SCHRÖDINGER'S EXTENSION CENTER: EXAMINING INSTITUTIONAL CHARACTERISTICS AFFECTING THE CLOSURE OF OFF-SITE LOCATIONS

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The primary purpose of this research was to examine institutional characteristics of four-year, public colleges and universities that closed off-site locations between 2012 and 2019 through the lens of resource dependence theory. As institutions attempt to maximize their available resources and make the best use of existing resources, there will inevitably be moments where an off-site location will come into question. Over the eight years of the study, the US Department of Education recorded the closure of 7,508 educational locations across all types of educational institutions. This study examined the closure trends that existed for public colleges and universities across the period and looked for institutional characteristics associated with a heightened risk of closing off-site locations. The results of the study indicate that most of the public closures came from a small number of institutions, with 62% of the closed off-site locations coming from 18 of the 365 institutions in the study. After examining the overall trend, data was analyzed from 365 institutions across ten self-reported variables. These research findings indicate two primary variables that significantly affected the closure of off-site locations and suggest the struggle between the access mission of public universities and prestige-maximizing behavior can drive institutional decision making. The study concludes with recommendations for future research.

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CHAPTER 1

INTRODUCTION

Introduction

The reasons for developing and opening an off-site location for a school or campus are myriad and often become the justification for the expense of the location's installation. For private and for-profit institutions opening an additional center, a return on investment covers the necessary reasoning. When a public institution makes a similar investment, the institution must provide reasoning beyond this. Public colleges and universities design off-site locations for community outreach (adult education centers), specific populations (prison education programs), and a host of other reasons that justify spending taxpayer money.

This distinction for public colleges and universities makes closing an off-site location more difficult. When and if the off-site location begins draining resources, institutions cannot limit the explanation to a negative return on investment as a for-profit college might. Public higher education holds responsibility for "both lofty social missions and… crass, money-making activities" (Weisbrod, et al., 2008b, pg. 2). While the mission of any business firm in a capitalistic system is to be as profitable as possible for shareholders, public colleges and universities understand their mission to be threefold: teaching, research, and public service (although not always in that order). Institutions often cite this threefold mission as the reasons for developing an off-site location in the first place. For example, an off-site location opened to reach students that cannot easily reach any campus is related to the teaching portion of the mission, if not also connected to the ideal of service. Institutions might also have a research related reason for an off-site location, as when a landlocked institution in the Midwest chooses

to open a marine biology center on the coast. In one of the most common reasons for an off-site location, institutions seek to provide a service to a population that would have difficulty reaching the university on traditional university schedules. These service-related locations, like community-based adult education centers, help meet the service portion of a university's mission. Those reasons for developing the off-site location become hindrances to closing them.

I designed this project to examine the trends of off-site location closures during a specific time and determine whether there are any characteristics which indicate that an institution's off-site locations may be at risk of closure. The results of the project are applicable for both higher education professionals attempting to determine whether to open an off-site location and policy makers interested in efficiently allocating public funds for the benefit of constituents. The research provided insight into which characteristics institutions may need to explore more carefully before deciding to open a new off-site location.

Background of the Problem

The impetus for this exploration came during the process of researching branch campuses, when I came across a list of closed institutions maintained by the United States Department of Education (ED). This list contains institutions which have an OPEID, an "identification number used by the U.S. Department of Education's Office of Postsecondary Education (OPE) to identify schools that have Program Participation Agreements" (U.S. Department of Education, 2023). I was initially surprised to learn that more than 19,000 locations belonging to U.S. institutions (19,547 as of 09/05/2023) have closed since the ED began tracking closures in 1984 (U.S. ED, 2021). As someone who has worked in the higher education industry for more than a decade, I was operating under the impression that closure

of a location or school was significantly less likely than this list seemed to indicate. The data from the ED, although informative, does not provide reasons for the closing of each location.

Being unwilling to take the general statements released by institutions when they close an off-site location at face-value, I decided to look deeper into publicly available data. Although there is no way to perfectly predict whether an off-site location will close, this list of closings provides an opportunity to shed light on characteristics shared by institutions choosing to close off-site locations. At a time when public higher education needs to make the best use of its resources, understanding factors that make an off-site location a good or bad investment will prove helpful to public institutions making that decision. While the full list could provide valuable information regarding the national picture for education at various points in the timeline, that work is far beyond the scope of a dissertation. I have focused on the locations closed by institutions between 2012 and 2019 to provide a more accurate picture of the risk of closure associated with current off-site locations at public, four-year institutions.

Statement of the Problem

I have limited the scope of the project to public, baccalaureate-granting institutions as determined by the Carnegie classifications in 2010. While we could learn from an examination of for-profit institutions, private institutions, or community colleges and technical schools, future researchers could conduct each of these analyses to learn about the risk associated with closing off-site locations or campuses related to these missions. Each of the above classifications would suffice as its own study, partially because the missions are different, but primarily because the funding models for these classifications are vastly different. The four-year public sector's heavy reliance on appropriations from the state provides at least one variable

(discussed below) that would obfuscate meaningful results if I combined these classifications in one study. I chose the Carnegie Classification from 2010 because it is the most recent list prior to the beginning of the study window.

