

College and University Accreditation: Institutional Mission, Enrollment, and Survival

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Abstract

Background: In the current higher education landscape, institutional accreditors aim to serve their members, by providing support and encouraging improvement, and serve the public, by ensuring quality and accountability. Despite recurrent concerns over the efficacy and value of accreditation given these sometimes-competing roles, limited research has examined accreditation and its outcomes. **Purpose:** This three-study project provides additional context to understand accreditation and its relationship with higher education. The first paper looked at the way accreditation treated mission diversity with regard to Historically Black Colleges and Universities (HBCUs). The second study examined whether accreditation actions related to student enrollment. The final paper analyzed the relationship between accreditation and institutional merger or closure. **Methods:** The first project used logistic regression to test whether HBCUs were more frequently sanctioned than other institutions after controlling for several factors. The second study used a panel of data to estimate the relationship between negative accreditation actions and institutional enrollment. The third used survival analysis to identify factors related to institutions either merging or closing. **Results:** Results of the first paper demonstrated that even when controlling for certain factors, HBCUs had three times higher odds of facing negative or adverse accreditation actions than non-HBCUs ($p < .001$). Results of the second study showed that enrollment declined for institutions after they were placed on sanction. Specifically, four-year private not-for-profit institutions had a 7.7% decline in FTE enrollment two years after warning ($p < .05$) and public four-year and two-year institutions had a 4.9% and an 8.1% relative decline in FTE two years after probation, respectively ($p < .05$). Results of the third paper showed that while

accreditation did not significantly relate to the hazard of institutional closure, regional accreditation did significantly decrease the hazard of merger by around 3.54 times ($p < .01$). Factors significantly related to hazard for closure included FTE enrollment, being insolvent, and running a deficit ($p < .01$). In addition to regional accreditation, other factors significantly related to hazard of merger included being insolvent in the prior year, and the amount of deficit from the prior year ($p < .05$). **Conclusion:** Recent changes have endangered the survival of colleges and universities. Demographic shifts are reducing the relative abundance of students and decreased public funding stretches college and university budgets. As market pressures are brought to bear, accreditors are in a unique position to respond. This series of studies highlights the ongoing need of stakeholders and policymakers to consider the purpose of accreditation. If accreditors aim to provide a mission-centered review, they must counteract systemic barriers and biases. If accreditors are expected to correct institutional shortcomings, negative actions to that end should not cause unintended harm. If accreditors are called on to minimize the disruption of school closures, they need to be empowered to support members and facilitate proactive mergers.

Table of Contents

Chapter	Page
I. Introduction	1
Background	2
The Expanding Role of Accreditation.	2
Criticisms of Accreditation.	5
Accreditation Types.	6
Project Goals	8
Goals of Chapter II, Diversity Under Review:	9
Goals of Chapter III, The Good, the Bad, and the Sanctioned:	10
Goals of Chapter IV, A New Path or the End of the Road:	10
Conclusion	11
References	12
II. Diversity Under Review: HBCUs and Regional Accreditation Actions.....	18
Literature Review.....	20
Historically Black Colleges and Universities.	20
SACSCOC Accreditation and HBCUs.	21
Conceptual Framework.....	23
Data and Methods	25
Data.	25
Variables.	25
Analysis.....	26
Results.....	27
Limitations	31
Discussion	32
Future Research	35
Conclusion	37
References	38
III. The Good, the Bad, and the Sanctioned: Accreditation Sanctions as Quality Signals in a Competitive Market for Students	43
Literature Review.....	44
Accreditation and Enrollment.	46
Conceptual Framework.....	48
Methods.....	50
Data Sources.	50
Analysis.....	51
Results.....	53
Limitations	62
Discussion	64

Conclusion	68
References.....	70
IV. A New Path or the End of the Road: Institutional Mergers and Closures.....	74
Literature Review.....	75
Finances.	76
Enrollment.....	77
Institutional Accreditation.	77
Religious Affiliation.	78
Conceptual Framework.....	78
Methods.....	82
Analysis.....	84
Results.....	86
Limitations	92
Discussion	94
Enrollment Variables.	95
Religious Affiliation.	96
Financial Variables.	97
Conclusion	99
References.....	101
V. Conclusion.....	105
Accreditation and Mission	106
Accreditation and Enrollment.....	106
Accreditation and Institutional Survival	107
Implications for Future Research.....	108
Implications for Policy and Practice	109
References.....	112

List of Tables

Table	Page
1. Predictors of Negative or Adverse Actions	29
2. Control Variables Included in the Analysis	51
3. Differences by Sanction Status	54
4. Results of Two-Way Fixed Effects Models by Action.....	56
5. Results of Two-Way Fixed Effects Models by Sector.....	59
6. Results of Two-Way Fixed Effects Models with Various Lags	61
7. Number Institutions that Closed or Merged by Accreditation Group.....	82
8. Descriptive Statistics of Institution-Year Cases	84
9. Results of Cox Models by Outcome	87
10. Differences in Predictors Across Merger and Closure Models	90

List of Figures

Figure	Page
1. Predicted Probability of Negative or Adverse Actions by HBCU-Status.....	30
2. Conceptual Framework for Institutional Survival	80
3. Cox Adjusted Survival Curves for Closure by Solvent- and Deficit-Status	91
4. Cox Adjusted Survival Curves by Solvent-Status for Closure or Mergers	92

Chapter I

Introduction

Higher education in the United States is subject to policies and a regulatory environment unlike those of most nations. Rather than a centralized agency to approve, oversee, and ensure the quality of colleges and universities, those responsibilities are diffused throughout a regulatory triad that includes the states, the federal government, and private accreditors (Hendrickson, Lane, Harris, & Dorman, 2013; Wolff, 2005). States are responsible for licensing institutions and preventing fraud; the federal government is tasked with recognizing accreditors and providing federal financial aid; and accreditors are charged with proliferating academic standards and ensuring institutional quality (Wolff, 2005). The relative powers and responsibilities of each triad member have shifted with various social, economic, and political forces. For example, accreditors have become more closely tied to the federal government as increased reliance on federal financial aid has led accreditation to often be required for college and university operation (Wolff, 2005). Additionally, questions over who benefits from higher education (e.g., the graduate, society, or both) and concerns over its value relative to its rising costs have contributed to calls for increased accountability for colleges and universities (Burke, 2005; Hendrickson et al., 2013; Middaugh, 2010).

These pressures have led to efforts by states, the federal government, and accreditors to ensure institutions respond to external values and priorities. Accreditors, in particular, are seen as failing to adequately guarantee quality outcomes for higher education (Dickeson, 2006; Hendrickson et al., 2013) and have been criticized as watchdogs that rarely bite (Fuller & Belkin, 2015). These concerns manifest in ongoing

policy discussions around accreditation and holding higher education institutions accountable (see, for example, Department of Education Office of Postsecondary Education, 2018; Johnson, 2019; Lieberman, 2019). Therefore, this series of studies provides additional empirical grounding for such discussions. Broadly, the project asks: What are the outcomes of accreditation and how do these align with its purpose? In the remainder of this first chapter I provide the context and background for the project and identify its goals.

Background

In this section I provide an overview of the context for the project. First, I describe the purpose and benefits of accreditation—for member institutions and society—and provide a brief discussion about how its function has changed over time. Second, I review criticisms of the current system of accreditation. Finally, I define the different types of accreditation and provide a general introduction to the review process.

The Expanding Role of Accreditation. In order to understand the role and the value of accreditation, it is important to consider how it has changed over time.¹ Accreditation began as a means of distinguishing college-level institutions and to ensure consistency and quality across members (Young, 1983). It provided a way for members to facilitate student transfer and determine course equivalences (Wolff, 2005). Additionally, being accredited became a signal to the public about the quality of the institution (Gillen, Bennett, & Vedder, 2010). Over time, an important shift in the logic

¹ This overview mostly focuses on regional accreditation. These agencies provided the historical origins of modern accreditation and have faced the majority of the expanded responsibilities. One expansion of responsibility faced primarily by programmatic accreditors is states' reliance for professional licensure (Young, 1983). It is worth noting that recently the Department of Education moved to explicitly treat regional or national accreditors as one type (Student Assistance General Provisions, 2019). Still, the historic distinction between regional and national accreditors is useful. Indeed, most colleges and universities remain accredited under the regional agencies.

of accreditation emerged; rather than using rigid standards, institutions were evaluated based on the mission and purpose they defined (Young, 1983). Additionally, accreditation adopted a member-serving purpose with a focus on quality improvement (Gillen et al., 2010).

Following the expanded role of the federal government in funding higher education, accreditation's quality assurance role emerged. Beginning with the 1952 Korean War GI Bill, the federal government required recognized accreditation agencies to determine which colleges and universities are eligible for benefits (Harclooad, 1983). With the passage of the Higher Education Act of 1965, the amount of available funding, and the stakes for accreditation, were raised significantly (Gillen, et al., 2010). Even more recently, accreditation has become focused on assessment and accountability (Ewell, 2005; Gillen, et al., 2010). Public concerns over the quality and affordability of postsecondary education have placed additional pressure on the sector in general, with accreditation taking much of the blame (Dickeson, 2006; Gillen, et al., 2010).

These expanding responsibilities have led accreditation to serve several roles for multiple stakeholders. First, they serve the federal government, taxpayers, and the public by encouraging colleges and universities to be fiscally responsible, confirm faculty qualifications, improve student outcomes, and assess academic quality (Department of Education, n.d.-a; Eaton, 2011; Hendrickson et al., 2013; Wolff, 2005). Second, they provide a signal of quality for potential students and employers of graduates (Eaton, 2009). Third, they serve member institutions by supporting continuous improvement, providing peer feedback, helping prevent institutional closure, encouraging broad institutional engagement in planning, supporting the transfer of credits, and serving as a

buffer from external influence and government intrusion (Department of Education, n.d.-a; Eaton, 2011; Harclerod, 1983; Hendrickson et al., 2013; McGuire, 2009; Wolff, 2005). Because accreditation is set up as a voluntary peer-review process independent of explicit government management, it allows associations of colleges and universities to determine their own purposes, agendas, and values. By enabling institutional members to pursue independent missions, U.S. higher education has been able to diversify and innovate in ways other countries' higher education systems cannot (Eaton, 2009; Eaton, 2015; Wolff, 2005; Zumeta, 2005).

One of the most critical roles that accreditors play in the current higher education landscape, however, is gatekeeper. They determine eligibility for over \$120 billion in federal financial aid (Department of Education, Federal Student Aid, n.d.). For many institutions, access to these funds means the difference between fiscal viability and closure (Leef & Burris, 2002). The U.S. Department of Education requires accreditors to undergo a formal review process every five years to be recognized as gatekeepers to federal financial aid (Department of Education, n.d.-a). Accrediting agencies that either seek to be newly recognized or to continue their recognition by the Department of Education must comply with requirements related to their independence, financial resources, review processes, and accreditation standards (Department of Education, n.d.-b). The application is reviewed first by Department of Education staff, then by the National Advisory Committee on Institutional Quality and Integrity, and lastly by a senior official in the department. The final decision may be appealed to the Secretary of Education.²

² Another agency that plays a recognition function—though not tied to federal monies—is the Council for Higher Education Accreditation. Because this association is not linked to federal oversight or

Criticisms of Accreditation. In 2006, the Commission on the Future of Higher Education, convened by Secretary of Education Margaret Spellings, issued a report that criticized accreditors on several issues including meaningful outcomes, accountability, and transparency. It asserted that too often, “decisions about higher education... rely heavily on reputation and rankings derived to a large extent from inputs such as financial resources rather than outcomes,” and that meaningful data around student learning outcomes are not available to support enrollment or funding decisions by students, parents, or policymakers (Department of Education, 2006, p. 14). Further, the report called for “the creation of a robust culture of accountability and transparency throughout higher education” (Department of Education, 2006, p. 21). A paper solicited for the Commission asserted that accreditation was not ensuring the quality of education within the country and that educational outcomes were actually getting worse (Dickeson, 2006). These critiques have helped to drive an increased focus on outcomes assessment in higher education (Garcia, 2009; Johnston, 2011).

More recently, under the Secretary of Education, Betsy DeVos, the U.S. Department of Education engaged in a round of negotiated rulemaking to address, among other topics, accreditation. According to official materials, the process aimed to “provide accreditors, and the institutions they accredit, with greater latitude to innovate; to create healthy competition among institutions and accreditors; to provide agencies with increased independence in their recognition and oversight responsibilities; and to reduce

financial aid, I do not provide an overview of their process. It is worth noting that several accrediting agencies pursue recognition by both bodies. As of March 2019, 28 accreditors were recognized by both the Department of Education and the Council for Higher Education Accreditation, 32 were only recognized by the Council for Higher Education Accreditation, and 25 were only recognized by the Department of Education (Council for Higher Education Accreditation, 2019).

unnecessary regulatory burden and oversight redundancies” (Department of Education, 2019, p. 1). The negotiators reached consensus, and, following a public comment period, the Department of Education released final regulations with a planned implementation date of July 1, 2020 (Department of Education, Office of Postsecondary Education, 2019). It remains to be seen what the functional impact of the rules will be. Still, without substantive changes to the Higher Education Act, accreditors continue as gatekeepers for federal financial aid and thus play a major role in the viability of institutions. The revised regulations may tweak the process, but the fundamental power of accreditation will endure.

Accreditation Types. Accreditors are voluntary associations of colleges and universities. These agencies are financially supported by their member institutions and provide a system of peer review intended to ensure adequate quality of their members. There are two main types of accreditation, institutional (or general) and specialized (or programmatic). Institutional accreditation looks at the overall quality of the college or university with a focus on continuous improvement and represents a judgment by regional agencies, national faith-related accreditors, and national career-related accreditors (Dickeson, 2006; Eaton, 2009). It covers the entire institution and indicates that each department and program support the institution’s goals and mission (Department of Education, n.d.-a).

Specialized accreditation focuses on specific professions or areas of study and aims to ensure the programs adequately prepare graduates for their careers (Eaton, 2015). This type of accreditation applies to specific parts of an institution, like a program, department, or school. For example, the Liaison Committee on Medical Education (n.d.)

reviews programs leading to a Doctor of Medicine (M.D.) degree. Generally, institutions with parts or programs that receive specialized accreditation also have separate institutional accreditation. However, a specialized accreditor might serve as an institutional accreditor in certain cases, like for vocational or professional schools (Department of Education, n.d.-a).

There are seven different regional college and university accreditors serving six regions. Five of these regional accreditors review both two-year and four-year institutions. The Western Association of Schools and Colleges is the exception, with one accreditor focusing on community and junior colleges and the other accrediting senior institutions. Additionally, the U.S. Department of Education currently recognizes five other regional agencies serving individual states or focused on vocational and technical schools (Department of Education, Office of Postsecondary Education, n.d.). The Department also recognizes 10 national and 40 specialized accreditors.

Both types of accreditation play an important and interrelated role within the accountability landscape. Institutional accreditation ensures quality at the broad college or university level. Alternatively, specialized accreditation addresses specific elements for an area of study to ensure the program meets professional expectations and standards. This project did not explicitly consider specialized accreditors, instead it centered on institutional ones. The first two studies focused on regional accreditors and the third study covered all institutional accreditors (i.e., national and regional).

Accreditation Process. The general process of accreditation recurs periodically and includes a self-study, peer review, site visit, and final action by the decision-making body of the accreditor (Eaton, 2015). This final action may take several forms, including

reaffirmation of accreditation. Alternatively, if there are new or ongoing deficiencies, accreditors may warn the school, place a school on probation, or even withdraw accreditation (Council for Higher Education Accreditation, n.d.). Accrediting organizations seek to support member success and ensure accountability through these actions (Eaton, 2015). Rather than simply removing accreditation (and thus federal financial aid) for any deficiency, the agency can identify the specific issue and provide adequate time for the institution to correct the problem. The action that results from the accreditation process is an important outcome allowing for aggregation and empirical review.

Project Goals

Through this project, I explored accreditation's role in accountability to provide additional context for understanding its function in the higher education landscape. Given the variety of stakeholders and the complexity of the topic, the project is divided into three separate but related studies. For the first paper, I studied accreditation from the perspective of its academic concerns—the professional expertise and public deference for which accreditation initially emerged (Wolff, 2005)—by analyzing whether accreditation was respecting and supporting diverse missions. Second, I examined how accreditation may relate to market forces, acting as a signal for potential students in their enrollment decisions. Finally, in the third paper, I examined how accreditation relates to the merger or closure of institutions. While accreditation is expected to ensure institutional quality and serve its members, it has been unclear how it relates to institutional survival. Through these papers, this project adds to the limited empirical research into accreditation and aims to support stakeholders and policymakers in developing a better understanding of

accreditors and the role they play in accountability. Below, I provide additional context for each study.

