistically significant, it was modest. In addition, the findings from this study revealed that women at HBCUs were less likely to persist when controlling for all the other variables included in the models. Finally, age at entry was found to be a negative, significant predictor of persistence to the third year at TWIs. Stated differently, the likelihood of persistence to the third year declined as the initial age of enrollment increased.

DISCUSSION, IMPLICATIONS, & CONCLUSIONS

The primary purpose of this study was to determine whether exposure to adjunct faculty in the first year significantly affected students' likelihood to persist at TWIs and HBCUs. The findings from this study indicated that there was no statistically significant relationship (i.e., no effect). For students at HBCUs, the logistic regression models did not indicate that exposure to adjunct faculty exhibited any influence on second-year or third-year persistence. This was also the case at TWIs. However, increased exposure to adjunct faculty for students at TWIs was found to be statistically significant, negative predictor of third-year persistence after controlling for the effects of the other variables included in the logistic regression models. These findings should be interpreted with caution by faculty, administrators, policymakers, and the legislature and should

not be used to justify expanding or restricting employment of adjunct faculty for numerous reasons.

First, a lack of detailed data only provided for analyses that treated adjunct faculty as a monolithic group. Research has consistently demonstrated the diversity existing among adjunct instructors, which have varying reasons for teaching, work both full- and part-time, and receive differential levels of support across campuses and departments (Hurtado, Eagan, Pryor, Whang, & Tran, 2012). Additionally, adjunct faculty members differ substantially across campuses and across departments with regard to how they teach and how they integrate themselves into the campus community. Thus, to offer a more complete portrait of the role that adjunct faculty (and, more generally, all faculty) have in students' persistence decisions, campuses need to collect more information on their faculty.

Second, one HBCU campus provided incomplete information to the Commission, and many of the institutions lacked a number of important predictor variables for students that could have been used in the study. Research has consistently demonstrated that students' ambitions, self-efficacy, pre-college experiences, and their academic and extracurricular behaviors in college influence their likelihood of persisting in college. In order to fully understand this impact of adjunct faculty, additional student- and faculty-level data would be needed that are not currently collected or easy to collect.

Third, although no significant effect was found, it is possible that instruction from adjunct faculty does impact other variables (e.g., GPA, engagement, learning, cognitive development, etc.), beyond persistence and retention, which were not the focus of this study. This study only focused on persistence, and increased exposure to adjunct instruction could affect numerous facets of a student's educational experience. Additionally, it is plausible that increased exposure to adjunct faculty may affect a student's academic performance (or other variables), which could in turn influence decisions to persist or discontinue their studies. This would be an indirect effect, and the methods used in this study are unable to detect these types of indirect effects. Therefore, a more sophisticated analytical procedure would be required.

Fourth, the analyses used in this study controlled for institutional effects, but it is likely that adjunct instruction affects persistence and retention at campuses in different ways. *In fact, exploratory analysis conducted while producing this result provided enough evidence to suggest that increased exposure to adjunct instruction does in fact have an impact on persistence at specific campuses – in both negative and positive ways. Regression models, which did not control for where a student was enrolled, did reveal some statistically significant relationships between adjunct instruction and student persistence.* Institutions are encouraged to conduct further research on this topic as individual campuses are best positioned to produce a more insightful study given their more intricate knowledge of campus, department, and program norms regarding the use of adjunct faculty. Institutional-level studies should use mixed method approaches (i.e., qualitative and quantitative procedures), since the effect of adjunct faculty may be nuanced in ways that would make an impact difficult to detect with quantitative procedures given the current data limitations that exist.

In conclusion, it should be noted that although the descriptive analysis of the MHEC EDS data revealed that HBCUs employed more part-time faculty and adjunct instructors, the analysis of course-level data provided by the 10 campuses revealed that first-year students at TWIs were more likely to take courses from adjunct faculty that were not tenured or on the tenure track. Students at TWIs took roughly two-thirds (66.8%) of their first-year credits from adjunct faculty, whereas HBCU students took 61.7% of their first-year credits with adjunct faculty. For both TWIs and HBCUs, this an astonishingly high number of courses that students are taking from adjunct faculty in their first year. This specific finding raises some concern about the potential overuse of adjunct faculty for courses that are highly saturated with first-year students. As decades of research have revealed, students are most likely to discontinue their studies in their first year. Thus, it is imperative that one of the most important resources and investments on campus, tenure-track and tenured faculty, are utilized in a way that creates the best possible conditions for student success.