I narrowed the period for this project from 1984-2021 to 2012-2019 for several reasons. First, cutting off the data in 2019 ensures submissions will be in the Integrated Postsecondary Education Data System (IPEDS) for the 2019-2020 academic year. Since IPEDS is the source of nine of the ten variables listed below, including recent years may disqualify institutions from the study unnecessarily if one year of the data is not available. Second, the eight-year period provides one of the most active sections of closures for the list with 7,508, or nearly 40%, of the locations closed through 2021 (U.S. ED, 2021). Third, one of the variables with a large potential impact, percentage of students enrolled in an online course, was not consistently reported to IPEDS until 2012. The benefit of a consistent source for this variable far outweighs the inclusion of years prior to 2012 in the study. In addition, the global COVID-19 pandemic could have influenced the closing of off-site locations after the spring of 2020. Cutting off the study in 2019 prevented the introduction of a variable that should be considered separately because of the magnitude of the event.

In the eight-year period between 2012 and 2019, the U.S. ED recorded the closure of 7,508 educational locations (U.S. ED, 2021). While many of these closures were the result of closing the physical locations of private, for-profit educational institutions (the University of Phoenix shuttered 477 locations in the study window), a surprising number were from public, non-profit, baccalaureate-granting institutions closing off-site locations. Given the costs involved in researching a location, building or leasing physical space, and staffing courses at an

off-site location, institutions should avoid the closure of one if possible.

Purpose of Study

The purpose of this study was to examine similarities between the four-year, public colleges and universities that closed off-site locations between 2012 and 2019 and to evaluate whether characteristics in certain ranges justify further consideration before opening an off-site location. I performed both a conditional logit fixed effects panel regression and an ordinary least squares fixed effects panel regression covering public, baccalaureate-granting institutions that closed off-site locations during the specified period. I then framed the results of these analyses within Resource Dependence Theory (RDT), which encourages institutions to maximize revenue by diversifying operations and revenue sources to avoid being subject to the failure or reduction of any one revenue source. In this context, the framework helped clarify the discussion and define the variables for the function as demonstrated below.

When examining four-year, public institutions through the lens of RDT, I considered four major funding relationships: the relationship between tuition revenue, state revenue, local revenue, and private revenue and opening or closing an off-site location. An institution could be inclined to open an off-site location if state revenue increases, especially if that off-site location is related to the mission of the institution. Likewise, a decrease in state revenue might lead to the closure of off-site locations to preserve resources and provide institutions the added benefit of pointing to the state divestiture of higher education as a reason for the closing. An institution may also be inclined to open an off-site location if they believe doing so will attract a maximum number of students and increase tuition revenue. In this instance, an institution might want to close an off-site location because it is not bringing in enough revenue to cover

the costs. Both local and private revenue should provide the same reasoning for opening and closing locations as the discussion of combined revenue above. These explanations, although not the only possible reasons for opening or closing an off-site location, are examples of ways RDT would affect closure.

Research Questions

I designed the research questions for this study to determine whether and how each variable affects the likelihood of off-site location closure. The first research question is descriptive, identifies trends in off-site location closures, and sets the stage for the necessity and value of the remainder of the project:

1. What trends exist in the closure of off-site locations among public colleges and universities from 2012-2019?

While the general trends for location closure are concerning, this study sought to narrow these results to public, four-year higher education institutions. Certain events create risk through their existence. A person who has never been married cannot be at risk of getting divorced, nor can someone who has never taken a college course fail a college course. Similarly, the greatest indicator for being at risk of closing an off-site location is opening an off-site location. This characteristic further limited this study to public, baccalaureate-granting institutions that had at least one off-site location across the study window. The estimation was that a sizable portion of these locations closed, but the study determined that many more off-site locations remained open. Answers to this question provided valuable information about desirable characteristics to look for in an off-site location.

The second research question focused more on the independent variables, specifically

those that may be associated with a higher likelihood of off-site location closure, as stated below:

2. Which institutional characteristics are associated with a heightened risk of closing an off-site location?

Specifically, the study focused on ten institutional characteristics over the given period to determine whether similarities existed in institutions which decided to close at least one off-site location. I have defined the institutional characteristics under examination below, and included an indication of where I found the data for each variable.

Significance of the Study

Although there is some research around the rapid opening and closure of international branch campuses, only 376 of the closures since 1984 have been located outside the U.S. (Altbach, 2010, 2011; Becker, 2010; Escriva-Beltran et al., 2019; Redden, 2015; Wilkins, 2020). Much of the research around off-site location closure consists of case studies surrounding specific programs (Kelling et al., 2013; Miller, 2014; Wallace et al., 2016) or discussions of why an institution might want to open one (Heck, 1991; Krueger, 2011), with very little attention paid to domestic (especially relatively local) off-site locations. I intend this project as a beginning that opens the door for other research projects focusing on the characteristics that indicate an elevated risk of closure in off-site locations.