Goals of Chapter II, Diversity Under Review: HBCUs and Regional

Accreditation Actions. The decentralized nature of higher education has allowed for many different types of institutions—with varied missions—to broaden access to higher education. For example, Historically Black Colleges and Universities (HBCUs) represent an important type of mission diversity, serving students that were historically excluded from higher education (Allen & Jewell, 2002). These institutions continue to play an important role in the current landscape, supporting students who still face marginalization and hostility on other campuses (Allen, 1992; Cole & Harper, 2017; Outcalt & Skewes-Cox, 2002).

Accountability methods, such as accreditation, must “honor multiple models of academic excellence based on performance not prestige, on results not reputation, on mission centeredness not mission creep” (Burke, 2005, p. 21). Therefore, this study supports a deeper understanding of how the accreditation system treats institutional diversity. Specifically, I focused on accreditation actions taken against HBCUs. Prior research suggests that these institutions have disproportionately faced negative or adverse accreditation actions (Donahoo & Lee, 2008; Fester, Gasman, & Nguyen, 2012; Gasman, et al., 2007). The United Negro College Fund (2019) has continued raising concerns over how SACSCOC treats HBCUs. This paper looked to empirically address whether HBCUs faced disproportionate negative or adverse accreditation actions as compared to non-HBCUs and whether any institutional characteristics might account for the discrepancy.

Goals of Chapter III, The Good, the Bad, and the Sanctioned: Accreditation

Sanctions as Quality Signals in a Competitive Market for Students. One key benefit identified for accreditation is its role in indicating quality for potential students (Eaton, 2012). Unfortunately, there is little research examining the extent to which this is the case. If students rely on accreditation as a quality indicator, enrollment patterns would reflect these trends. Additionally, through such patterns, market accountability forces may relate to accreditation's role. By providing federal funding through students—rather than as direct institutional subsidies—federal policy has supported a market-based form of accountability, allowing students to direct their money to institutions that best serve their need (Zumeta, 2005). Therefore, in the second paper, I quantitatively analyzed whether accreditation actions were related to changes in enrollment. Specifically, the study applied signal theory to see if there was any evidence suggesting students use accreditation as an indicator of quality when choosing where or whether to enroll in higher education.

Goals of Chapter IV, A New Path or the End of the Road: Institutional

Mergers and Closures. The third paper explored the relationship between accreditation and the survival of colleges and universities. Although prior work has looked at many factors related to institutional closure or merger, there remains limited research distinguishing between those two outcomes. Additionally, even though accreditors are expected to ensure institutional quality—and accreditation issues have been identified as a risk factor for college and university survival (Martin & Samels, 2009)—empirical research had not explored such a relationship. Therefore, through survival analysis this

paper identified factors related to institutions closing or merging, with a particular focus on institutional accreditation, and examined differences between those two outcomes.

Conclusion

Accreditation provides the higher education landscape with many services and much value; therefore, it is important to better understand how it works, where it succeeds, and where it falls short. As a non-governmental system of peer review, accreditation has the potential to ensure accountability for the many stakeholders of higher education while also serving as a buffer against more extreme policies or intrusive government mandates. This series of studies provides additional context as policymakers and stakeholders consider higher education and the role of accreditation. In Chapter II, I demonstrate that regional accreditation may fail to thoroughly account for mission diversity. Next, in Chapter III, I illuminate the potential signaling role of accreditation actions for potential students. Finally, in Chapter IV, I identify factors relating to institutional closure or merger and distinguishing between each outcome.

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Chapter II

Diversity Under Review: HBCUs and Regional Accreditation Actions

In June of 2016, the board of the regional accreditor for Paine College—a Historically Black College and University (HBCU) in Augusta, Georgia—voted to remove the institution’s accreditation (Toppo, 2018). This set off a series of legal challenges that continues to this day. Bennett College, an HBCU in North Carolina, is following a similar path, turning to courts to retain its stripped accreditation (Osei, 2019). Why fight so hard to maintain accredited status? In a word, survival. Accreditation is the gatekeeper to more than \$120 billion of federal financial aid (Department of Education, Federal Student Aid, n.d)—the fiscal essence of so many colleges and universities across the country. Without access to this funding many institutions would close. St. Paul’s College, an HBCU in Virginia, met such a fate, losing accreditation and ultimately closing (Jaschik, 2013).

The current higher education landscape in the United States is characterized by its diversity and decentralization as shaped through a long history of exclusion based on religion, race, ethnicity, and sex (Gasman, Nguyen, & Conrad, 2015). HBCUs embody this history, demonstrating how institutions founded out of exclusion can survive and serve students who—even today—have difficulty accessing higher education. The regional accreditation system is often credited with supporting diverse institutions. Brittingham (2009) argues that while accreditation is not responsible for the “access, mission differentiation, and experimentation” evident in U.S. higher education, it nonetheless has “supported an environment in which all three could flourish while providing a basic framework that prevents chaos and promotes coherence in the system”

(p. 12). Allowing colleges and universities to self-regulate through the accreditation peer-review process provides for flexible and adaptive accountability. This system can support broad institutional missions to increase quality and expand access for previously excluded students. Unfortunately, there is limited research on outcomes of the regional accreditation system for diverse institutions.

As non-governmental voluntary peer-review organizations, accreditors are in a unique position to support HBCUs and ensure their continued success. While there is some evidence that accreditors have supported these institutions (e.g., Jones, 2005; Simmons, 1984), other evidence suggests this may not always be the case (see Donahoo & Lee, 2008; Wershba, 2010) and that more research needs to be done (Fester, Gasman, & Nguyen, 2012) to systematically examine whether HBCUs are disproportionately sanctioned after controlling for relevant institutional characteristics, such as enrollments, institutional resources, and student outcomes. Therefore, the purpose of this study was to examine issues related to accreditation and HBCUs by addressing the following research questions:

1. Are HBCUs more frequently denied substantive changes, placed on probation, or placed on warning by regional accreditors than non-HBCUs?
2. Is there a relationship between an institution's HBCU-status and negative or adverse accreditation actions after controlling for other institutional characteristics such as graduation rates and financial resources?

As I address these questions, I first provide a brief overview of HBCUs, accreditation, the context for the study, and the limited empirical research in the area. Second, I provide an overview of the conceptual framework that drives the study. Third, I

describe the data and quantitative methods that used to answer the research questions.

Fourth, I explain the results and describe the relevant limitations. Finally, I conclude with a discussion of the results, situate this study in context, and identify key areas for future study.

Literature Review

This literature review is divided into two sections. First, I provide an overview of HBCUs, their history, missions, and role in the higher education landscape. Second, I describe the SACSCOC regional accreditor, which covers the majority of HBCUs, and explain how HBCUs have experienced accreditation, especially within this region.

Historically Black Colleges and Universities. HBCUs are postsecondary institutions established before 1964 that explicitly focused on educating African-Americans (Gasman et al., 2007). These institutions were founded to meet the educational needs of Black students who were overlooked or overtly excluded from non-HBCUs throughout history (Allen & Jewell, 2002; Department of Education, Office of Civil Rights, 1991). HBCUs have a valuable place in the U.S. higher education landscape. Black students on many campuses experience issues of discrimination, racial animus, and overt hostility (Cole & Harper, 2017; Gin, Martínez-Alemán, Rowan-Kenyon, & Hottell, 2017; Pieterse, Carter, Evans, & Walter, 2010). Such negative campus experiences can be a barrier to college completion (Johnson-Ahorlu, 2013). Additionally, HBCUs continue to serve a substantial portion of Black students. In 2016, HBCUs constituted a mere 1.3% of all degree-granting institutions but enrolled 7.4% of all Black undergraduates (author's calculations, National Center for Education Statistics, 2016).

Research has demonstrated that HBCUs offer Black students an effective alternative to Predominately White Institutions (PWIs). Kim and Conrad (2006) analyzed national longitudinal data and found that despite having fewer resources and students with poorer high school performance, HBCUs graduated students at comparable rates to historically White colleges and universities. Additionally, Allen (1992), analyzed data from 928 Black students at HBCUs and 872 Black students at PWIs and found those at HBCUs were more successful academically, were more engaged with the university, and aimed higher for their careers than those at PWIs. Allen (1992) also noted HBCUs provided a positive environment for Black students who faced racial discrimination and isolation at PWIs. Building on this work, Outcalt and Skewes-Cox (2002) analyzed survey data from Black students at HBCUs and PWIs and found that those at HBCUs were more engaged and satisfied with the campus and the community than those at PWIs. Thus, HBCUs have continue to fulfil a critical need for Black students while supporting a robust higher education system. Without HBCUs, U.S. higher education would lose institutions that—through their unique missions and efforts—address gaps left by other colleges and universities. These institutions provide a path to higher education for students facing overt hostility and exclusion on many campuses as well as students left unprepared by underperforming primary and secondary institutions.

SACSCOC Accreditation and HBCUs. SACSCOC serves as the regional institutional accreditor for the 11 southern states: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia. Because of the states represented by SACSCOC, most HBCUs have been located within this region (Asgill, 1976; Donahoo & Lee, 2008). As of 2016, 80 of the 101 HBCUs were

within those states (National Center for Education Statistics, 2016). This gives SACSCOC disproportionate influence over HBCUs and an increased responsibility to meet the needs of these institutions. Unfortunately, HBCUs have been marginalized and face challenges related to accreditation (Allen & Jewell, 2002). Historically, SACSCOC excluded HBCUs from membership (Asgill, 1976), only admitting the first such institutions in 1957 (Harris, 2007). Once HBCUs were allowed to join, they pursued accreditation as an indicator of quality and prestige (Asgill, 1976).

Even more recently, HBCUs have faced accreditation challenges. Among the regional accreditors, SACSCOC has been identified as the most active in publicly sanctioning members, facing criticism for placing disproportionate attention on HBCUs (Gasman, et al., 2007). Donahoo and Lee (2008) noted that SACSCOC punished HBCUs more severely and frequently than its other members. Using articles from *The Chronicle of Higher Education* as a data set, Donahoo and Lee (2008) found that between 1996 and 2005, 63 percent of HBCUs faced penalties after their accreditation evaluations and that all such penalties were within SACSCOC. Further, Lee (2008) noted that “since 1989, 50% of the institutions to lose accreditation in SACS[COC] were HBCUs” (p. 12). Despite calls for additional studies (see Fester, Gasman, & Nguyen, 2012), there remains limited current research into accreditation and HBCUs.

Further, even after receiving accreditation, some HBCUs continually struggled to maintain this status and the financial aid access it provides. These institutions rely heavily on such money as they serve many aid-dependent students (Davis, 2007). HBCUs also require these funds as they face rising infrastructure and employee costs but lack large

endowments on which to draw (Davis, 2007). Additionally, Boland and Gasman (2014) found that HBCUs are underfunded compared with PWIs and public flagships.

There are several issues related to accreditation that HBCUs frequently face. First, as noted, HBCUs consistently face financial challenges, an area on which HBCUs are frequently cited (Baylor, 2010; Donahoo and Lee, 2008; Gasman, et al., 2007). Additionally, academic concerns, including graduation rates, are often identified (Baylor, 2010; Donahoo and Lee, 2008). Still, this area of citation may discount the mission and histories of HBCUs. Further, low graduation rates are not a phenomenon associated only with HBCUs. Many non-HBCUs have comparable graduation rates but may not face similar scrutiny. Finally, some suggest that the role of these institutions is undervalued and that accountability systems may not serve them (Donahoo and Lee, 2008; Fester, Gasman, & Nguyen, 2012).

Conceptual Framework

This research draws upon the conceptual framework of coercive isomorphism from DiMaggio and Powell (1983) to explain why accreditors—organizations on which colleges and universities rely—may disproportionately sanction HBCUs relative to other more numerous institutions. Adding to this framework, I also draw upon work by Gonzales, Kanhai, and Hall (2018) that applies a critical perspective to organizational theories. Specifically, I focus on their reimagining of organizational culture as a mechanism to “reproduce systems of inequity and marginalization” (p. 544). This is an important consideration for reviewing how accreditors—through their standards and norms—may continue to perpetuate inequity of traditionally marginalized HBCUs.

DiMaggio and Powell (1983) described the processes by which organizations (e.g., colleges and universities) within a field (e.g., higher education) increasingly resemble one another as they face pressure for legitimacy and conformity. Within the context of accreditation—a very explicit form of institutional legitimacy—colleges and universities are required to adhere to identified and normalizing standards. Unfortunately, the organizational culture that defined the standards and norms is not disinterested or independent; it has evolved from a system with structural inequities and a vested interest in perpetuating its own power and privileges (Gonzales et al, 2018).

As is evident through its history, SACSCOC was not established to serve or support HBCUs, instead opting to exclude such institutions. As such, a critical view of accreditation is warranted when reviewing how SACSCOC interacts with different colleges and universities. Despite the unique missions and contexts of HBCUs, they continually face an accreditation review process that may expect them to resemble their non-HBCU peers in their structure, processes, and strategies. These pressures may act as mechanisms to reinforce existing inequities and to devalue mission diversity. For example, if reviewers focus on a college's low graduation rate without considering the institution's access mission, then the process is not respecting their mission diversity. Thus, by reviewing actions taken by accreditors as mechanisms of cultural power (Gonzales et al, 2018)—this study looks at the issue through a critical lens of isomorphism to determine whether differences exist in the ways that accreditors treat HBCUs compared to non-HBCUs.

Data and Methods

Data. The data used for this research were drawn from two sources. The first was a custom dataset compiled from notices of public actions (e.g., reaffirmation, warning, or probation) taken by the SACSCOC Board of Trustees and posted on the organization's website. I limited the data to actions that occurred between 2012 and 2017. I chose this period because the SACSCOC standards were the same during this time, having changed beginning in 2012 and again beginning in 2018. The second set of data were drawn from the Integrated Postsecondary Education Data System (IPEDS; National Center for Education Statistics, 2016) and included basic institutional characteristics, graduation rates, and financial details. The primary level of analysis is each action taken against an institution by the SACSCOC Board of Trustees ($n = 1,274$ actions between 2012 and 2017). A set of actions is released twice each year, once in June and once in December.

Variables. For my first research question, there were three dependent indicator variables: whether the action (a) resulted in warning; (b) resulted in probation, or (c) denied a substantive change. These were compared by HBCU-status. For my second research question comparing negative actions by HBCU-status with selected controls, my dependent variable was an indicator reflecting whether the action was negative or adverse (negative or adverse = 1; other actions = 0). The negative or adverse actions includes being denied reaffirmation, placed on sanction, denied membership, denied an application to offer a more advanced degree level, denied an application for substantive change, or losing accreditation. For both research questions, the key independent variable was a dummy that recorded whether a college or university is a HBCU (HBCU = 1; non-HBCU = 0).

I also included several controlling organizational variables: sector (public or private; four-year or two-year), financial reporting type, GRS graduation rate, student-to-faculty ratio, and the select financial variables (instructional expenditures per FTE student, academic and support expenditures per FTE student, and institutional support per FTE student). I limited the actions to those that targeted two-year or four-year, public or private not-for-profit institutions with undergraduates. Additionally, I focused on those institutions that reported institutional support expenditures and did not have an associated hospital (which might bias financial and staff information). This left me with a final dataset of 1,089 SACSCOC actions taken against 590 institutions. Of those institutions, 56 (9.5%) were HBCUs which faced 138 (12.7%) total actions.

Analysis. I conducted two sets of analyses with the open-source R statistical software examining whether HBCUs more frequently faced negative actions or were more frequently sanctioned than non-HBCUs when controlling for selected factors. First, I addressed whether HBCUs more frequently faced negative actions using chi-square tests of independence. Three separate tests determined if the three outcome variables (denied substantive change, placed on probation, and placed on warning) were independent of HBCU-status. While this first analysis did not address or control for any extraneous factors that might explain the difference, it served as an important first step in this research by addressing whether HBCUs more frequently face negative public actions.

For the second analysis, I used binary logistic regression to determine whether, controlling for certain factors, there as a relationship between HBCU-status and negative accreditation actions. I expected the control data to help explain the variability in actions and that the impact of these data would be lagged (e.g., the institutional context while

preparing for the SACSCOC review was more closely associated with the final action than the institutional context after the SACSCOC review). Therefore, I limited the data for this analysis to those between 2011 and 2016—allowing IPEDS data to be lagged one year to the SACSCOC data. The selected controls cover institutional resources (i.e., student-to-faculty ratio, instructional expense, academic support expense, and institutional support expense) and a proxy for output quality (i.e., graduation rate). I also included a squared term for institutional support expense per FTE to examine if it had a curvilinear relationship with the log odds of receiving a negative or adverse action (Cohn, Rhine, & Santos, 1989). In the second block I added HBCU-status. Through this analysis, I tested whether HBCU-status is independent of other factors in explaining differences in negative actions. That is, if institutions that are comparable on selected factors still faced different outcomes related to HBCU-status.