Table A: Descriptive Statistics

	Traditionally White Institutions				Historically Black Institutions			
	Mean	S.D.	Min.	Max.	Mean	S.D.	Min.	Max
Dependent Variables								
Retained into second fall semester	.86	.34	0	1	.68	.47	0	1
Retained into third fall semester	.79	.41	0	1	.51	.50	0	1
Principal Variable of Interest								
% of first-year credits taken with adjunct faculty	6.68	2.39	0	10	6.17	2.97	0	10
Other Independent Variables								
Out of state resident	.23	.42	0	1	.25	.44	0	1
Female	.52	.50	0		.62	.49	0	1
Age at entry	18.2	.73	14.00	43.00	18.6	2.47	11.00	62.00
Standardized test (SAT, 100)	11.63	1.68	6.30	16	8.74	1.14	4.00	14.9
Lived off campus	.20	.40	0	1	.24	.43	0	1
Total non-loan aid ($1,000)	2.28	4.19	0	37.41	4.54	6.40	0	121.73
Total loans ($1,000)	1.60	2.82	0	27.62	4.18	4.41	0	25.11
Major: STEM	.26	.44	0	1	.21	.41	0	1
Year of initial enrollment (1=2008, 0=2009)	.50	.50	0	1	.52	.500	0	1
Total credits earned in first year[2]	19.10	9.80	0	46	14.63	10.69	0	46
Cumulative GPA in first year	2.98	.74	0	4	2.38	.88	0	4

[2] Data provided here contradict those provided in the text of the report because students that didn't earn any credits are included in this calculation.

Table B: Logistic Regression Results - Retention into Second Fall Semester

Retention into Second Fall Semester	TWIs			HBCUs		
	S.E.	Sig.	Exp(B)	S.E.	Sig.	Exp(B)
Percentage of first-year credits taken with adjunct faculty	*.013*		*.984*	*.022*		*.984*
Out of state resident	*.069*	***	.579	.087	***	.404
Female	.058		1.044	.082	*	.850
Age at entry	.057		.907	.067		1.014
Standardized test (SAT, 100)	.024		.970	.038	***	.862
Lived off campus	.069	***	.801	.104		1.018
Total non-loan aid ($1,000)	.007		1.011	.008	***	1.030
Total loans ($1,000)	.009		.990	.009	**	1.028
Major: STEM	.069	**	1.203	.097		1.011
Year of initial enrollment (1=2008, 0=2009)	.057	***	.792	.078	***	1.345
Total credits earned in first year	.005	***	1.083	.008	***	1.026
Cumulative GPA in first year	.044	***	2.085	.078	***	3.186
Cases in Analysis			*18,912*			*4,538*
Nagelkerke R Square			*.238*			*.282*
Correctly Classified			*91.7%*			*80.3%*
Null Model Correctly Classified			*90.5%*			*74.2%*

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$; Exp(B) = odds ratio, S.E. = Standard Error

Table C: Logistic Regression Results - Retention into Third Fall Semester

Retention into Third Fall Semester	TWIs			HBCUs		
	S.E.	Sig.	Exp(B)	S.E.	Sig.	Exp(B)
Percentage of first-year credits taken with adjunct faculty	*.010*		*.987*	*.018*		*.982*
Out of state resident	.053	***	.629	.079	***	.468
Female	.045		.923	.072	*	.832
Age at entry	.044	***	.791	.059		.958
Standardized test (SAT, 100)	.019		.982	.034	***	.836
Lived off campus	.054	***	.841	.090	**	.791
Total non-loan aid ($1,000)	.005		1.005	.007	**	1.020
Total loans ($1,000)	.007		.989	.008		1.015
Major: STEM	.053	***	1.228	.085		.887
Year of initial enrollment (1=2008, 0=2009)	.044	***	.856	.069		1.125
Total credits earned in first year	.004	***	7.049	.006	***	1.021
Cumulative GPA in first year	.035	***	2.271	.073	***	3.439
Cases in Analysis			*18,912*			*4,538*
Nagelkerke R Square			*.213*			*.282*
Correctly Classified			*85.0%*			*71.5%*
Null Model Correctly Classified			*82.6%*			*56.1%*

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$; Exp(B) = odds ratio, S.E. = Standard Error

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