Definition of Terms

I have introduced terms here to ensure clarity of understanding in the project. The first definition I needed to include is that of off-site locations. Off-site locations are places connected to higher education institutions which have an OPEID and where instruction takes

place. There are various names for these as defined by federal and state governments, accrediting bodies, and individual institutions, but the characteristics remain similar across. I discuss the specific characteristics further in chapter 2.

I have also defined each of the variables as I use them in the study and provided the source of the data for the variable. The institutional characteristics used as variables in both models are as follows.

Independent Variables

- *Local revenue* - This variable represents the total revenue received by the institution from local sources and is determined directly by the revenue from local sources per FTE (GASB) as reported in IPEDS.

- *Log of the number of open off-site locations* - This variable represents the number of off-site locations an institution has open. Since having a greater number of off-site locations seems likely to put an institution in danger of closing at least one, I thought this would be relevant. In addition, since the number of locations could vary widely, I made the decision to log this variable to prevent outsized effects on the mean and results. I retrieved this number from the present accreditation pages of the institutions, which lists the off-site locations the university had open at the most recent accreditation. I then adjusted these numbers by year to account for locations on the list of closed schools.

- *Percentage of students taking no online courses* - From 2012 on, IPEDS reports the percentage of students enrolled in at least some online education, the percentage of students enrolled exclusively in online education, and the percentage of students enrolled in no online courses. Since a decrease in the percentage of students taking no online courses provides the

same information as an increase in either/both other categories, I have decided to use only that variable out of the three. Since a decrease in the percentage of students taking no online courses provides institutions with both reason (students can participate in the same activity online at a lower cost to the institution) and opportunity (the institution does not appear to be abandoning its mission) to close an off-site location, I thought it prudent to include this variable.

- *Private revenue* - This variable represents the total revenue received by the institution from private sources and is determined directly by the revenue from private sources per FTE (GASB) as reported in IPEDS.

- *State revenue* - This variable represents the total revenue received by the institution from the state and is determined directly by the revenue from state appropriations per FTE (GASB) as reported in IPEDS.

- *Tuition revenue* - This variable represents the total revenue received by the institution from tuition and is determined directly by the tuition per Full Time Equivalent (FTE) based on the Governmental Accounting Standards Board (GASB) as reported in IPEDS.

I chose the following four variables because of their relationship to the framework through the work of Bowman and Bastedo (2009) on organizational reputation. As Kim (2018) puts it in discussing the relationship between resources and reputation, there are "implications for understanding the role of college rankings that reinforce the resource-based view of institutional quality and institutional responses" (p. 54). These variables are measures of reputation and, as such, will provide valuable insight into the potential need for revenue diversification within the RDT framework.

- *Log of enrollment* – I based this variable on the number of students enrolled at an institution, as an institution that nears capacity may open additional off-site locations. That said, it is also possible that an institution could close an off-site location based on having additional seats to fill at the main campus. I took the log of this variable to control for outsized effects from much larger student populations.

- *Percentage of applicants admitted* – I included this variable as a measure of selectivity and recorded the results directly from IPEDS submissions of the same name.

- *Percentage of White (non-Hispanic) students* – I chose to include this variable as a stand in for all percentages of race for two reasons. First, the variable exists in every school in the study. Second, much in the same way that percentage of students taking no online courses simplifies the need of combining two other variables, I use this percentage to stand in for the non-zero complement that would be a combination of the remaining historically underrepresented races. A decrease in this variable represents a direct increase in an institution's percentage of historically underrepresented students. I recorded this variable from IPEDS.

- *Student to faculty ratio* – I included this variable to look at whether a shrinking student to faculty ratio might factor into an institution's decision to close an off-site location and consolidate the costly function of instruction in fewer locations. I recorded this variable directly from IPEDS.

- *Year* – This variable allows for a determination of chronological variance. I took the measure of each variable each year to form the panel data.

Dependent Variable

- *Closure* – I determined this variable by examining the closed school list for whether an institution in the study closed any locations each year. This dummy variable represented whether an institution had closed an institution (1) or not (0).