Results

The first research question looked at differences in accreditation actions by HBCU-status using chi-square tests of independence. Among the actions that dealt with substantive changes, there was a statistically significant difference by HBCU-status ($\chi^2(1) = 27.80, p < .001$). Specifically, 27.9% of change-related actions towards HBCUs resulted in denial of a substantive change compared with 5.7% for non-HBCUs. The odds of non-HBCUs having their substantive changes approved was 6.31 (CI: 2.66–14.36) times higher than HBCUs. For the actions that dealt with probation, the odds of an HBCU being placed on probation was 5.85 (CI: 2.82–11.87) times higher than a non-HBCU ($\chi^2(1) = 33.42, p < .001$). HBCUs were placed on probation in 30.36% of their related actions compared with 6.90% for non-HBCUs. Lastly, for the actions related to

warning, the odds of an HBCU being placed on warning was 4.85 (CI: 2.72–8.57) times higher than a non-HBCU ($\chi^2(1) = 38.34$, $p < .001$). HBCUs were placed on warning in 40.85% of their related actions compared with 12.43% for non-HBCUs. Additionally, the top three most frequently cited standards for HBCUs newly placed on warning or probation are Comprehensive Standard 3.10.1 financial stability ($n = 17$), Comprehensive Standard 3.10.3 control of finances ($n = 17$), and Federal Requirement 4.7 Title IV program responsibilities ($n = 15$). A full list of standards cited is available from the author upon request. It is worth noting that Title IV program responsibilities are not standards set by SACSCOC and its members. Instead, in its gatekeeper role, SACSCOC is obligated to review compliance with requirements mandated through federal statutes and regulations (SACSCOC, 2012).

The second research question considered the relationship between HBCU-status and negative or adverse actions when controlling for selected factors, including lagged graduation rate, lagged student to faculty ratio, and lagged financial information. The results of this analysis indicated HBCU-status is statistically significantly related to receiving a negative or adverse accreditation action (see Table 1). Controlling for other factors, within these data, HBCUs were 3.81 times more likely to receive a negative or adverse action than non-HBCUs.

Table 1

Predictors of Negative or Adverse Actions

Variable	Negative or Adverse Action			
	Model 1		Model 2	
	Coef. (se)	Odds Ratio	Coef. (se)	Odds Ratio
Constant	18.62 (13.06)	122,323,048	19.85 (12.92)	416,109,733
Graduation Rate (Lagged)	-0.03 (0.01)	0.97 ***	-0.02 (0.01)	0.98 *
Student-to-Faculty Ratio (Lagged)	-0.04 (0.03)	0.96	-0.05 (0.03)	0.95
Instruction Expense (Lagged)	-0.04 (0.32)	0.96	0.02 (0.33)	1.02
Academic Support Expense (Lagged)	-0.22 (0.16)	0.80	-0.30 (0.16)	0.74
Institutional Support Expense (Lagged)	-5.27 (3.07)	0.01	-5.15 (3.03)	0.01
Institutional Support Expense ² (Lagged)	0.38 (0.19)	1.47 *	0.34 (0.18)	1.41
Four-Year Indicator	0.89 (0.31)	2.42 **	0.59 (0.33)	1.80
Accounting Method (FASB)	0.03 (0.30)	1.03	0.36 (0.31)	1.43
HBCU Indicator			1.34 (0.27)	3.81 ***
<i>Log Likelihood</i>		-391.77		-379.57

Note: Expense variables are per FTE student and log-transformed. se = standard error. * $p < .05$. ** $p < .01$. *** $p < 0.001$

One potentially important finding, as shown in Figure 1, is that the difference between predicted probabilities of receiving a negative or adverse action by HBCU-status

is most pronounced at graduation rates below 50%—where over three-fourths of all HBCUs and non-HBCUs in the dataset are. For graduation rates closer to 100%, the differences between the two institution types are within standard error (likely because of the relative fewer observations in this range). This indicates that HBCUs are not just sanctioned more often as accountability for student outcomes. When controlling for the identified factors, HBCUs have higher odds of being penalized when they have low to moderate graduation rates relative to non-HBCUs. That is to say, non-HBCUs with low graduation rates are not subject to negative actions in the same way HBCUs are.

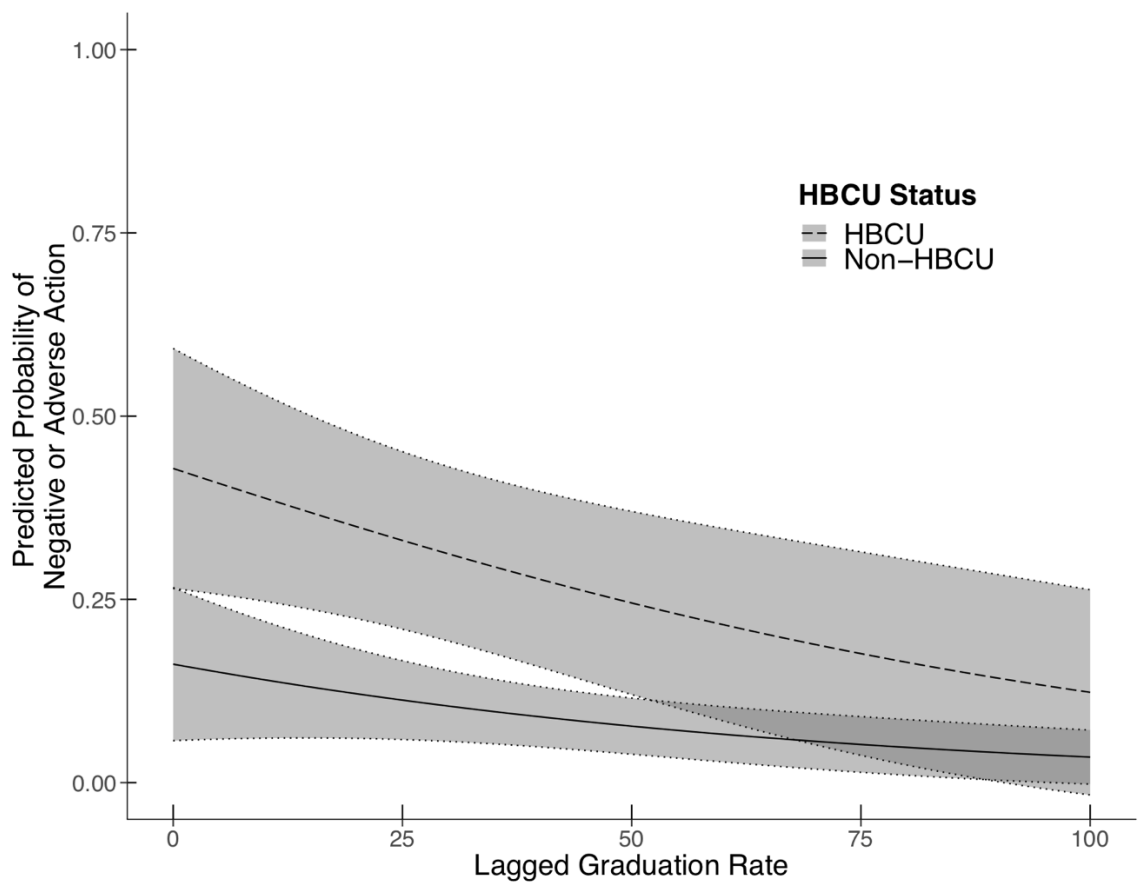


Figure 1. Predicted Probability of Negative or Adverse Actions by HBCU-Status. Predicted probability of negative or adverse actions across lagged graduation rates by HBCU status. Error shading represent 95% confidence interval.

Limitations

There are several important limitations to this study. While these analyses answer the research questions by determining how several aspects of accreditation actions differ between HBCUs and non-HBCUs, they do not imply causality or that HBCU-status is directly responsible for the disparities. Additionally, the data were drawn from one specific regional accreditor among the seven, and each agency has different standards and expectations. Therefore, these results cannot be generalized outside of this region. Still, it is important to focus on the SACSCOC region when exploring the research questions because, as noted previously, they cover the majority of all HBCUs and thus hold substantial power over these institutions. Additionally, focusing on one region helps ensure comparability across the actions. Similarly, these data are drawn from a specific time period under a specific set of standards. These boundaries are valuable for answering the research question but prevent generalizations.

Another consideration for these analyses is that the organizational data were drawn from IPEDS and are limited by reporting policies, expectations, and errors. For example, the graduation rate used in the analysis only represents a first-time full-time freshmen (GRS) cohort. When comparing institutions based on their mission, it is important to consider that some focus on serving part-time, transfer, or other students that may be excluded from the GRS cohort. This may bias these data. Nevertheless, this study explores an under researched area and contributes to our understanding of accreditation and organizations. Future studies may be able to draw in other organizational factors and expanded outcomes data.

A final limitation worth noting is that these data only included publicly available actions. These data provide a valuable empirical look at final outcomes from the accreditation process but do not encompass all of the interactions colleges and universities have with SACSCOC. Throughout the review process there are several opportunities for institutions to address areas of concern identified by reviewers. Any such concerns may be remedied before the final review that ultimately informs the public actions of the SACSCOC Board of Trustees (included in the dataset). While these iterative feedback loops might provide valuable research data, the process is designed to encourage colleges and universities to be able to take corrective action before external disclosure. Thus, while the final public actions do not necessarily capture the intricacies of the accreditation process, they still are a valuable data source when considering conferred organizational legitimacy. Further, the public actions represent an important signal for the public, other higher education institutions, employers, potential students, and alumni that have additional consequences well beyond the accreditation process. Therefore, the public nature of these data set actions is important for the research questions included in the study.

Discussion

The purpose of this paper was to examine how accreditation actions differ by HBCU status. Accrediting organizations wield substantial influence over member institutions; therefore, colleges and universities need to receive fair and equitable review—ensuring quality while respecting mission diversity. The results of the three analyses for the first research question provided an indication that HBCUs have statistically significant higher odds of facing negative actions (denied substantive

changes, placed on warning, or placed on probation) than their non-HBCU peers. This builds upon research from Donahoo and Lee (2008) that found accreditation actions reported in *The Chronicle of Higher Education* between 1996 and May 2005 against HBCUs were mostly negative. The analyses for this study used a broader dataset that extended the research to all SACSCOC actions within the study period, not just those reported in the press. Although these analyses for the first research question did not control for any other factors that may explain the disparity, it demonstrated statistically significant differences across several types of negative outcomes.

Following these results, the second research question found that even after controlling for the identified factors, HBCUs were 3.81 times more likely to receive a negative or adverse action than non-HBCUs. The included control variables suggested in prior literature, including financial information and student outcomes, do not explain the differences in action. Instead, the relationship with HBCU-status may reflect a failure of the accreditation process to account for this type of mission diversity. This is a cause for concern given the unique role HBCUs play in the higher education landscape. Indeed, isomorphic pressures on institutions runs counter to the notion of respecting institutional mission diversity. Failure to recognize that some institutions focus on access, while others focus on first generation students, and still others focus on underprepared students does those institutions a disservice. Those missions are important to the viability and success of the higher education landscape but may be discounted by certain outcomes (like six-year graduation rates).

Valuing the strengths of these institutions with their diverse missions requires a nuanced review. Disproportionate negative actions against HBCUs may indicate strong

coercive pressure. These actions operate as a coercive means to ensure HBCUs function in ways prescribed predominately by non-HBCUs. DiMaggio and Powell (1983) hypothesized that the more an organization relies on another, the more pressure they will face to comply. HBCUs within the SACSCOC region cannot be accredited by agencies in other regions; thus, they are wholly dependent on SACSCOC for regional accreditation. Their only other option (besides giving up access to financial aid altogether) is to seek recognition by a national accreditor. Yet, national accreditors do not provide the same level of legitimacy and privilege as regional accreditation. Therefore, HBCUs in the region are heavily dependent on SACSCOC and unable to leverage different sources of support (DiMaggio & Powell, 1983). This establishes SACSCOC as the more powerful actor coercing their members to comply. Thus, even though accreditation is technically a voluntary system, power differentials demand HBCUs to conform to expectations not historically developed by or for them (and currently voted on by mostly non-HBCUs). Additionally, some of the requirements (e.g., Title IV program responsibilities) are prescribed by the federal government but enforced by the accreditor. As the results of this analysis show, the outcomes of the accreditation process are disproportionately penalizing HBCUs, further exerting coercive pressure. Additionally, the standards frequently cited include both those voted on by members and prescribed by the federal government.

In line with a critical isomorphic lens, drawing on the conceptual work by Gonzales and colleagues (2018), the accreditation outcomes are not strictly tied to one commonly used measure of quality; instead the findings of this study suggest that HBCUs face more coercive pressure from the accreditation agency than their non-HBCU

peers. Rather than privileging one institution type over another, the process needs to support these colleges and universities in pursuing their missions. Given that the missions of many HBCUs include providing access for underrepresented and minoritized students—students excluded from non-HBCUs—accreditation must not differentially punish these institutions. Additionally, requiring accreditors to enforce federal requirements may further limit their ability to be mission centered in their reviews.

The results of this study add to the limited empirical research into how the accreditation process treats a particular kind of mission diversity. HBCUs are reliant upon accreditors in order to maintain access to federal financial aid. Thus, despite their different context, they face coercive isomorphic pressures to resemble other (non-HBCUs) within the field. Given that HBCUs are more likely to receive negative or adverse accreditation actions—and that key indicators fail to account for the disparity—future research needs to explore these differences and identify ways to ensure that institutions with distinct missions are supported by the accreditation process.

Future Research

This study raises additional important questions and lays the foundation for future research. First, while this study focused on the accreditation outcomes, the broader accreditation process may interact with mission diversity at numerous stages and in various ways. Colleges and universities engage with their accreditor at many points in time and in several forms. Although most of these interactions are often not made public, they nevertheless are important opportunities to understand institutional pressure and may provide valuable information on how accreditation treats different types of colleges and universities. Focusing on the actions as outcomes offers an important look at

accreditation, but future research that looks across the process will provide a more complete and useful view of accreditation.

Also, this study focused on how coercive isomorphic pressures act on HBCUs as a broad category. Future research can look at institution-level experiences of coercive pressure and the response that administrators take. Such work would offer a more nuanced view of the variation among HBCUs. Additionally, further research can explore whether and to what extent mimetic and normative pressures may act to increase isomorphism within the field of higher education. For example, as external pressures (including accreditors, states, and the federal government) incorporate more reporting requirements, offices become more standardized and compliance-focused. Such professionalization may further limit institutions from within as the external pressures coerce from outside. Additionally, with the ongoing phenomena of mission creep—as institutions expand what they aim to do and who they aim to serve—colleges and universities may look increasingly to imitate other institutions as they enter new domains. These mimetic pressures may further act to minimize mission diversity and support isomorphism.

Critically, given the role that accreditation plays in the survival of colleges and universities, future research needs to expand on this study to better understand not only how the process and its outcomes treat differing institutions, but also how the system can better support the entire higher education landscape. Studies that look at the process, for example, can help identify how the accreditors can better support colleges and universities through the process and tailor reviews to each mission. A critical look at how peer reviewers are trained may provide agencies with a deeper understanding of how to

accommodate different types of missions. Given the limited available research into how accreditors and the accreditation process treat mission diversity in practice, there are extensive opportunities for future studies. The results of this work indicate several areas of concern that are worth further exploration. The U.S. higher education landscape is strengthened by its many institutional types—diversity that has contributed to its worldwide recognition. Ensuring that the systems of accountability and legitimacy respect and support this is critical to its continued success.

Conclusion

Given the power that accreditors hold over their members—essentially continuation or closure—it is important that the system appropriately respects and values the strengths that different colleges and universities bring to the higher education landscape. Such a recognition does not have to come at the expense of quality, instead it must offer a careful examination into the purpose and value of higher education. Through their unique histories and missions, HBCUs bring immense value to higher education and it is critical that accreditors value and support these institutions. Unfortunately, as this study shows, HBCUs are more often sanctioned than their non-HBCU peers even when controlling for inputs like expenditures and outcomes like graduation rates. This study adds to the limited empirical work on how the accreditation system treats mission diversity and lays the groundwork for further research in this area.