Limitations and Delimitations

One of the dangers of working with secondary data is that I have no control over misreported data. While acknowledging this limitation, I made every attempt to verify any data that seemed obviously out of character for the set (e.g., state funding of millions of dollars per FTE) and exclude the institutions associated with that data. In addition, my decisions to limit the period and the group of institutions examined are delimitations that constrain the applicability of the study. These same delimitations fortunately increase the reliability of the study in the process of making it less generalizable. The data thus excluded will provide a valuable trove of information for examining this same event at other institutions across various times but is beyond the scope of this study.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

Off-site locations fall into different categories relative to the main campus of a college or university. One of the difficulties in this research is that off-site locations go by various names and descriptions if the research discusses them at all. As mentioned previously, while the names shift depending on area, accreditor, and state, the characteristics of off-site locations remain remarkably similar to those in the federal government's definition. The U.S. government provides definitions of both "additional locations" and "branch campuses" in §600.2 of the Higher Education Act (1965). This regulation defines an additional location as "a campus that is geographically apart and at which the institution offers at least 50 percent of a program" and a branch campus as a special additional location which is also "permanent in nature...offers courses...leading to a...credential...has its own faculty and administrative or supervisory organization; and...budgetary and hiring authority" (Higher Education Act, 1965). All of the regional accrediting bodies follow the definition, name, and requirements for branch campuses (specialized off-site locations), but they vary in names and intent for additional locations. Whatever the moniker, there are two main characteristics of off-site locations amongst the regional accreditors: the location is geographically apart from the main campus and students are being taught at the location. The closed school list matches these requirements for locations to be included as it defines each off-site location as a separate school. As discussed previously, the presence of an OPEID number for each location provides assurance that instruction could be taking place at these locations and leads us to understand

that instruction was taking place at these locations.

The two most common designations in the available research for off-site locations are branch campus or satellite campus, but this list can also include high schools and public libraries where GED training courses are offered by an institution, any high school where a dual-credit course is offered (even if the teacher of the course is employed by the high school), programs designed to specifically teach inmates or other location-bound wards of the state, etc. While this list is not exhaustive, it is representative of the difficulties associated with both defining off-site locations and including them in a single study.

Need for the Study

Despite significant advances in technology allowing students to participate in online courses from a distance and predictions that online learning could eventually drive traditional education out of the market, the last fifteen years have shown a resurgence in the creation of both branch campuses and off-campus learning sites (Fonseca & Bird, 2007). In the context of Resource Dependence Theory (RDT), this is unsurprising. Even if online learning created places for former students and attracted new ones, an institution should still diversify to recruit students who may not be interested in an online experience. As Fonseca and Bird (2007) point out, this resurgence seems out of place, but the fact that many students are "fundamentally place-bound…by financial constraints, family responsibilities, personal characteristics, lifestyle choices, or combinations of these factors" affected this resurgence (p. 9).

There is more reason to examine off-site locations than how they interact with the online experience. Researchers of off-site locations have "no extant information currently available concerning the number of branch or satellite campuses in the United States" or of

United States-based institutions (Hoyt & Howell, 2012, p. 114). This partially comes from the lack of an effective governing organization responsible for all facets of off-site locations and partially comes from the lack of standardization between researchers of higher education. As Altbach (2011) points out, there is "No generally accepted definition of a branch campus" (p. 1). The same holds true for many of the other categories of off-site locations, some of which are mentioned as specifically excluded when discussing the definition of branch campus, which "Excludes joint-degree programs, twinning arrangements, overseas campuses serving students from the home university, degree franchising, and other international ventures" (Altbach, 2011, p. 1). Although Altbach (2011) specifically excluded them as he tried to define international branch campuses, the U.S. Department of Education included these programs in the closed school list if the location supported students attempting to receive degrees or certificates from an institution before the site closed.

Branch Campuses as Off-Site Locations

Even though there has been a resurgence in the number of developed off-site locations because of student preference, they "remain largely ignored in the academic literature" (Fonseca & Bird, 2007, p. 8). Given that, there are things we do know about branch campuses. Off-site locations can take on multiple forms, but a true branch campus is one that maintains faculty in residence and has a student body that is independent of the main campus (Fonseca & Bird, 2007; Hoyt & Howell, 2012). Hoyt and Howell (2012) summarized the available literature on the topic by saying that authors have addressed "what it takes to establish new branch campuses…, how branch campuses may increase student access…, information on the characteristics of faculty and staff…, the adequacy of student services…, academic success…and

retention, and…branch campus decision-making processes" (p. 110). They then examined the motivations of students who chose branch campuses.

In addition to the above, Olswang and de Give (1999) discussed the important political processes and risks involved in creating a branch campus system throughout the state of Washington by pointing out that "Inducement strategies of coalition building by community groups through the creation of tradeoffs to higher education special interests dominated each stage of branch campus policy making" (para. 67). They outline the political risks across the spectrum of interactions between campuses, four-year and two-year institutions, communities with proposed branches, communities that wanted branches proposed, connections made between each set of locations and the closest set of institutions, and general special interest groups. From their analysis, no institution makes a choice when building an off-site location without angering some group of constituents.

One of the universal truths about off-site locations, or any higher education practice, is that "the rich are getting richer, the big are getting bigger, and geography matters" (Zemsky et al., 2020, p. 37). Institutions that can afford to produce off-site locations effectively find that they are able to benefit from these openings, run them until they are no longer effective, then close them at the most appropriate time. Institutions that attempt to imitate the success of these institutions often find that they have bitten off more than they can chew. Because of the paucity of existing literature on off-site locations, "The most important finding is the need for much more research concerning branch campuses" (Hoyt & Howell, 2012, p. 114). This study provides some guidance for institutions forced to examine each foray into innovative practice to ensure that innovations meet the mission of the institution without reducing funding

required to maintain current programs.