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Chapter III

The Good, the Bad, and the Sanctioned:

Accreditation Sanctions as Quality Signals in a Competitive Market for Students

Recent trends in U.S. higher education have led to increased competition for students. From the peak of the Great Recession enrollment boon in 2010, undergraduate enrollment decreased seven percent by 2017 (National Center for Education Statistics, 2019). Demographic changes and enrollment declines pressure colleges to compete for students for continued survival (Christensen & Horn, 2019). In a recent survey, about 60% of institutions fell short of their enrollment targets and 67% fell short of their net revenue targets (Carlson, 2020). Further, the National Association for College Admissions Counseling recently relaxed their anti-poaching code which is expected to further exacerbate competition for students (Burke, 2020).

One potential tool universities use to demonstrate quality and support student recruitment is accreditation. Accreditation signals to the public (e.g., potential students, employers, and other colleges and universities) that an institution is high-quality, distinguishing valuable ones from those to be avoided (Eaton, 2012; Ewell, 2015). This quality assurance function supports confidence in the higher education system. Even though accreditation is often touted as a signal for quality—and resources for potential students highlight this role (e.g., Drexel, n.d.; EDsmart, n.d.; Northcentral University, 2018)—limited research explores whether it relates to enrollment behavior. If students rely on such signals, negative actions taken against an institution (e.g., placing an institution on warning) may reduce enrollment.

As a competitive enrollment market continues, institutions will need to better understand factors related to enrollment. If accreditation actions are used by students in enrollment decisions, institutions may redirect how they engage with the process. Connecting accreditation actions with student enrollment may also raise concerns over how the process treats different institutional types. For example, Historically Black Colleges and Universities (HBCUs) are more likely to receive negative or adverse accreditation actions even when controlling for certain factors (Burnett, 2020). Therefore, the purpose of this study is to use panel data methods to analyze how accreditation actions relate to student enrollment across educational sectors (two-year, four-year, public, and private not-for-profit). Specifically, I ask: *Is there a relationship between accreditation actions and institutional enrollment across sectors when controlling for resources (e.g., financial expenditures) and outcomes (e.g., graduation rates)?*

As I address my research question, I first provide a brief overview of the college choice literature related to institutional quality and accreditation. Then, I provide an overview of the conceptual framework guiding the study. Third, I describe the data and methods used. Fourth, I explain the results and describe the relevant limitations. Finally, I discuss how this study adds to the limited empirical research on the quality signaling role of accreditation in student choice.

Literature Review

Although scholars generally agree that accreditation provides a signal of quality (e.g., see Eaton, 2012; Ewell, 2015), limited empirical work has looked at the relationship between accreditation and enrollment decisions. Additionally, the college choice literature does not explicitly address accreditation as a factor influencing enrollment

decisions. In this literature review, I first provide a brief overview of the relevant student choice literature as it relates to accreditation. Second, I discuss available research on specialized accreditation and student choice.

The college choice literature notes the complicated nature of enrollment decisions. For example, Perna (2006) situates a student's enrollment choice within the context of various layers including: their habitus; their school and community context; the higher education context; and the broad social, economic, and policy context. Through this framework, college choice results from the decision a student makes using available information and resources across these four layers (Perna, 2006). Although accreditation is not explicitly discussed in Perna's (2006) framework, it relates to student choice through the third layer: the higher education context.

All of the contextual layers of Perna's (2006) model are interrelated. For example, the salience of institutional characteristics is mediated by the student's family (e.g., parental college experience) and community contexts (Perna, 2006). First-generation students might not understand the differences between national, regional, and specialized accreditation. Additionally, accreditation is directly influenced by the broader social and policy context (Gillen, Bennett, & Vedder, 2010). Calls for increased transparency of the accreditation process and documentation may affect perceptions of accreditation (e.g., Department of Education, 2015). This suggests that models focused on student choice and enrollment need to consider a relationship between accreditation actions and enrollment over time.

Students use institutional quality indicators (e.g., instructional expenditures and student-to-faculty ratio) in college choice (Long, 2004). Similarly, an institution's

accredited status serves as a potential signal of quality (Spence, 1973). Colleges and universities may use accredited status in marketing materials as a means of conveying their value (Roller, Andrews, & Bovee, 2003). These various quality indicators—along with other factors like cost, type (e.g., HBCU), or selectivity—are institutional characteristics that influence college choice and enrollment patterns at the college or university level (Perna, 2006).

The factors used by students in making their decisions may also be moderated by the sector (i.e., level and control) in which they enroll. For example, Stange (2012) found that unlike for four-year institutions, community college students do not sort by institutional quality. While better students are more likely to attend higher-quality four-year schools, they are no more likely to attend higher-quality community colleges (Stange, 2012). One possible explanation is the location-bound nature of community colleges and their relationship with potential students. There is less competition among schools at this sector. Therefore, when considering college choice, it is important to take sector into account.

Accreditation and Enrollment. A few studies have looked at the relationship between specialized accreditors and enrollment. One study used a questionnaire of newly enrolled students and found that accreditation by the Association to Advance Collegiate Schools of Business (AACSB) was the primary reason students selected a particular business program at a public four-year institution (Alexander & Hatfield, 1995). More recently, Womack and Krueger (2015) used paired *t*-tests to analyze the relationship between AACSB accreditation and enrollment across three public regional universities.

They found that earning initial programmatic accreditation helped drive students towards institutions (Womack & Krueger, 2015).

The American Bar Association is another programmatic accreditor whose relationship with enrollment has been examined in the literature. Specifically, Nussbaumer (2006)—concerned with historical and contemporary barriers to African Americans becoming lawyers—found that law schools under intensive review by the American Bar Association saw declines in African-American enrollment along with increased selectivity based on more rigorous admissions test scores. Nussbaumer (2006) postulated that law schools may feel pressured to be more selective in who they admit (based on test scores) in order to avoid scrutiny by their accreditor and thus exclude otherwise qualified African-American students. This finding suggests that accreditation sanctions may drive institutions to change their enrollment and student body characteristics. It is important to note that this pathway between accreditation sanctions and enrollment changes does not run through student choice.

Although these findings suggest there may be a relationship between accreditation and enrollment decisions, several caveats are worth noting. First, these studies focused on specialized accreditors which serve a different purpose than institutional ones. Because they focus on a specific program for a specific degree, their accreditation may be more salient and more closely tied to students' career goals. For example, a student who graduates from a program not recognized by its specialized accreditor may be unable to be licensed within their state. Therefore, although these studies suggest that accreditation may play a role in college choice, the present study will focus directly on the relationship between institutional accreditation and enrollment patterns. Additionally, this study may

provide further context for the gap in the college choice literature around accreditation as an institutional characteristic.

Conceptual Framework

This study primarily draws on signaling theory (Spence, 1973) in looking at how accreditation actions may serve as signals to potential students and influence institutional enrollment. Spence (1973) argued that modifiable characteristics (like education) can serve as signals in a market that others can use to make decisions (like hiring). As with an individual's education, an institution's accreditation is a characteristic that colleges and universities may pursue to distinguish themselves from peers. Indeed, schools tout their regional rather than national accreditation on their websites (e.g., see Drexel, n.d.; Northcentral University, 2018). Similarly, an institution being placed on sanction (or avoiding it) may serve as a signal for potential students' decisions. As prior work demonstrates, students use quality indicators in their choice for some types of colleges and universities (Stange, 2012). Accreditation sanctions may similarly send a signal to students about institutional quality.

Although I primarily use signal theory (Spence, 1973) to operationalize the relationship between accreditation sanctions and enrollment, I also draw on work by Perna (2006) to situate the signal in a potential student's enrollment decision. At the institutional level, we would expect enrollment to relate to student choice and thereby institutional enrollment. Thus, these theories motivate the connection between accreditation (as a signal) and student choice (through enrollment).

To retain accreditation, an institution periodically undergoes a review during which they engage in a self-study—determining how and whether they comply with the

standards of their accreditor. After a review process (that generally involves a site visit), peer reviewers make recommendations to the accreditor on the institution's compliance. The decision-making body of the accrediting agency makes the final determination and takes actions. These final actions include, for example, having accreditation reaffirmed, placing the institution on warning or probation, or having accreditation removed. Accreditors' final actions may be useful as signals by providing more information to potential students on the quality of a college or university.

Institutions may use accreditation directly as a marketing tool (e.g., for AACSB accreditation see Roller, Andrews, & Bovee, 2003) or students may use indicators of institutional quality or reputation in their college decisions (Perna, 2006). Additionally, as Perna (2006) suggests, geography and institutional proximity play a role in college choice. This geography may also impact the salience of the accreditation quality signal (Spence, 1973). For example, individuals within the institution's community may encounter signals (e.g., negative accreditation actions) through the media reporting and through community contacts rather than independently seeking out accreditation information. Indeed, Donahoo and Lee (2008) noted a potential bias of media to report accreditation penalties.

From the perspective of accessing federal financial aid, accreditation is a blunt tool. Schools either are accredited (and thus able to receive funding) or they are not. As a signal of quality, however, accreditation provides additional nuance. Being placed on probation or warning sends a signal that peer reviewers are concerned about the institution's quality. While on warning or probation the institution retains their accredited status—and access to federal funds—but must make changes to remedy the agency's

concerns and come into compliance within a set period of time (generally up to two years) or risk loss of accreditation. Although one would expect a decline in enrollment following loss of access to financial aid due to a restricted applicant pool, negative accreditation actions have a mediated relationship as a signal. That is, any relationship with enrollment would be related to applicant perceptions of accreditation and institutional quality.

Methods

Given the exploratory nature of the study, I focused on one regional accreditor, the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and used panel data methods to address the research question. Below, I discuss the data used to answer the research question and then turn to the analyses.

Data Sources. The dataset for this study was drawn from two sources. First, public actions (e.g., reaffirmation, warning, or probation) taken by the board of SACSCOC were available on their website through Annual Reports or Proceedings and provided information on each action for each institution within SACSCOC. I limited my dataset to the years for which complete consecutive data were available: 2006 to 2018. Second, for each action, institutional information—including sector, enrollment, graduation rates, and financial information—were taken from the Integrated Postsecondary Education Data System (IPEDS; National Center for Education Statistics, 2020). These data were collapsed into a panel dataset such that there was one action for each institution and year.

The institutional characteristics drawn from IPEDS fit into the higher education contextual layer of Perna's (2006) college choice process. Across the years of the study,

these variables (e.g., graduation rates) are available as other quality signals to students in making their enrollment decisions. Only for certain years (e.g., after a review year), however, are accreditation actions (i.e., signals) available and salient to college choice.

Analysis. For this study, I used panel methods to estimate the relationship between negative accreditation actions and institutional enrollment after controlling for selected variables. For all models, the dependent variable was full-time equivalent (FTE) enrollment and the control variables were all lagged by one year and included institutional resources (e.g., student-to-faculty ratio and expenditures per FTE student) and institutional outcomes (e.g., retention and graduation rates). For a complete list of control variables, see Table 2. Certain time-invariant institutional characteristics (e.g., sector and level) were excluded from the final analysis based on the inclusion of institutional and year fixed effects.

Table 2

Control Variables Included in the Analysis

Variable	Description
Institutional Resources	
Student-to-faculty ratio	FTE-based student-to-faculty ratio
Instructional spending	Instructional expenditures per Fall FTE student
Research spending	Research expenditure per Fall FTE student
Public service spending	Public service expenditure per Fall FTE student
Academic support spending	Academic support expenditure per Fall FTE student
Student service spending	Student services expenditures per Fall FTE student
Institutional support spending	Institutional support expenditures per Fall FTE student
Institutional Outcomes	
Full-time retention rate	Full-time fall-to-fall retention rate
Part-time retention rate	Part-time fall-to-fall retention rate
Graduation rate	Cohort-based 150%-time graduation rate
Transfer Rate	Cohort-based transfer-out rate

Note. FTE = full-time equivalent.

The final panel models included both institutional and year fixed effects based on the results of the Hausman test (rejecting the use of a random effect model; Wooldridge, 2016) and Lagrange multiplier-based tests (suggesting inclusion of both institutional and year fixed effects; Croissant & Millo, 2019). The inclusion of both fixed effects helped minimize bias from the institutional (e.g., prestige) and temporal characteristics (e.g., policy changes) omitted from the analysis. Because the accreditation actions are relatively infrequent (generally taking place every 10 years), the panel estimation allowed for a more robust analysis by treating the actions as shocks to each institution's enrollment.

The dependent variable (FTE enrollment) was consistent across all models. I estimated three models that focused on different ways to operationalize the key independent variables (i.e., sanctions). For the first two models, these sanctions took the form of being on warning (the lesser sanction) or being on probation (the harsher sanction). In the first model, I included the first and second lags of being on warning and the first and second lags of being on probation. An institution can remain on sanction for more than one year, therefore in the second model, I included only the first instance of a sanction to focus on its initial shock. In the third model, I considered an institution having its sanction elevated from warning to probation.

Models four through six focused on the different institutional sectors: four-year private not-for-profit, four-year public, and two-year public).³ For each model, the key independent variables were the first and second lags of both warning and probation. In the analyses, I also considered the speed and duration of any relationship. We would not

³ Other sectors (e.g., private, for-profit) were not separately analyzed due to their small sample size.

expect an immediate drop in enrollment following the public announcement of a sanction. Instead, given Spence's (1973) framework, we expect that any relationship would emerge later and persist until the information is no longer salient or relevant as a signal. Thus, in models seven through 12, I used various lags of probation to illuminate this temporal relationship—how quickly enrollment declined and how long it took for it to rebound.

The general estimated model was:

$$Y_{it} = \alpha_{1i} + \alpha_{2t} + \beta_1 S_{it-l} + \beta_2 R_{it-1} + \beta_3 O_{it-1} + \varepsilon_{it}$$

In the model, Y_{it} is the enrollment of institution i at year t , α_{1i} is the institution fixed effect, α_{2t} is the year fixed effect, S is the lagged sanction indicator (the variable of interest) at lag l , R is the vector of institutional resources, O is a vector of institutional outcomes, and ε_{it} represents the idiosyncratic error. If being placed on probation acts as a signal of low quality, we would expect to see a relative decline in enrollment following such action. The lagged action indicators reflect whether the institution was placed on warning or probation.

Results

Table 3 presents the descriptive statistics of the panel included in the study. As shown, there was a statistically significant difference between the FTE enrollment of institutions when they were on sanction and when they were not. Similarly, certain control variables included in the model differed by sanction status. Although this indicates differences across nearly every factor, these t -tests did not account for the individual or temporal heterogeneity available in the panel.

Table 3

Differences by Sanction Status

Scale	Not on sanction	On sanction	<i>p</i>
FTE enrollment	5,022.47	3,101.43	< 0.001
Student-faculty ratio	16.61	15.78	0.012
Instructional expenses per FTE student	9,906.58	7,571.42	< 0.001
Research expenses per FTE student	2,391.42	662.25	< 0.001
Public service expenses per FTE student	1,314.34	585.18	< 0.001
Academic support expenses per FTE student	2,319.19	1,899.08	< 0.001
Student services expenses per FTE student	2,317.83	3,057.92	< 0.001
Institutional support expenses per FTE student	4,547.91	5,604.89	0.001
Full-time retention rate	65.24	60.47	< 0.001
Part-time retention rate	44.87	40.08	0.012
Graduation rate	0.37	0.34	0.007
Transfer rate	0.17	0.16	0.699

Note. *p* indicates the significance level based on a *t*-test. FTE = full-time equivalent. These data represent an institution-year observation and compare cases where an institution is on sanction for the year with those cases not on sanction for the year. Being on sanction indicates an institution was on warning or on probation during the year.

Table 4 presents the results of the fitted two-way fixed effect panel model. The results indicate a relationship between the second lag of probation and log of FTE enrollment. Specifically, as shown in Model 1, an institution that was on probation two years prior had a predicted enrollment that was approximately 6.2% less.⁴ An institution placed on warning, however, showed no statistically significant decline.

Some institutions may be placed on sanction and remain for several years. Therefore, the second model considered whether the initial sanction was related to a relative decline in FTE enrollment. The new warning or new probation indicators excluded any consecutive sanction after the first. These findings are shown in Model 2 of

⁴ These percent changes were calculated using the equation $e^b - 1$.

Table 4. Again, although warning was not statistically significant, probation was. Specifically, when considering the second lag of only the initial probation taken against an institution, the predicted FTE enrollment was 5.4% lower. Model 3 included a term for whether an institution already on warning elevated to probation. This term was marginally significant ($p < .10$) with a predicted decline in FTE enrollment of 7.9%.