Public vs Private and Why Study Public

Speaking of missions, this study focuses on public four-year institutions and the characteristics potentially contributing to the closing of off-site locations during the study window. I have chosen to study the closing of off-site locations at public, four-year institutions for multiple reasons. First, the different Carnegie classifications of institutions that make up "America's higher education landscape [are] a unique mix of publicly funded, nonprofit and for-profit institutions. Understanding their different revenue and expenditure patterns is crucial to understanding higher education policy" (Blom, 2021, p. 1). The differences in revenue and expenditures present unique problems in each category when talking about the reasons for closing off-site locations. Marsicana et al. (2020) discussed the challenges for each sector. Two-year public colleges have been declining in enrollment since 2010 and are heavily dependent on enrollment for their funding (Marsicana et al., 2020, p. 9). Two- and four-year private institutions are deeply discounting the tuition on which they are heavily dependent (Marsicana et al., 2020, pp. 9-10). Public institutions are increasingly dealing with shrinking state appropriations (Marsicana et al., 2020, p. 10). These resource dependencies differentiate the Carnegie classifications, which would make it difficult to compare variables and determine strategies that affected off-site locations in all classifications.

Second, the internally similar missions of classifications vary between categories. Each sector pursues a specific mission. For-profit colleges and universities focus on money as the mission. They cannot see a conflict between money and mission because there is no difference for them. For off-site locations, this means that a for-profit school can determine closure in

terms of financial benefit. If an off-site location is losing money for the school (or even not making as much money as they could through an alternate use of the resources), the school will close it. There is also a lower likelihood that a for-profit would open a location they might subsequently close. Advances in technology that make higher education easier to mass produce and distribute also have the greatest effect on for-profit operations.

"Although for-profit schools are expected to undertake only profitable activities, public and nonprofit schools would also undertake some unprofitable activities – specifically those that advance their mission significantly" (Weisbrod et al., 2008, p. 59). An off-site location intended to advance an institution's mission cannot close strictly because it is not profitable. Public and non-profit institutions create these off-site locations for reasons of access or equity, as discussed below, and a lack of profit in and of itself is an insufficient reason to remove equitable access.

Third, "two-thirds of all baccalaureate (or equivalent) enrollments, and one-third of all degree-seeking undergraduate enrollments" fall into the four-year public sector of higher education (Zemsky & Shaman, 2017, p. 14). As this group represents the highest portion of student enrollment, I can then generalize these results to a larger number of students served by off-site locations. Given that "the budgets of public and private institutions alike are substantially enrollment driven, thus providing incentives to raise enrollment, rather than lower it," there is an incentive to entice additional students to participate in higher education through off-site locations (Volkwein & Sweitzer, 2006, p. 142). However, four-year public institutions cannot raise enrollment without tying that increase to their mission in a meaningful way. Two-year public institutions, as open-access institutions, can make any effort to raise enrollment

align with their mission of higher education for all. Because of this difference in institutional missions, generalizing multi-classification reasons for opening and closing off-site locations is difficult.

Fourth, the relationship between institutions and the federal government affects how each category interacts with off-site locations. “As a major financier of colleges, the federal government can have a tremendous impact on how schools manage their operations” (Sokol & Cao, 2019, p. 14). The federal government provides support through individual student loans or grants and research grants at the institutional level. In for-profit colleges, individual student loans or grants often cover up to 90% of the funding for the school. So much so, that the federal government limits the amount of an institution’s operating expenses that can come from these sources to 90%. “The evidence… suggests that the 90/10 rule does not arbitrarily apply [to] for-profit institutions – were it applied universally its effects would still apply almost exclusively to for-profit schools, because these institutions are more reliant on federal aid” (Lee & Looney, 2019, p. 16). The federal government has limited this support because “Institutions with high 90/10 ratios tend to have higher cohort default rates… Similarly, repayment rates at institutions with 90/10 ratios are low” (Lee & Looney, 2019, pp. 14-15). Students at for-profit colleges that maintain this ratio of funding have found it difficult to meet these measures of student success after graduation. Consequently, the federal government views them as risky, which can lead to a forced closure of one or all locations. While “A case can certainly be made that government entities have no business mandating potentially harmful closures by private colleges,” it is more difficult to make that argument when an institution surpasses that funding limit (Seltzer, 2018, p. 6).

The relationship between public colleges and the federal government is affected by the relationship public colleges have with their state. “Public college systems, though not without their own fiscal challenges, are ultimately backed by the government’s power to tax” (Eide, 2018, para. 2). Taxing relationships, both state and federal, provide public colleges with their funding. Because of this, one of the independent variables for determining what leads public four-year institutions to close off-site locations is state revenue. That neither private nor for-profit institutions share this revenue stream makes this study difficult across classifications. That said, some findings indicate a difficulty in relating government funding to a displacement of mission-based activities or other institutional goals, as “Goal displacement associated with government funding… appears less serious than that of private contributions” (Froelich, 1999, p. 255). A shift in government funding often means finding ways to make up the difference, usually through tuition or increased enrollment.