Table 4

Results of Two-Way Fixed Effects Models by Action

	<i>Dependent variable:</i>		
	log of FTE enrollment		
	(1)	(2)	(3)
	On Sanction	New Sanction	Elevated
Student-faculty ratio (lag)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)
Instruction expenses per FTE student (log, lag)	-0.117*** (0.020)	-0.116*** (0.020)	-0.115*** (0.020)
Research expenses per FTE student (log, lag)	0.025*** (0.006)	0.025*** (0.006)	0.025*** (0.006)
Public service expenses per FTE student (log, lag)	0.012*** (0.003)	0.012*** (0.003)	0.011*** (0.003)
Academic support expenses per FTE student (log, lag)	-0.039*** (0.010)	-0.039*** (0.010)	-0.040*** (0.010)
Student service expenses per FTE student (log, lag)	-0.046*** (0.010)	-0.046*** (0.010)	-0.045*** (0.010)
Institution expenses per FTE student (log, lag)	-0.166*** (0.012)	-0.166*** (0.012)	-0.165*** (0.012)
Full-time retention rate (lag)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)
Part-time retention rate (lag)	0.0003** (0.0001)	0.0003** (0.0001)	0.0003** (0.0001)
Graduation rate (lag)	0.146*** (0.036)	0.147*** (0.037)	0.146*** (0.036)
Transfer rate (lag)	0.046* (0.024)	0.047* (0.024)	0.048** (0.024)
On warning (lag)	-0.015 (0.016)		
On warning (second lag)	-0.021		

	(0.016)		
On probation (lag)	-0.002		
	(0.024)		
On probation (second lag)	-0.064***		
	(0.024)		
New warning (lag)	-0.008		
	(0.017)		
New warning (second lag)	-0.025		
	(0.017)		
New probation (lag)	-0.023		
	(0.026)		
New probation (second lag)	-0.056**		
	(0.025)		
Elevated sanction (lag)		-0.013	
		(0.054)	
Elevated sanction (second lag)		-0.082*	
		(0.049)	
Observations	3,891	3,891	3,891
R ²	0.197	0.197	0.195
F Statistic	52.022***	51.853***	59.405***
	(df = 15; 3178)	(df = 15; 3178)	(df = 13; 3180)

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. FTE = full-time equivalent.

When focusing on particular institutional sectors, the relationship remained. Table 5 shows the results of the model for three subgroups of institutions: four-year private not-for-profit (Model 4), four-year public (Model 5), and two-year public (Model 6). As the results indicate, the relationship between the second lag of probation and enrollment generally held across institutional sector. Four-year private not-for-profit institutions had a 9.9% decline in FTE enrollment two years after probation (although this result is only marginally significant [$p < .10$]). For public institutions, four-year and two-year

institutions had a 4.9% ($p < .05$) and an 8.1% ($p < .05$) relative decline in FTE enrollment two years after probation, respectively.

There are several differences worth noting. First, unlike other sectors, two-year public institutions also showed a statistically significant decline in enrollment of around 9.9% after one lag of probation. Second, four-year public institutions had a marginally significant decline in enrollment of around 3.9% after one lag of warning ($p < .10$). Third, Four-year private not-for-profit institutions showed a relative decline in enrollment following warning. Specifically, these institutions had a 7.7% ($p < .05$) decline in FTE enrollment two years after being on warning.

Table 5

Results of Two-Way Fixed Effects Models by Sector

	<i>Dependent variable:</i>		
	log of FTE enrollment		
	(4)	(5)	(6)
	4-Year Private	4-Year Public	2-Year Public
Student-faculty ratio (lag)	-0.004 (0.003)	0.014*** (0.002)	0.004*** (0.001)
Instruction expenses per FTE student (log, lag)	-0.218*** (0.052)	-0.062* (0.034)	-0.066** (0.026)
Research expenses per FTE student (log, lag)	0.019 (0.013)	-0.004 (0.007)	-0.008 (0.010)
Public service expenses per FTE student (log, lag)	0.037*** (0.007)	0.006 (0.006)	0.003 (0.003)
Academic support expenses per FTE student (log, lag)	-0.012 (0.027)	0.029 (0.019)	-0.057*** (0.014)
Student service expenses per FTE student (log, lag)	-0.027* (0.015)	-0.059*** (0.022)	-0.082*** (0.016)
Institution expenses per FTE student (log, lag)	-0.169*** (0.034)	-0.099*** (0.017)	-0.103*** (0.016)
Full-time retention rate (lag)	0.003*** (0.001)	0.0004 (0.001)	0.0005 (0.0004)
Part-time retention rate (lag)	-0.0001 (0.0002)	0.0003** (0.0002)	0.0005 (0.0003)
Graduation rate (lag)	-0.098 (0.074)	0.316*** (0.087)	0.307*** (0.047)
Transfer rate (lag)	0.034 (0.052)	0.023 (0.039)	-0.023 (0.034)
On warning (lag)	-0.019 (0.041)	-0.040* (0.023)	-0.001 (0.020)

On warning (second lag)	-0.080** (0.039)	-0.020 (0.025)	-0.017 (0.020)
On probation (lag)	0.036 (0.054)	0.031 (0.031)	-0.105*** (0.038)
On probation (second lag)	-0.112* (0.060)	-0.057** (0.026)	-0.098** (0.041)
Observations	654	1,097	2,085
R ²	0.254	0.201	0.192
F Statistic	9.478*** (df = 15; 418)	14.966*** (df = 15; 895)	28.087*** (df = 15; 1777)

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. FTE = full-time equivalent. Model 1 only includes private not-for-profit four-year institutions.

Another important consideration was the duration of the relationship between probation and enrollment. Table 6 provides sequential models with additional lags. As shown, there was no relationship following the first lag. The second lag, however, was at least marginally statistically significant across all models. The third lag was statistically significant through the model containing six lags while the fourth lag was statistically significant for all models. The fifth lag was the longest statistically significant lag across any model but was only significant with five or fewer lags. These models show that the duration of the relationship across all institutions was relatively long—between two and five years. Still, given the rapid decline of the sample when introducing additional lags, the results presented above focused on the shorter-term two-year lag.

Table 6

Results of Two-Way Fixed Effects Models with Various Lags

	<i>Dependent variable:</i>					
	log of FTE enrollment					
	(7)	(8)	(9)	(10)	(11)	(12)
Student-faculty ratio (lag)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.002* (0.001)	0.003*** (0.001)	0.004*** (0.001)
Instruction expenses per FTE student (log, lag)	-0.117*** (0.020)	-0.117*** (0.020)	-0.118*** (0.020)	-0.135*** (0.022)	-0.127*** (0.025)	-0.113*** (0.026)
Research expenses per FTE student (log, lag)	0.025*** (0.006)	0.025*** (0.006)	0.026*** (0.006)	0.017*** (0.006)	0.001 (0.007)	0.003 (0.008)
Public service expenses per FTE student (log, lag)	0.012*** (0.003)	0.012*** (0.003)	0.012*** (0.003)	0.007** (0.003)	0.007** (0.003)	0.009** (0.003)
Academic support expenses per FTE student (log, lag)	-0.039*** (0.010)	-0.041*** (0.010)	-0.041*** (0.010)	-0.064*** (0.012)	-0.055*** (0.013)	-0.050*** (0.015)
Student service expenses per FTE student (log, lag)	-0.045*** (0.010)	-0.045*** (0.010)	-0.045*** (0.010)	-0.050*** (0.014)	-0.067*** (0.015)	-0.070*** (0.016)
Institution expenses per FTE student (log, lag)	-0.166*** (0.012)	-0.165*** (0.012)	-0.165*** (0.012)	-0.150*** (0.013)	-0.113*** (0.014)	-0.109*** (0.015)
Full-time retention rate (lag)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0003)	0.001*** (0.0004)	0.001*** (0.0004)	0.001 (0.0004)
Part-time retention rate (lag)	0.0003** (0.0001)	0.0003** (0.0001)	0.0003** (0.0001)	0.0002* (0.0001)	0.0001 (0.0001)	-0.00001 (0.0001)
Graduation rate (lag)	0.144*** (0.036)	0.138*** (0.036)	0.139*** (0.036)	0.206*** (0.042)	0.169*** (0.048)	0.062 (0.052)

Transfer rate (lag)	0.046* (0.024)	0.048** (0.024)	0.047** (0.024)	0.035 (0.026)	-0.007 (0.032)	0.005 (0.033)
On probation (lag)	-0.005 (0.024)	-0.012 (0.024)	-0.018 (0.025)	-0.001 (0.026)	-0.043 (0.027)	-0.041 (0.031)
On probation (second lag)	-0.062*** (0.024)	-0.060** (0.024)	-0.065*** (0.024)	-0.048** (0.024)	-0.043* (0.024)	-0.044* (0.026)
On probation (third lag)		-0.062*** (0.023)	-0.058** (0.023)	-0.068*** (0.024)	-0.058** (0.026)	-0.023 (0.028)
On probation (fourth lag)			-0.058** (0.027)	-0.059** (0.027)	-0.079*** (0.030)	-0.091*** (0.032)
On probation (fifth lag)				0.049* (0.029)	0.034 (0.028)	0.024 (0.031)
On probation (sixth lag)					-0.007 (0.025)	-0.008 (0.026)
On probation (seventh lag)						-0.024 (0.033)
Observations	3,891	3,884	3,876	3,241	2,642	2,266
R ²	0.196	0.198	0.199	0.209	0.183	0.171
F Statistic	59.807*** (df = 13; 3180)	56.047*** (df = 14; 3173)	52.437*** (df = 15; 3167)	42.513*** (df = 16; 2578)	27.607*** (df = 17; 2097)	19.986*** (df = 18; 1741)

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. FTE = full-time equivalent. Model 1 only includes private not-for-profit four-year institutions.

Limitations

There are several limitations to this study worth noting. First, the data were limited to accreditation actions from one of the seven regional agencies. Standards and processes vary across accreditors; therefore, the results of the study are limited to SACSCOC. Further, although there is broad comparability across regions in terms of the signal (e.g., accredited, on sanction, or unaccredited), it is possible that there were regional variations in how the public interpret such signals. For example, students in a

certain region might be more likely to focus on accreditation than students in a different one. In this study, differences across the SACSCOC states would be captured in the institution fixed effects. Indeed, I included fixed effects to control for other institutional-specific characteristics not included in the dataset that may relate to enrollment choices.

Another important limitation is that the data related to institutional characteristics, resources, and outcomes were drawn from IPEDS and are subject to various constraints and potential for error. For example, the graduation rate is based upon the six-year graduation rate for first time full-time students. Although this is widely used as an indicator of quality, it may be biased against certain types of institutions such as colleges and universities with a large part-time population.

As noted by Perna's (2006) college choice framework, student enrollment decisions are complicated and involve numerous interrelated layers. This study conceptualized accreditation actions as quality signals, but these signals would primarily relate with choice at one layer. These signals were decontextualized from other factors relevant to student choice. For example, even though I included analysis that distinguished between sectors, other contextually salient factors could not be considered. Still, the results suggest a signaling relationship in aggregate.

Additionally, the use of signal theory (Spence, 1973) has several limitations. A signaling relationship requires both salience and a belief about the signal's value. While prior literature suggests students may rely upon specialized accreditation as a signal (e.g., they pay attention and understand it), it is less clear the extent to which that may be the case among institutional accreditation. If few students notice or understand institutional accreditation, it would undermine any interpretation of a causal relationship. For

example, another possible explanation for the relationship is that institutions may face negative publicity for issues that also lead to negative accreditation actions. In such situations, students may be responding to the negative publicity for the original issue rather than the sanction. Alternatively, if news outlets publicize a negative action (even without a precipitating issue), potential students may respond based on a lack of understanding. While this might still demonstrate a signaling relationship, it could be based on misinterpretation.

Discussion

In this study, I set out to explore the relationship between accreditation sanctions and institutional enrollment. I estimated several panel models to determine any relationship across different types of sanctions, different sectors, and over several lags. Drawing primarily on signal theory (Spence, 1973) and additionally on Perna's (2006) college choice model, I found that students may be responsive to accreditation sanctions as signals of institutional quality. Although the analyses do not establish a causal connection, the time-based relationship (e.g., lag between action and enrollment) allows for a one-direction relationship. Specifically, depending on its sector, an institution experienced between a five and 10 percent relative FTE enrollment decline in the one to five years following being placed on probation. Further, four-year private not-for-profit institutions showed a relative decline in enrollment following warning. Based on signal theory (Spence, 1973) and prior work on student sensitivity to specialized accreditation that indicates students pay attention to accreditation (Alexander & Hatfield, 1995; Womack & Krueger, 2015), my findings are consistent with the idea that students respond to the regional accreditation sanctions.

The nature of the relationship across sectors provides a nuanced explanation about how accreditation may operate as a signal of institutional quality. For example, four-year private not-for-profit institutions experienced a decline in their enrollment for both warning (the lesser sanction) and probation (at a marginal significance level), while public institutions only experienced a decline given probation (the more extreme sanction). Given the additional monetary cost involved in attending a private institution, students may be more receptive to and interested in quality indicators. Further, more students who attended these institutions had parents who also obtained postsecondary education (Redford & Mulvaney Hoyer, 2017). Both institutional cost and quality would be more salient to such students at the higher education contextual layer in Perna's (2006) college choice model. Thus, enrollment responses to the less serious sanction may suggest that students are more attentive to signals of concern. Therefore, there might be an interaction between accreditation sanctions and college price or first-generation-student status. Future research may explore such an interaction.

The more rapid decline in enrollment for community colleges (i.e., a one-year versus a two-year lag) might be related to their location-driven connection with students. The immediate proximity of the college with their likely student population might reduce the speed of the relationship. For example, a local newspaper or broadcast news may publicize a negative action shortly following the public announcement (e.g., Bryant, 2019). This makes the sanction more immediately noticeable to students. In turn, this could drive students to pursue other educational options or forgo postsecondary study. If this hypothesis were true, we also might expect a stronger relative relationship, along with the more immediate one, because the sanction would be salient to students less

likely to seek it out. Indeed, the results demonstrate a larger relative decline for public two-year institutions when compared with public four-year schools. This finding may provide additional nuance to those findings by Stange (2012) who noted that students do not generally sort by ability or school quality for community colleges. Specifically, among students whose incremental cost of attending an institution other than their community college is narrowly too high (e.g., they would normally attend their community college), the quality signals may shift the individual-specific cost function just enough to push them to attend a different institution.

It is important to reiterate one explanation that these analyses cannot exclude. It is possible that some other exogenous shock (e.g., a well-publicized mishandling of student sexual harassment complaints) may lead to both a negative accreditation action and a decline in enrollment. Future research can include a larger sample (e.g., across additional accreditors or over a longer timeframe) or exclude schools with such scandals. Even in such cases, the relationship with a sanction indicates that compliance with accreditation standards may help institutions avoid enrollment declines from either source.

Another possible explanation relates to the findings by Nussbaumer (2006). That study implied that programs or institutions might modify their student body make-up in response to scrutiny by an accreditor. As noted, those enrollment changes would be connected with accreditation actions through the institution rather than through student choice. Such an explanation might apply to those institutions with admission requirements (and undercut the signaling argument), but open admissions institutions would not be able to engage in such behavior. Thus, such an explanation is unlikely to

apply to the findings among two-year public institutions, 90.7% of which had open admissions policies.

These findings demonstrate that certain negative accreditation actions were related to subsequent declines in FTE enrollment. Colleges and universities that face probation—a potentially disruptive proposition—may also face declines in enrollment as well as related financial challenges. Community colleges may be particularly hard hit by such actions. These findings may imply unintended consequences for accreditation sanctions. Indeed, an important purpose of sanctions is to allow schools to correct deficiencies without losing access to federal financial aid. The apparent connection with enrollment changes demonstrated by the study suggests a potential undermining of this purpose. While this may be consistent with pro-transparency arguments (e.g., Dickeson, 2006), it may be inconsistent with accreditors' ability to effectively support their members.

This study has several implications for institutions, accreditors, and policymakers. Institutions—especially community colleges—may benefit from paying attention to public acknowledgement (e.g., media coverage) of accreditation actions and proactively clarifying what they mean and how they will address concerns. While institutions might also benefit from simply avoiding negative actions altogether, that strategy must be tied to the pursuit of excellence and not compromise institutional integrity. Specifically, institutions must build organizational resilience and avoid maladaptive practices that undermine the benefits of accreditation (see Fernandez & Burnett, In Press). Accreditors must carefully balance their quality assurance (e.g., signal function) and their mission to support educational excellence and improvement. In order to do so, they might also

support students (and the public) in understanding what the accreditation actions mean and how they support strong institutions. Further, they must ensure members do not distort accreditation actions in order to support their recruitment goals (e.g., using a public sanction as a tool to poach students away from a sanctioned institution).