Lastly, the way public colleges close any portion of their institution is different from the way that private or for-profit colleges close. Instead of outright closure, “Public colleges tend to merge with other institutions… and these mergers do not have an adverse financial impact on the federal government” (Kelchen, 2020, p. 5). Mergers are beneficial to the institution and the government as they incorporate, or offer to incorporate, students affected by the closure of the off-site location or campus. Because of this focus on bringing students into a successful program through the merger, there is less to suggest that closing an off-site location has a harmful effect on students. That said, “Consolidation between individual colleges or entire systems is most successful when it’s part of a strategic plan and not a last-ditch effort to save an institution” (Busta, 2019, para. 24). These consolidations have the benefit of long-term

planning to maintain the benefit to the student and to society.

Public vs Private Good

That benefit, or the balance between the benefit to the student and the benefit to society, drives the remainder of this study's focus on four-year public higher education institutions. As Winston (1997) points out, institutions of higher education "are 'donative-commercial nonprofits'… Part of their income comes from sales revenues… and part of it comes from charitable contributions" (p. 34). Higher education benefits both the individual enrolled in a college or university and society. Education as a private good is easy to imagine, as the benefits in increased wages, access and introduction to passions, and connections to future careers are evident and well-documented (Merrill, 2010). As such, the responsibility for funding this good has steadily shifted towards the individual over the last three decades as "Political support of higher education has softened resulting in erosion of public funding" (Fusilier et al., 2011, p. 29). While "Some… worry that this new funding practice has already created a 'student debt crisis'… others worry about the civilizational aspects of higher education…[and] both concerns seem entirely justified" (Ford, 2017, p. 572).

What then, are the civic aspects, aspects pertaining to the public good, of higher education? McMahon (2009) lists the social benefits of a college education:

> Contributions beyond income by higher education to the operation of civic institutions essential to democracy, human rights, and political stability, as well as contributions to the operation of the criminal justice system, to crime reduction, to poverty reduction, to environmental sustainability, and to the creation and dissemination of new knowledge. (pp. 18-19)

Merrill (2010), on the other hand, defines the public good of a college education as an education that produces those whose careers benefit the public, provides a connection

between knowledge produced and societal needs, and makes better citizens.

These represent the "social benefits that are above and beyond the private benefits to the students and his or her family" (McMahon, 2009, p. 11). It is further McMahon's (2009) argument that the benefits to society should temper the extent of privatization within the higher education industry. Higher education institutions produce and sell education as a "good" to an individual student and they charge tuition for it, but it is not exclusively a private good (Winston, 1997). The state and federal government subsidize this good to an extent as a result. Massy (2004) lists the reasons to subsidize public higher education as: 1) it creates an output (the educated citizen) important to society, 2) it is difficult to evaluate the quality of the output, and 3) the output costs so much that it would not be possible to recover costs. He is not alone in his opinion that there should be public subsidization of higher education. Pusser (2006) takes it a step farther and points out that "the preservation of a public sphere through higher education is an essential public good and arguably the one that makes the more traditionally defined public goods possible" (p. 12). While Pusser's (2006) argument that public institutions of higher education alone maintain the public sphere may not ring entirely true, public institutions of higher education create the public sphere we would like best. If true, this reasoning echoes Taylor's (2022) that "a democracy that does not feature higher education as a central social institution is in worse shape than a democracy that does" (p. 16).

If everyone believed that federal and state governments should subsidize higher education for the good of society, institutions would not be facing situations in which they are "confronted by the murkiness of resource decline [and] hauled in conflicting directions by the mutually inclusive forces of mission and money" (Namalefe, 2014, p. 7). Public institutions of

higher education have the same problem that most nonprofits do. In order "To meet their double bottom lines of social and financial returns, NPOs must carefully allocate spending" (Shon et al., 2019, p. 670). Spending time and money focusing on the mission costs the institution time and money that it could spend on activities that help meet the bottom line. In truth, institutions seek activities that help meet both. As state appropriations go down, universities may seek to enroll a higher number of international students (Mwangi, 2013). A higher number of international students increases the amount of tuition coming into the university (helping with the bottom line) while increasing the diversity of perspectives on campus (a mission goal for public universities) without the appearance of raising tuition. This "conflict between the roles of church and car dealer is such that both sides appear to have been right" (Winston, 1999, p. 32). The truth of the matter is that the university needs both parts and needs them balanced well to produce products that are going to be beneficial to society. The public good requires walking this tightrope of funding opportunities while balancing an ever-increasing accountability for the produced good.

As Pusser (2006) put it, "The public good… is at the center of contemporary debates over university organization and governance, resource allocation, access, autonomy, and legitimacy" (p. 11). University organization and governance change significantly if there is no public good or no funding for the public good. A lack of funding from government entities could reduce the amount of oversight from them to a minimal amount, which would affect access and, eventually, legitimacy. Admittedly, it is difficult to find someone that would argue that no public good comes from public institutions of higher education. Instead, the argument focuses more on who should pay for the public good, with government bodies treating institutions as if

they are students requesting financial aid and offering the minimal subsistence while the university covers as much of the cost as possible. The alternatives presented around who should pay end up reflecting "an incomplete understanding of how universities behave as non-profit enterprises" (Massy, 2004, p. 35). The market ideologies of neoliberalism provide, if not outright hostility towards the idea of a public good, at least a moderate disdain for the value of this good to the public.

Market and Neoliberalism

In attempting to understand neoliberalism through a lens that gives politicians the benefit of the doubt, neoliberalism describes the state as wanting to "improve the quality of education at higher education institutions, spur innovative development, and ensure the resources are used more effectively" (Zinkovsky & Derkachev, 2018, p. 404). The politicians then turn to the model of industry, where they are more comfortable on average. If higher education is indeed an industry, then improving higher education falls into the simple categories of profit and loss. The university can become successful in the short term by merely cutting costs, increasing income, and providing a sufficient return on investment. While researchers insist that "The industry model for decision making does not necessarily preclude consideration of long-term outcomes. Only when it is incorrectly used does it put undue focus on the short-term," there is a great deal of evidence indicating that institutions of higher education, or at least the bodies that provide public funding for them, must use this model incorrectly (Fusilier, et al., 2011, p. 34). Tolbert's (1985) encouragement that "most of the perspectives that currently guide research are not truly competitive, such that support for one undermines another. Instead, they are more likely simply to be applicable under different

conditions" indicates that a complete focus on any one theory for research by dismissing others would be at best nonsensical and at worst dishonest (p. 12). While this admonishes researchers not to focus on any given theory, there is no admonition to policy makers to do the same. Policy becomes easier to enact and support with this focus on short-term results and quick improvements, even though that is antithetical to the long-term success of institutions of higher education.

As Cornelius (2012) points out, "The U.S. government's managerial approach… is engendering market economics in higher education and intensifying competition among institutions" (p. 2). The competition forces schools to compete for students, for the funding that comes from tuition, and for research funding (a competition that is heavily and intentionally scaled towards institutions who already benefit the most from research funding). Instead of providing funding to ensure that our country is benefiting the most from an educated population, there is a "strong preference for low taxes and low spending… in the past several decades of higher education policy. Perhaps the defining characteristic of twenty-first century state higher education policy has been governments' steady divestment from the sector" (Taylor, 2022, p. 10). Thus, the "'privatization' of public education (also known as the 'corporatization' of higher education) is already underway both in how education is funded and how universities understand their function" (Ford, 2017, p. 571). Institutions of higher education must seek out as much funding from alternate sources as possible but have also shifted to their product being trained employees for corporations. From the university perspective, "Budgetary survival has become the only policy that matters, along with a persistent mantra that taxes need to be cut; tuition prices at state-owned colleges and

universities must become cheaper; and faculty, at best, are a necessary inconvenience" (Zemsky & Shaman, 2017, p. 83). Universities operating under this constant cloud find themselves having to prove their value to entities which have no intention of seeing value in their work unless it directly benefits them.

While higher education's "seeming inability to clearly or convincingly bridge the cost-value nexus, in particular, has contributed much to the subsequent action directed at" it, policy makers who want to pay as little as possible should not be the only ones defining and quantifying the value of a university education (McGee, 2015, p. 99). Despite "the neo-liberal mantra of deregulation, privatisation and market freedom. Universities have been extensively restructured and re-regulated…which is somewhat at odds with the neo-liberal emphasis on deregulation" (Davies et al., 2006, p. 305). Policies designed to ensure that institutions of higher education are doing their job correctly are numerous and usually have little to do with the actual success of the institutions, short of requiring constant comparisons to other institutions as mentioned before. Through this, neoliberalism becomes a powerful and hegemonic frame operationalizing internationalization, normalizing inequities to allow nations to compete in the global knowledge economy (Bamberger et al., 2019). While governments use neoliberalism and the market language associated with it to demonstrate superiority in the knowledge race, the U.S. seems to have chosen their market success as the proof of their superiority, further devaluing education as anything other than a way to improve the existing free market. It is clear that "the public policy to restructure the higher education system affects indicators that reflect university performance" (Zinkovsky & Derkachev, 2018, p. 415). In other words, when universities must focus on producing certain metrics to receive funding, it is no mystery that the

results they produce align to the required metrics.