Accreditors must also consider how their processes may disadvantage certain institutional types, such as HBCUs, and leave them more likely to receive sanctions (Burnett, 2020). As demonstrated in Table 3 above, there were differences between institution-year observations when on sanction as compared with when not on sanction. In the estimated panel models, these control factors were significantly related to FTE enrollment even given the main relationship with probation. This suggests other systemic differences between sanctioned institutions. Future work may explore such differences. Finally, policymakers must carefully consider the role of accreditation in higher education regulation. For example, accountability pressure and public disclosures of concern may be better suited for state and federal agencies. Realigning responsibilities across the triad of accreditors, states, and the federal government might allow for stronger institutions while serving the public interest.

Conclusion

Colleges and universities face a ratcheting up of enrollment pressures. On one side, they face a declining pool of potential students and on the other face increasingly competitive recruitment strategies. As institutions adapt to this new marketplace for students, they will need to leverage their resources and mitigate liabilities. This study suggests that negative accreditation actions are related to relative declines in FTE enrollment even after controlling for other quality indicators. Potential students might be

using sanctions as a signal of lower quality. While another possible explanation—that declines are a response to other exogenous signals—cannot be ruled out, this study adds to the limited research on accreditation and explores how regional actions relate to institutional enrollment.

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Chapter IV

A New Path or the End of the Road: Institutional Mergers and Closures

Private college and university closures are increasingly of concern within the higher education sector. Due to inadequate finances and changing demographics, mergers and closures are projected to increase in the coming years (Christensen & Horn, 2019). Even campus leaders are concerned. In a survey of college and university chief executives, 23% of respondents from private non-profit institutions reported they have had serious internal discussions about merging, and 14% reported that they could see their institution closing or merging within five years (Jaschik & Lederman, 2020).

Mergers and closures dramatically disrupt the lives of students, employees, and other stakeholders. For example, the sudden collapse of ITT Technical Institutes displaced over 40,000 students and left 8,000 employees jobless (Smith, 2016). Despite the forecasted increase of closures and mergers, there remains limited research into factors related to these outcomes. Additional scholarship may help higher education better adapt to changes and minimize disruptions for students, employees, and other stakeholders.

Institutional survival relies on many external resources such as student enrollment, philanthropic giving, and federal grants. Institutions that fail to maintain access to adequate resources must close or merge. Accreditation is a critical—but often overlooked—institutional resource. Authorized accreditors serve as gatekeepers to the federal financial aid on which many colleges and universities rely. Without these funds many institutions would be unable to enroll aid-dependent students. Thus, loss of accreditation can bring about an institution's demise (Jaschik, 2013; Leef & Burris,

2002). Additionally, through its peer review processes, accreditation can support institutional success and prevent institutional closure. For example, in the face of crisis and potential closure, accreditors' peer feedback helped Trinity Washington University refocus and recover (McGuire, 2009). Accreditors may also be in a position to support institutional mergers, as conduits for potential partners, or institutional closures, as a pathway for teach-outs and an orderly termination.

The purpose of this study is to better understand factors—such as enrollment, financial resources, and accreditation—related to the closures and mergers of private non-profit colleges and universities. Specifically, the study asks:

1. What is the relationship between institutional closure and finances, enrollment, mission, and accreditation?
2. What is the relationship between institutional merger and finances, enrollment, mission, and accreditation?
3. What are the differences in these relationships between the closure or merger outcomes?

As I address these three research questions, I first provide a brief overview of the literature related to institutional survival. Second, I provide an overview of the conceptual framework guiding the study and describe the data and methods used. Then, I explain the results and limitations. Finally, I discuss how this study adds to the research on institutional mergers and closures.

Literature Review

Researchers have looked at institutional survival from various contexts. Lyken-Segosebe and Shepherd (2013) considered factors related to the closure of small (less

than around 1,000 students) four-year colleges and universities. They compared the last year of data available in the Integrated Postsecondary Education Data System (IPEDS) for closed institutions with the most recent data for comparable operating institutions. While Lyken-Segosebe and Shepherd (2013) focused exclusively on closed institutions, other work has treated institutional failure more generally as including either a merger or a closure. Porter and Ramirez (2009) used a discrete time hazard model to empirically test the relationship of time-varying factors with institutional failure (i.e., merger or closure) from 1975 to 2005. Unlike cross-sectional studies, this approach allowed for time-varying covariates. Stowe and Komasara (2016) compared failed institutions with operating ones. Still other work has focused on institutions under stress. Martin and Samels (2009) suggested 20 specific indicators of a stressed institution at risk of failure. Bates and Santerre (2000) treated closures and mergers as separate outcomes and looked at their respective rates across four-year private colleges from 1960 to 1994. The authors analyzed rates across the sector rather than individual institutions and therefore did not identify factors related to either merger or closure.

Below, I discuss various factors identified in the literature that relate to threatened institutional survival. Where appropriate I note the specific outcome as a stressed institution, an institution closing, an institution merging, or an institution failing—meaning either closing or merging. While prior work suggests factors that relate to institutional survival in the specified ways, such scholarship does not identify factors that differentiate between the various outcomes at the heart of this study.

Finances. Unsurprisingly, there has been broad agreement that financial factors are related to institutional survival. Although researchers have operationalized financial

variables in different ways, the general trend has been that fewer financial assets or revenues and more liabilities or expenditures increases the risk of institutional failure. For example, Stowe and Komasara (2016) found that closed institutions had fewer total assets, higher total expenses per full-time equivalent (FTE) student, and higher total liabilities per FTE student than open ones. Additionally, Porter and Ramirez (2009) found a larger endowment per student reduced the risk of institutional failure. Martin and Samels (2009) noted a weaker endowment relative to operating budget as a risk factor for stressed colleges and universities. Finally, institutions that ran a deficit were also at risk (Lyken-Segosebe & Shepherd, 2013).

Enrollment. As with finances, there is similarly broad agreement that student enrollment is an important factor related to institutional survival. Specifically, a larger enrollment was associated with a reduced risk of failure (Porter & Ramirez, 2009; Stowe & Komasara, 2016). Conversely, small enrollment has been noted as a risk factor (Lyken-Segosebe & Shepherd, 2013; Martin & Samels, 2009). Beyond overall enrollment, the relative proportion of full-time students (as opposed to part-time ones) was also a significant factor related to institutional survival. Specifically, an institution with more full-time enrollment had a lower risk of failure (Lyken-Segosebe & Shepherd, 2013; Stowe & Komasara, 2016).

Institutional Accreditation. Although few scholars directly connect accreditation with institutional survival, accreditation sanctions (e.g., being on probation) are included as a risk factor on the list from Martin and Samels (2009). Additionally, other scholarship notes the role of accreditation in preventing institutional failure (e.g., McGuire, 2009) and that the loss of accreditation “would be a death knell for many institutions” (Leef &

Burris, 2002, p. 6). Indeed, college closures have been linked to accreditation concerns (e.g., see Jaschik, 2013; Toppo, 2019) due to the loss of access to federal financial aid. Further scholarship points to the importance of accreditation for mergers (Pierce, 2017) and closure processes (Hoyle, 2017) as well as to support those at risk of failure (Elmen, 2009). In particular, Hoyle (2017) highlighted the value of working with an accreditor to ensure a successful closure.

Religious Affiliation. The relationship between religious affiliation and institutional survival remains unclear. Whereas two studies found religious affiliation decreased the risk of merger or closure (Bates & Santerre, 2010; Porter & Ramirez, 2009), other work (Lyken-Segosebe & Shepherd, 2013) concluded that religious institutions were at higher risk for closure. This difference could be related to the sample (i.e., only small institutions) included in the study by Lyken-Segosebe and Shepherd (2013) or differences in how each study define religious affiliation and closure.

Conceptual Framework

This study used a resource dependence perspective (Pfeffer & Salancik, 2003) and conceptualized (private) colleges and universities as constantly at risk of failure. These institutions must effectively attract and draw on external resources—recruiting students, ensuring adequate funding (e.g., through development), and maintaining accreditation. Colleges and universities able to effectively manage and respond to external resources survive, while those that fail to do so must close or merge. Struggling institutions that nonetheless are able to draw in or manage certain external resources may be attractive for mergers by other institutions thereby avoiding closure.

Through this framework, the study drew on factors relating to closure or merger from prior scholarship. Within this context, failure resulted from the intra-institutional conditions and resources available to a college or university (e.g., students, mission, accreditation, or finances). If an institution did not have adequate funds to function, they could have pursued a merger or discontinue operation. Accreditation is an important, but sometimes overlooked, resource that institutions rely upon for their operation. As noted above, being accredited enables schools to access federal financial aid while also providing other nonpecuniary benefits like peer feedback. Given differences in institutional conditions and resources, some colleges or universities may be in a better position to merge than others. Some floundering schools have unsuccessfully pursued mergers prior to closing (e.g., Jaschik, 2018; Jaschik, 2019). Additionally, in some cases institutions may pursue strategic mergers even if they are not in danger of failure. Varying factors and resources may differentially influence an institution's decision to pursue merger and ability to successfully do so. Therefore, it is important to treat merger and closure as separate failure outcomes that may relate in differing ways to institutional resources. Below, I discuss each resource and its place in the conceptual framework guiding this study (see Figure 2). It is important to note that the resources may interact with one another in various ways. For example, accreditation allows aid-dependent students to enroll in an institution; a school's mission might support recruitment of particular students; poor financial management might lead to accreditation issues; and a university with substantial financial resources might be able to manage enrollment swings with tuition discounting.

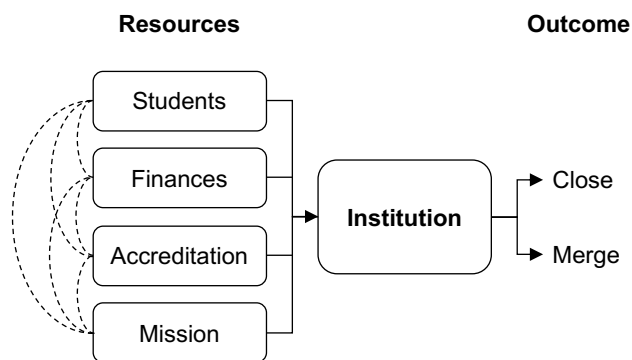


Figure 2. Conceptual Framework for Institutional Survival. The extent to which institutions are able to attract and leverage resources relates to their closure, merger, or continued survival. The arrows track the directional flow while the dotted lines indicate indirect interactions among the resources.

First, as noted above, research suggests total and percent full-time enrollment are important factors related to institutional survival (Lyken-Segosebe & Shepherd, 2013; Martin & Samels, 2009; Porter & Ramirez, 2009; Stowe & Komasaara, 2016). Student enrollment influences an institution's finances as both an asset and a liability. Students are a critical resource that colleges and universities must attract and retain. Tuition dollars are often key to financial viability. Conversely, institutions must also spend funds on their students (e.g., for services and instruction). Full-time students generally bring in more money than part time ones but often cost more. Still, some services (e.g., mental health, record management) may incur similar costs across full-time and part-time students. Therefore, the models included both total FTE enrollment and percent full-time enrollment.

The mission (e.g., religious-affiliated, baccalaureate-focused) directly relates to an institution's resources and finances. For example, an institution with a particular religious affiliation may leverage that mission in student recruitment or even receive additional funding. Alternatively, a school whose traditional mission focused on offering bachelor's

degrees (e.g., a Carnegie-designated baccalaureate institution) may struggle to build out new master's degree programs. As noted above, prior work suggests that religious affiliation may help (Bates & Santerre, 2000; Porter & Ramirez, 2009) or hinder (Lyken-Segosebe & Shepherd, 2013) survival.

An institution's accreditation may be a valuable resource in several ways. As noted previously, one important function of accreditation is as gatekeeper to federal financial aid. This ability is critical to enroll students and access their tuition dollars. Thus, accreditation is a key external resource on which institutions rely for their survival. Additionally, accreditation can serve as a means to encourage institutional quality and growth. Through the self-study and peer-review accreditation processes, institutions can improve, engage in organizational learning, and be well positioned for survival.

Finally, finances are the resource most directly related to institutional survival. If a college or university has no money with which to operate, it cannot survive. As noted in the studies discussed above, certain financial conditions including endowment, expenditures, and tuition reliance are all related to failure. Colleges and universities rely on external sources of funding to complement their enrollment-driven finances. For example, an institution may rely on philanthropic support, grant aid, or even public appropriations to ensure adequate operating funds. Additionally, institutions may (through strategy or historical luck) minimize external financial reliance by building a strong endowment. Different strategies to manage their reliance on external resources may lead to differing abilities to survive and continue operation (Pfeffer & Salancik, 1978).

Methods

To address the research question, I performed several survival analyses using institution-level data. These data were drawn from three federal sources spanning 2002 through 2018. First, the Postsecondary Education Participants System provides information on institutional closures or mergers (Federal Student Aid, 2019). Second, accreditation information came from the Database of Accredited Postsecondary Institutions and Programs (Department of Education, 2020). Third, institution characteristics and financial data were drawn from IPEDS (National Center for Education Statistics, 2020). I focused on institutional accreditors classified by the Office of Postsecondary Education (n.d.) as national or regional accreditors and excluded those classified as specialized/programmatic or state agencies. Analyses were limited to standalone private non-profit degree-granting institutions founded before 2002. Factors related to closures or mergers among public institutions would be quite different than those related to private ones. Indeed, the closure of public institutions has been an extremely rare event (Bates & Santerre, 2000).

The dataset used in the analysis included 1,533 total institutions with 132 closing and 51 merging. Table 7 provides a breakdown of whether the college or university closed or merged by the group of their accreditor(s).

Table 7

Number of Institutions that Closed or Merged by Accreditation Group

Regionally Accredited	Nationally Accredited	Total	Closed (n)	Closed (%)	Merged (n)	Merged (%)
No	No	248	54	21.8	26	10.48
No	Yes	63	20	31.8	1	1.59
Yes	No	1209	56	4.6	24	1.99
Yes	Yes	13	2	15.4	0	0

	1,533	132	51
<i>Note.</i> The accreditation group is based on whether the institution was ever accredited by one of the respective agencies within the dataset (2002 to 2018).			

Table 8 provides the descriptive statistics for the untransformed predictor variables included in the models. The key financial variables of interest included the difference between assets and liabilities (i.e., solvency) and the difference between expenditures and revenues (i.e., deficit). Based on the conceptual framework, I would expect that schools with fewer financial resources (e.g., insolvent or running a deficit), with fewer students, or without regional or national accreditation would be at greater risk of failure. When considering the particular outcome, such institutions would be more likely to close, but their relationship with merger might be more subtle. For example, a campus with accreditation may also make a more attractive merger partner and thus be more likely to merge but somewhat less likely to close.

Table 8

Descriptive Statistics of Institution-Year Cases

Variable	Discrete		Continuous				
	n	%	min	max	median	mean	sd
Carnegie Group							
Associates							
Colleges	1,523	6.16					
Baccalaureate	7,387	29.9					
Masters/Doctoral/	6,332	25.6					
Research							
Specialized-	1,342	5.43					
Medical and							
Health							
Specialized-Other	1,972	7.98					
Specialized-	3,895	15.8					
Religious							
Unavailable	2,262	9.15					
Religious affiliation							
No	10,974	44.4					
Yes	13,737	55.6					
<Missing>	2	<0.01					
Regionally accredited							
No	4,796	19.4					
Yes	19,917	80.6					
National accredited							
No	23,725	96.0					
Yes	988	4.0					
FTE enrollment			3	121,437	1,016	1,983	3,659.45
Percent full-time enrollment			0.72	100	83.22	78.27	20.72
Solvency (millions)			-52.19	46,964.18	42.47	293.33	1,658.90
Insolvent							
No	23,314	94.3					
Yes	168	0.68					
<Missing>	1,231	4.98					
Deficit (millions)			-6,989.23	13,873.30	-0.76	-13.94	180.87
Deficit							
No	17,035	68.9					
Yes	7,603	30.8					
<Missing>	75	0.3					

Note. These data represent each observation (institution-year) within the dataset.

Analysis. To address the research question, I used three extended Cox models to explore institutional survival in three ways: closures alone, mergers alone, and either

outcome (i.e., failure). I then analyzed differences between the event type models. One key benefit of the Cox regression model is that it does not require an *a priori* specified time-to-event distribution (Singer & Willet, 2003). This prevents biased parameter estimates based on an incorrect parametric specification. Additionally, this model allowed for the use of both time-invariant and time-varying covariates.

The estimated model was:

$$h(t, X(t)) = h_0(t) \exp [\delta_1 M(t) + \delta_2 R(t) + \delta_3 N(t) + \delta_4 E(t) + \delta_5 E(t-1) + \delta_6 F(t) + \delta_7 F(t-1)]$$

In the model, $h(t, X(t))$ is the hazard of the outcome at time t given all predictors X at time t , $h_0(t)$ is the baseline hazard function, and M are the institutional mission variables at time t ⁵. Institutional mission included Carnegie group⁶ and an indicator for whether the school had a religious affiliation. R is the regional accreditation indicator at time t and N is the national accreditation indicator at time t . E represents the enrollment characteristics of Fall FTE enrollment and percent full-time enrollment at time t and $t-1$. F includes the financial characteristics at time t and $t-1$. Financial variables included the difference between total assets and total liabilities (solvency), the difference between total revenues and total expenditures (deficit), and indicator variables for whether the institution was insolvent (i.e., had more liabilities than assets) or had a deficit (i.e., had more expenditures than revenues). As indicated, all of the enrollment and financial

⁵ Only 132 unique institutions had a change in their Carnegie group ($n = 6$), their religious affiliation indicator ($n = 43$), regional accreditation indicator ($n = 71$) or national accreditator indicator ($n = 20$) within the dataset. The results of the analysis were consistent excluding these institutions.

⁶ These are based on the 2000 Carnegie classifications. I further grouped the classifications into broader categories. For example, “medical schools and medical centers” and “other separate health profession schools” were combined into a “Specialized-Medical and Health” group. Tribal Colleges were excluded from the analysis ($n = 4$).

variables were included for the current year (e.g., the year of closure) as well as a one-year lag.

Results

The results of the Cox regressions are presented in Table 9. Based on the model, being accredited by either a regional or national agency was not a statistically significant factor related to closure. Other factors, however, were related to changes in an institution's closure hazard. A specialized religious school (e.g., seminary) had a hazard ratio of 0.32 for closure ($p < .01$). This indicates that the hazard of closure was approximately 3.17 times lower than the baseline (associates colleges). Similarly, being insolvent or having a deficit increased an institutions risk of closure 8.66 times ($p < .001$) and 2.63 times ($p < .001$), respectively. The amount of the lagged deficit (in millions of dollars) was statistically significant ($p < .05$) with the higher deficit related to an increased hazard. The FTE enrollment of an institution was also significantly related to the hazard of closure. Specifically, the hazard ratio for a one-log-FTE enrollment increase was 0.09 ($p < .001$), indicating a 10.96 times decrease in hazard for closure. The hazard ratio for the lagged FTE enrollment was similarly significant—though in the opposite direction. A one-log-FTE enrollment increase related to a 7.44 increase in hazard for closure ($p < .001$).

Table 9

Results of Cox Models by Outcome

	Closed	Merged	Failed
Carnegie Group: Baccalaureate	-0.273 (0.403)	-0.541 (0.869)	-0.391 (0.368)
Carnegie Group: Masters/Doctoral/Research	-0.841 (0.616)	0.022 (0.851)	-0.693 (0.481)
Carnegie Group: Specialized-Medical and Health	-1.257+ (0.647)	0.832 (0.660)	-0.396 (0.407)
Carnegie Group: Specialized-Other	-0.356 (0.402)	0.636 (0.659)	-0.103 (0.337)
Carnegie Group: Specialized-Religious	-1.155** (0.400)	-0.002 (0.658)	-0.888** (0.334)
Carnegie Group: Unavailable	-0.165 (0.385)	-0.310 (0.802)	-0.238 (0.342)
Religious affiliation	-0.280 (0.266)	-0.582 (0.434)	-0.359 (0.225)
Regional Accreditor	0.120 (0.294)	-1.263** (0.414)	-0.362 (0.237)
National Accreditor	0.283 (0.376)	-1.347 (1.084)	0.024 (0.334)
FTE enrollment (log)	-2.395*** (0.289)	-1.581* (0.628)	-2.203*** (0.246)
FTE enrollment (log, lag)	2.007*** (0.323)	1.391* (0.652)	1.817*** (0.271)
Percent full-time enrollment	0.010 (0.012)	0.010 (0.021)	0.011 (0.011)
Percent full-time enrollment (lag)	-0.006 (0.013)	-0.020 (0.021)	-0.011 (0.011)
Solvency (millions)	0.007 (0.012)	-0.011 (0.013)	-0.002 (0.012)
Solvency (millions, lag)	-0.020 (0.013)	0.008 (0.012)	-0.003 (0.012)
Insolvent indicator	2.159*** (0.386)	-0.702 (1.093)	2.066*** (0.380)
Insolvent indicator (lag)	-0.525 (0.525)	2.441* (0.951)	-0.097 (0.473)

Deficit (millions)	0.030 (0.018)	-0.014 (0.017)	-0.005 (0.018)
Deficit (millions, lag)	0.020* (0.010)	-0.015* (0.007)	-0.020** (0.007)
Deficit indicator	0.966*** (0.246)	-0.049 (0.367)	0.697*** (0.202)
Deficit indicator (lag)	0.432+ (0.238)	0.636+ (0.355)	0.589** (0.198)
Observations	21,944	21,944	21,944
Pseudo-R ²	0.013	0.004	0.014
Max. Possible Pseudo-R ²	0.059	0.026	0.084
Log Likelihood	-529.403	-249.590	-807.190
Wald Test (df = 21)	296.800***	86.050***	367.240***
LR Test (df = 21)	283.868***	77.681***	304.792***
Score (Logrank) Test (df = 21)	781.235***	147.199***	740.114***

Note. + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < .001$. FTE = full-time equivalent. Failed = either merged or closed. The values represent the estimated coefficients and the standard error in parentheses.

The factors related to institutional merger were different than those for closure. Being regionally accredited was associated with a 3.54 times decrease in merger hazard ($p < .01$). The relationships between merger and both FTE enrollment and lag FTE enrollment were similar to that for closure. Specifically, while a one-log-FTE enrollment increase related to a 4.86 times decrease in hazard ($p < .05$), a one-log-FTE enrollment increase for the lag increased this risk of hazard by 4.02 times ($p < .05$). The lag of the solvency indicator was significant even though the same-year indicator was not. Being insolvent in the prior year was related to a 2.02 times increase in hazard for merger ($p < .05$). Interestingly, even though the lagged deficit amount increased the hazard for closure, the reverse relationship was shown for mergers. The higher the lagged deficit was associated with a lower risk of institutional merger ($p < .05$). The more general failure outcome was not a particular focus of the study, but I included it for added

context. Still, the results for failure indicate that they trend towards the closure results. Additionally, they highlight the value of considering closure and merger as separate outcomes rather than grouping them together.

In distinguishing between the two outcomes—merger or closure—the omnibus log-likelihood test for competing risk between the two outcomes indicated that each predictor was not identical across models ($p < .001$; Singer & Willett, 2003). Table 10 shows the results of comparing each predictor across models using a generalized Wald statistic (Singer & Willett, 2003). The results indicate that there was a statistical difference between an institution's risk for merger or for closure for specialized medical and health schools ($p < .05$), regional accreditation ($p < .01$), insolvency ($p < .05$), lagged insolvency ($p < .01$), lagged deficit amount ($p < .01$), and deficit indicator ($p < .05$).

Table 10

Differences in Predictors Across Merger and Closure Models

Variable	<i>p</i>
Carnegie Group: Baccalaureate	0.779
Carnegie Group: Masters/Doctoral/Research	0.411
Carnegie Group: Specialized-Medical and Health	0.024 *
Carnegie Group: Specialized-Other	0.199
Carnegie Group: Specialized-Religious	0.134
Carnegie Group: Unavailable	0.871
Religious affiliation	0.554
Regional Accreditor	0.006 **
National Accreditor	0.155
FTE enrollment (log)	0.239
FTE enrollment (log, lag)	0.397
Percent full-time enrollment	0.999
Percent full-time enrollment (lag)	0.581
Solvency in millions of dollars	0.336
Solvency in millions of dollars (lag)	0.117
Insolvent indicator	0.014 *
Insolvent indicator (lag)	0.006 **
Deficit in millions of dollars	0.081 +
Deficit in millions of dollars (lag)	0.004 **
Deficit indicator	0.022 *
Deficit indicator (lag)	0.632

Note. + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < .001$. FTE = full-time equivalent.

Figure 3 shows the Cox adjusted survival curves for closure based on the financial indicators of solvency and deficit-status. As expected, an institution that is solvent and

has no deficit has the highest survival probability while an institution that is both insolvent and has a deficit has the lowest.

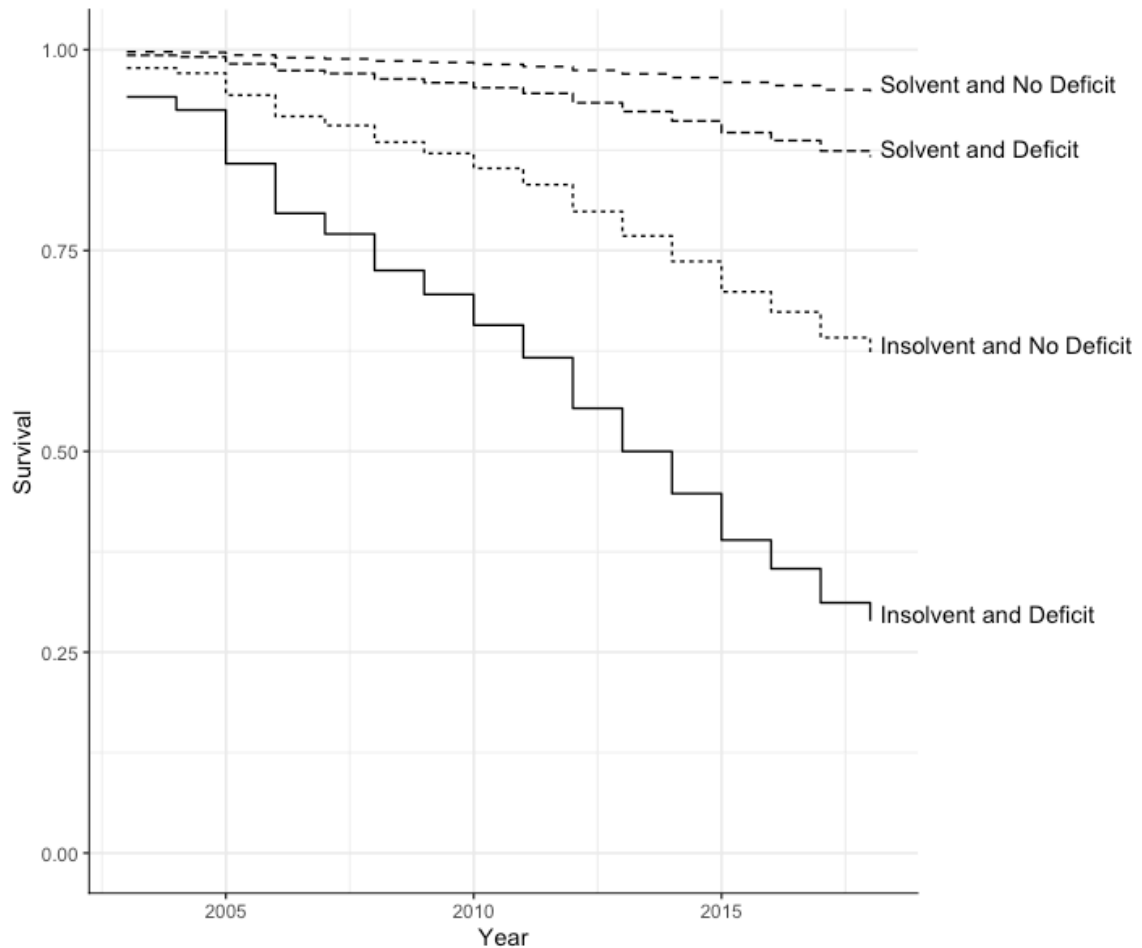


Figure 3. Cox Adjusted Survival Curves for Closure by Solvent- and Deficit-Status. These represent the predicted survival curves for institutions that only differ across their solvent- and deficit-indicator variables.

Figure 4 shows the Cox adjusted survival curves by solvency for a closure or a merger outcome. The clear difference is in insolvent institution's closure curve. Those institutions have a lower survival probability when compared with closure for solvent institutions or with merger for either solvent status.

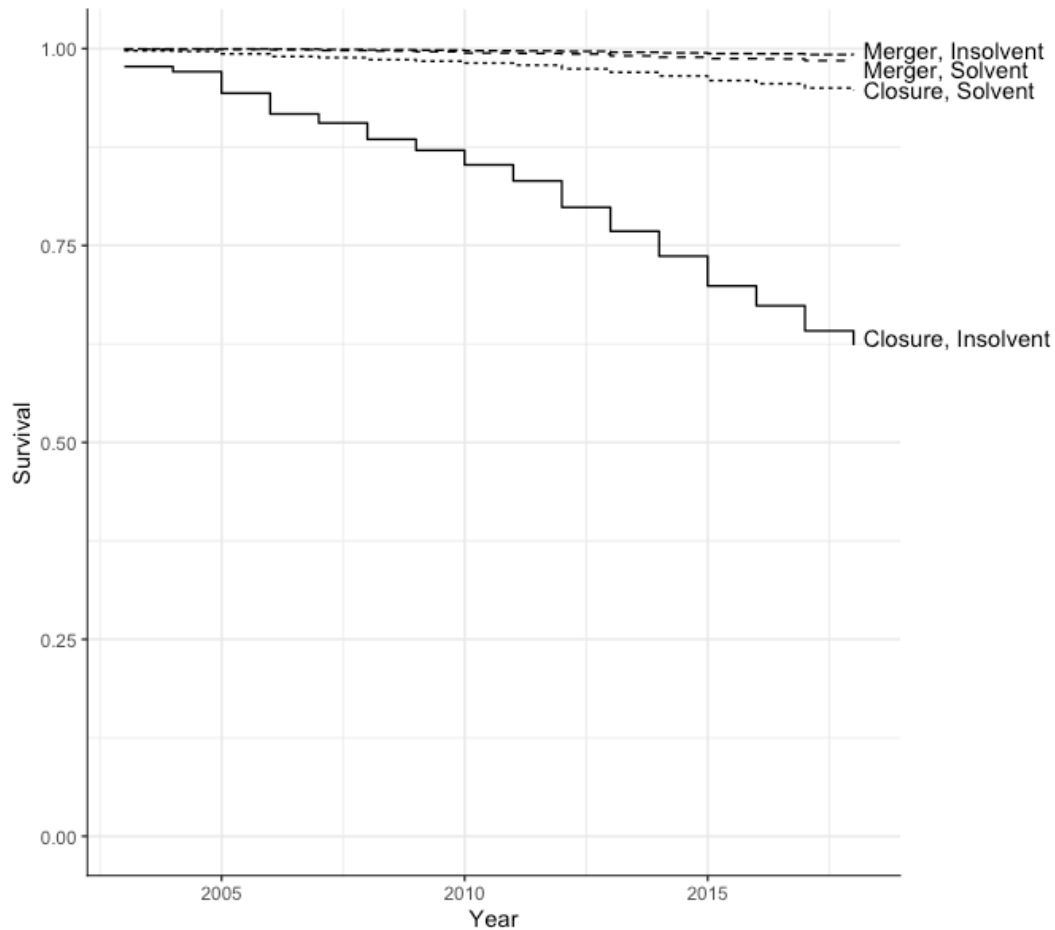


Figure 4. Cox Adjusted Survival Curves by Solvent-Status for Closure or Mergers. These represent the Cox adjusted survival curves for the merged and the closed models for institutions that only differ by solvent indicator.

Limitations

The study includes several important limitations. First, it does not imply causality between the included factors and either the closure or the merger outcome. Instead, the study merely identified factors correlated with each outcome. Additionally, data for this study were drawn from a limited period (specifically 2002 to 2018) and were based on particular federal definitions of closure and merger. Therefore, even though certain factors may be related to the outcomes, the connection may be time- or definitionally-

bound. Finally, the study was limited to private not-for-profit degree-granting colleges and universities and cannot be extended to public or private for-profit colleges.

The dataset also contained limited cases representing the outcomes of interest. Indeed, even though they are expected to become more frequent, closures and mergers have been relatively rare occurrences among institutions of higher education. Therefore, any analysis that focuses upon these outcomes are met with challenges. For example, only eight institutions that had their regional accreditation status change within the data also closed. This precluded robust analysis for such institutions across the included covariates. Similarly, although the research question was focused on accreditation, the dataset does not include actual actions (e.g., institutions placed on probation with their accreditor). While such data might provide additional nuance, the small number of closures and mergers make such analysis challenging. Instead, this study focused on institutions that either are or are not nationally or (separately) regionally accredited.

Although economic conditions, such as the Great Recession, are likely related to the resources available (e.g., potential students, alumni giving, endowment performance), they could not be accounted for in the present study. Another critical concern is the extremely low pseudo- R^2 of the models that may indicate limited explanatory power. This is somewhat balanced by the c-statistics of both models—0.91 for closure and 0.87 for merger—which suggest strong goodness of model fit (Kremers & Liebig, 2007). While the findings illuminate the research area—and suggest directions for future research—it is important not to interpret findings outside these limitations.

Discussion

The results of these analyses provide additional insight into the nature of closures and mergers among U.S. private non-profit colleges and universities. Despite this study's focus on accreditation, neither regional nor national accreditation were significant factors in the hazard of closure. Being regionally or nationally accredited neither reduced nor increased the risk of institutional closure. The lack of a protective relationship somewhat undercuts accreditation's member-serving and public-serving purposes. On the member-serving side, this suggests that as a resource, accreditation (national or regional) might not provide institutions with support preventing closure. On the public-serving side, these agencies may not be appropriately sanctioning or removing at-risk institutions from membership. This would indicate that agencies may not be doing enough to protect students from educational disruption.

The significant relationship for regional accreditation and merger has several possible explanations especially in light of its non-significance for closure. One possible explanation is that accreditation might act as a barrier for mergers. For example, a struggling college might be unable to obtain approval for merger from their regional accreditor in time to successfully merge. If this were the case, we might expect that regional accreditation would increase the hazard of closure as these institutions might run out of options and time.

Alternatively, it is possible that accreditors provide members with feedback and support that prevent institutions from needing to pursue a merger. Still, if this were the case, we might also expect a similar relationship with closures. It is possible, however, that the results are highlighting a narrow group of colleges and universities that are

marginally but not irreparably deficient. Such institutions could make attractive merger partners but overall be less likely to actually close. Thus, regional accreditors may help these particular institutions improve and remain independent, thereby reducing their risk of merger. Indeed, the case of Trinity Washington University might highlight such an institution (McGuire, 2009). The lack of significance for closure hazard could thus reflect that institutions with more serious concerns may be beyond the help of regional accreditors. Future research might be able to shed light on this subtle distinction.

Enrollment Variables. The relationship between FTE enrollment and lagged FTE enrollment with both merger and closure is a noteworthy finding. The protective relationship of FTE enrollment is stronger than the deleterious relationship with lagged FTE enrollment. This suggests that falling enrollment might be a risk factor because steady or rising enrollment can balance out the relative risk. In general, these findings support prior research that suggests higher enrollment serves as a protective factor for failure. Steady or rising enrollment likely indicates a healthy institution with the ability to attract and retain students. It indicates that students have confidence in the viability of the institution. Additionally, rising enrollment in particular may indicate an institution that is investing in new programs that are meeting new student demand. Alternatively, falling enrollment may suggest that students are not confident in the institution. For example, potential students may choose to enroll at a different school and current students may be withdrawing or transferring out of the institution.

One area in which these findings differ from prior work is in the relative proportion of full-time versus part-time students. Unlike findings from Stowe and Komasara (2016) and Lyken-Segosebe and Shepherd (2013), this factor showed no

significant relationship with any of the outcomes. This is likely due in part to differences in how the variable was operationalized. Whereas Stowe and Komasara (2016) used *t*-tests to separately compare FTE enrollment, full-time enrollment, part-time enrollment, and total enrollment between closed and open institutions and Lyken-Segosebe and Shepherd (2013) simply compared the raw ratios, the present study included the relative proportion of full-time students. This minimized potential risk for collinearity and allowed the analysis to control for other factors as well. Other variables in the model likely captured the variation seen in prior work. For example, the overall trend in FTE enrollment (e.g., rising or falling) of a campus may be effectively capturing the differences and may better explain the relationship. This suggests that full-time versus part-time enrollment may be less important than previous studies have suggested.

Religious Affiliation. These results may also shed light on prior contradictions regarding religious affiliation being a risk factor (Lyken-Segosebe & Shepherd, 2013) or a protective factor (Porter & Ramirez, 2009; Bates & Santerre, 2000) for institutional failure. Based on the analyses from the present study, religious-affiliation was not a significant factor for closure, merger, or failure. However, being a Carnegie-classified specialized religious institution was a protective factor for closure and failure. In general, the findings support the idea that religious institutions (e.g., seminaries) might be somewhat protected from closure while religious-affiliated institutions more generally may not. This finding may still be consistent with the findings by Porter and Ramirez (2009) which did not appear to separate or control for specialized religious schools. For example, the significant relationship they found might be better explained by the type of

the school rather than the more general religious-affiliated variable. Additionally, it is possible that the different years covered by the dataset explain this subtle difference.

Similarly, the years covered by Bates and Santerre (2000) do not overlap with this study. Still, their study focused on the relationship between percent of religiously affiliated schools and the closure or merger rates, not on the individual school's survival. Therefore, although the rates in aggregate may be related, these findings suggest that based on school-level data, no relationship exists. With regard to Lyken-Segosebe and Shepherd's (2013) findings—which were based on the religious Carnegie classification—the opposite results of this study were surprising. Most specialized religious institutions are small (average FTE enrollment is 310) and they are also exclusively four-year institutions, therefore they would have met Lyken-Segosebe and Shepherd's (2013) inclusion criteria. Still, in reviewing the schools, it appears as though there is a mismatch between the Carnegie classifications used in their study and the 2000 version used in the present one. For example, while one institution was classified as religious in Lyken-Segosebe and Shepherd's (2013) study, its 2000 Carnegie classification from IPEDS was unavailable. Therefore, the different findings may be the result of different classifications used.

Financial Variables. The results of the analyses were generally consistent with prior work indicating that stronger financial positions—being solvent and running no deficit—protected institutions from failure (Porter & Ramirez, 2009; Stowe & Komasaara, 2016). As with the at-risk indicators identified by Lyken-Segosebe and Shepherd (2013), these results demonstrated that running a deficit was a risk factor for closing. Despite these general consistencies, these findings showed subtle distinctions. While Stowe and

Komasara (2016) found a difference between assets for failed institutions (without any control variables), this study found no differences in assets less liabilities. Instead, there was a significant relationship with the *lagged* deficit amount. This points to the importance of considering the time-based relationship of financial variables and suggests that the prior financial position was more closely tied to institutional survival than the current position. Similarly, the lag of being insolvent increased the hazard of merger. However, the higher the lagged deficit *amount*, the lower the risk of merger. This relationship is opposite from that of closure and may point to important differences in the outcomes. For example, an institution with a higher deficit may make for a less attractive merger partner.

The significance of the insolvent indicator (as opposed to the actual solvency amount) for both closure and merger is interesting. Since most institutions are solvent, it suggests that the overall solvent asset *amount* may be less important than simply maintaining solvency. For example, an institution that was heavily insolvent (e.g., had liabilities significantly greater than their assets) may have been no more or less likely to merge or to close than one that was only somewhat insolvent. Additionally, because the relationship was evident only in the immediate term for closures (i.e., the lagged term was nonsignificant), it is possible that rapid financial crises are more damaging to institutions than ones that build over time. In the more gradual cases, institutions might have been able to pursue other options (like merger). Indeed, the lagged insolvent term significantly increased the hazard for merger. This suggests there may be a brief window during which merging is a viable option. After that window closes, however, institutional closure may be the more likely outcome. The post hoc analyses comparing these two

variables showed significant differences. Therefore, the timing of insolvency (and presumably the institution's response) was an important factor in an institution closing or merging.

Conclusion

As the U.S. higher education landscape continues to shift and adapt to changing demographic and structural trends, policymakers and institution leaders need to understand the undercurrents. As with prior social and demographic shifts that proliferated institutions and swelled enrollment (e.g., the GI Bill and the Baby Boomers), new trends might lead to institutional ebbs. This waxing and waning is neither new nor unexpected, but through scholarly analysis, policymakers and institutional leaders can better understand its nature and mitigate deleterious outcomes.

One contribution of this study to the literature is in treating merger and closure as separate outcomes. The study showed a few factors and patterns that are consistent across closure and merger. Student FTE enrollment was a significant protective factor. Higher enrollment reduced the hazard for closure or for merger. The pattern over time was also similar across outcomes. Institutions with a decline in enrollment face increased risk of closure or merger. Although the significant factors overlapped in several ways, there were also a few important differences. The results suggest that there is a window during which an institution facing insolvency might be able to successfully merge and, presumably, avoid closing. Solvency crises that emerge quickly, however, may simply increase the hazard of closure. The lagged amount of deficit an institution ran also was important. Larger deficits might make an institution a less attractive merger partner while simultaneously increasing the risk of closure.

Findings from this study indicate, unsurprisingly, that good financial health and consistent enrollment are important for institutional survival. While additional nuance between the closure and merger outcomes might suggest ways for institutions to pursue a merger (e.g., act quickly and minimize a deficit), one implicit takeaway is that institutions will continue pursuing the resources that will enable ongoing survival. As colleges and universities can decreasingly rely on a steady supply of students, increased competition may challenge schools to employ alternate strategies to survive.

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Chapter V

Conclusion

From the Morrill Land Grant Acts through the reauthorizations of the Higher Education Act, the federal government has supported the viability and proliferation of colleges and universities. Still, the system remains largely decentralized with states bearing the primary responsibility. This distributed nature has enabled numerous types of colleges and universities with differing missions to flourish (Wolff, 2005; Zumeta, 2005). Institutions are neither reviewed nor approved by any federal quality assurance agency. They are not limited to a prescribed size, structure, or mission. Indeed, accreditation spread in part as a response to the lack of oversight and consistent quality. While it began as a way of distinguishing college-level institutions, accreditation has evolved to serve competing stakeholders. For example, accrediting agencies serve their members by signaling quality and supporting improvement, and they serve the public by ensuring financial aid only goes to quality institutions. Over time, accreditors have accepted a more central accountability role as they remain gatekeepers to federal financial aid (Gillen, Bennett, & Vedder, 2010).

In this series of studies, I examined the role of institutional accreditation in the increasingly competitive higher education landscape. The three chapters explored different elements of supporting member colleges and universities: mission, enrollment, and survival. First, I considered the ability of an accreditor to provide a mission-centered review to members. Second, I analyzed the signaling relationship between accreditation actions and institutional enrollment. Third, I focused on accreditation and institutional

mergers and closures. These studies support a more nuanced consideration of accreditation.

Accreditation and Mission

While prior scholarship acknowledges the ability of accreditation to provide a mission-centered institutional review (Brittingham, 2009), as shown in Chapter II, this might not be entirely accurate. While the move to a mission-centered reviews supported the proliferation of diverse institutions, there may still be barriers for marginalized institutions like Historically Black Colleges and Universities (HBCUs). While this marginalization is likely historically rooted, the current accountability landscape may further encumber these schools. For example, the focus on graduation rates follows an accountability logic, but it may undermine higher education access. Further, as shown in Chapter II, HBCUs were disproportionately sanctioned even among those institution with lower graduation rates. This points to broader inequities and patterns of marginalization. Therefore, as accreditors aim to support their members, they need to intentionally counter historical and systemic biases.

Accreditation and Enrollment

Another frequent claim is that accreditation signals to the public that institutions are of high quality (Eaton, 2009). Indeed, accreditation's origins included this role and its eventual linking with federal funding leveraged this connection (Gillen, Bennett, & Vedder, 2010). Still, limited research has explored whether, or to what extent, students may rely upon accreditation as a signal in choosing schools. As Chapter III demonstrated, student enrollment was related with certain accreditation actions. For example, student

enrollment showed a relative decline after an institution was placed on probation with its accreditor.

Although the relationship is noteworthy, this study cannot establish a causal link. Still, given the nature of the association across time and across institutional sectors, it is plausible that such a connection exists. This is an important consideration as colleges and universities struggle to attract and enroll a decreasing pool of potential students. Further, this relationship highlights the inherent contradiction between serving members (encouraging improvement) and serving the public (identifying quality). While being accredited is the primary indicator of quality, negative actions may be providing additional quality signaling. On the one hand, negative actions are a key tool that accreditors can use to encourage members to correct errors; by highlighting shortcomings, schools can improve. On the other hand, however, if these actions are used *against* the school (e.g., in enrollment decisions), this may prove destabilizing. For example, even if a school quickly rectifies the issue warranting probation, their enrollment—and the financial stability that brings—may be disrupted. As accreditors and policymakers consider the role of accreditation in the higher education landscape, they must carefully consider whether such an outcome is appropriate or unintended. If the main indicator of quality is simply being accredited, public negative actions that fall short of removing accreditation might send the (potentially) wrong signal to prospective students.

Accreditation and Institutional Survival

Colleges and universities are organizations with numerous stakeholders. They serve students and employ many people. Indeed, institutions of higher education are

sometimes the anchors of their communities. As with other organizations, these must manage their resources for continued operation. Accreditors are in a unique position to support strong institutions, correct issues that may lead to failure, facilitate mergers should the need arise, and support an orderly process of closure to minimize student disruptions. Therefore, Chapter IV considered the relationship between accreditation and institutional survival.

The results showed that being regionally or nationally accredited did not have a significant relationship with institutional closure, but regional accreditation did reduce the risk of merger. This seemingly contradictory relationship may point to a narrow group of institutions likely to merge but unlikely to close. Regional accreditors might be able to help these institutions remain independent but be unable to help other colleges and universities (e.g., with greater challenges) avoid closure. Even beyond the accreditation-related focus, the findings illuminate an unresearched—and sometimes controversial (e.g., see Fain, 2019)—topic. The chapter identified several factors related to institutional closure and merger and identified factors that distinguished between them. In particular, the findings support the idea of a limited window during which institutions may successfully pursue a merger before closing.

Implications for Future Research

The accreditation process is complicated. Each chapter only considered a particular part of the accreditation picture. Future research can continue to fill in the gaps. For example, Chapter II focused on negative or adverse public actions, but accreditors interact with their members in other ways. Future research might explore these interactions to highlight other methods by which accreditors support institutions and

organizational learning. Chapter III similarly focused on public actions, but the traditional quality signal was in being accredited or not. Future research may consider that signal and how well different types of students (e.g., first-generation, continuing-generation, or international students), understand accreditation. Additionally, such research might be able to separate out enrollment changes due to damaging publicity from a negative accreditation action versus from a scandal. Given the relative infrequency of institutional closures and mergers, qualitative research may be particularly useful to better understand those phenomena especially with regard to accreditation. While Chapter IV provided additional context and highlighted subtle differences, future research may provide an inside look at how institutions at risk for closure interact with their accreditor and the strategies they employ. Another potential area for future research is in spanning the disparate nature of accreditation. There are numerous differences that are barriers to research across accreditors, and future research can bridge these gaps as the foundation for a deeper understanding of accreditation.

Implications for Policy and Practice

Collectively, these findings point to an ongoing need to consider the purpose of accreditation. If accreditors aim to provide a mission-centered review, they must counteract systemic barriers. If accreditors are expected to correct institutional shortcomings, negative actions to that end should not cause unintended harm. If accreditors are called on to minimize the disruption of school closures, they need to be empowered to support members and facilitate proactive mergers. Recent changes have endangered the ongoing survival of institutions. Demographic shifts are reducing the relative abundance of students and their tuition dollars, decreased public support stretches

institutional budgets, and increased competition for research funding splits faculty focus. Colleges and universities have and will continue to compete for legitimacy, prestige, students, development funds, and research support (Hendrickson, Lane, Harris, & Dorman, 2013). Yet, as market pressures are brought to bear, it remains to be seen how accreditors—and the colleges and universities they serve—will respond. Accreditation has the opportunity to remain a countervailing force. Indeed, one benefit of having the third part of the regulatory triad be private is that it can be a barrier against government overreach. Still, the challenge accreditors have in navigating the complicated regulatory landscape cannot be overstated. Expectations that accreditors serve their members and the public sometimes conflict. For example, as Chapter III showed, negative actions intended to support institutions may actually harm them. Accreditors and the regulatory environment in which they operate must find the delicate balance between accountability and support. Policymakers must consider leveraging the other triad members (states and the federal government) to achieve the nation's higher education goals.

Despite the recent revisions to rules governing higher education accreditation (see Student Assistance General Provisions, 2019), these organizations remain the gatekeeper to federal financial aid. This power alone ensures their continued relevance to the sector. Still, these agencies have played an important and often under-recognized role in the development of the U.S. higher education system. This series of studies sought to shed light on how accreditation influences the sector while also noting areas that may be improved. Still, accreditation remains an under-researched area of scholarship.

The U.S. higher education system has benefited from the private, peer-review system of accreditation. Accreditors provide members with valuable feedback and

guidance while encouraging ongoing improvement. They provide the public with an inexpensive—and seemingly effective—system of quality assurance. Indeed, the sector's prestige is at least in part due to the interaction of the unique system. Still, as higher education has faced crises before, it does now as well. Various changes threaten to destabilize the sector. Accreditation has the potential to support higher education through the current challenges.

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