However, despite the neoliberal focus on the privatization/corporatization of higher education, the lack of consideration for costs expansion of similar industries is surprising. As Archibald and Feldman (2011) indicate:

> The striking similarity of the time path of costs in dental care and other service industries and the time path of costs in higher education provides a good example. One *can* construct separate explanations of rising costs… But a more parsimonious explanation based on a simple set of broader economic features that have rippled across the entire economic landscape of the past century strikes us as a better explanation. (p. 113)

Occam's razor suggests that we accept the simplest explanation of a phenomenon, but policy makers prefer explanations which allow them to maintain the low tax and low spending models that get them re-elected. As a result, "Nearly all colleges and universities today must address three important disruptive forces that had fully emerged by 2010 and have intensified since then: demographic disruption, economic disruption, and values disruption" (McGee, 2015, p. 21). Quickly, demographic disruption varies by location based on populations' changes, but refers to the fact that the number of traditional college age students is steadily declining. I have discussed the economic disruption above as the consistent removal of funding by public dollars. The values disruption of the purpose of higher education being a private benefit to the student (who should be paying for said benefit) connects to this removal. It is strange then, that "When higher education served an elite, universities were small and the budget for postsecondary education was relatively modest. A consensus existed concerning the role of the universities in society, and considerable autonomy was granted to them" (Altbach, 2019, p. 45). Merrill (2010) suggests that higher education can and should shift their focus "In an era of online 'echo-chambers,' where people seek out only those whose opinions mirror their own, expanding

imaginations, encountering difference, and conceiving the new will be what gives universities legitimacy" (p. 60). Whether this will help universities build an additional bridge to the cost/benefit analysis of higher education remains to be seen, but we achieve clarity regarding the funding of higher education institutions.

First, as Winston (1997) pointed out with an abnormal prescience, "We can ill-afford to be wrong about the economic structure of higher education, confusing it with a for-profit industry" (p. 37). Public institutions of higher education are not for-profit corporations and creating a market which treats them as such does little to improve their function. It is true that "What the nation needs now is a cohort of federal and state policy makers who understand the markets their policies have largely created" (Zemsky & Shaman, 2017, p. 5). This ideal and potentially unlikely state notwithstanding, one of the things that is consistently true is that "In the long run, higher education will cost the same amount to produce if demand is large or if demand is small" (Archibald & Feldman, 2011, p. 32). Since policies tie funding for public institutions (through formula funding or tuition) to the demand for a particular institution, they can increase this demand by providing multiple locations at which students can engage with the institution. The neoliberal demand for universities to expand their market presence drives a constant search to maximize both tuition and public funding through maximizing enrollment, which, in turn, drives the choice to limit this study to four-year public institutions. The reasoning for both opening and closing these off-site locations are more closely related within a single Carnegie classification. In addition, both the state and national funding models of four-year publics provide important perspectives that will inform the results of the study.

Public Funding as Financial Condition

Public funding plays such a key role in choosing the population for this study from an RDT perspective because the amount of public funding received by a four-year public institution has ramifications across that institution's decisions. Bennett (2018) "analyzed the relationship between changes in state appropriations, allocation ratios of functional expenses, and an institution's financial condition" and found that institutions tended to shift their funding allocations depending on state appropriations, rather than solely attempt to increase their funding from other sources (abstract). Universities would only be likely to increase funding from other sources when "The era of state public higher education systems relying significantly on resources and oversight from their applicable states is transitioning" (Bennett & Law, 2020, p. 5). If public funding continues to decrease until state appropriations cease providing the majority of funding for public institutions of higher education, or even cease to be a source of funding entirely, universities will have to revert to the aforementioned focus on the bottom line, abandoning at least some, if not the majority, of their mission.

Interestingly here, Lachman (2022) points to a more generous reasoning for policy makers to focus on the amount of funding institutions receive. As the state reduces institutional funding, enrollment is one of the main metrics that increases. Increased enrollment increases both tuition dollars and the overall amount of state appropriations, meaning that reduced funding per Full Time Equivalent (FTE) forces the institution to increase enrollment as a method of balancing the budget. If a policy maker wants to encourage increased enrollment for the population of the state, adjusting appropriations becomes the easiest way to drive this, as "The bulk of factors determining the enrollment metrics that were studied are… difficult to influence

by policy makers" (Lachman, 2022, p. 140). While it seems naïve to hope that policy makers are primarily interested in the inclusion of as many students as possible in the public higher education system, it is at least an argument to consider.

Higher Education Institution Goals

Through the lens of increased focus on enrollment, the fiscal bottom line, or both, we come to the topic of institutional goals and how they factor into a desire to open or close off-site locations. The simplest way of describing institutional goals is that "virtually all IHEs seek to produce some teaching-research output mix" (Cohn et al., 1989, p. 284). While institutions may add a service component to round out the traditional triad, much university service tends to be centered on one or the other of these goals, making it redundant. Service reaching beyond the walls of the university "is generally not considered a prestige-maximizing activity like research nor a core institutional function like teaching" (Jaeger & Thornton, 2005, p. 54). Jaeger and Thornton (2005) tease out a phrase that drives institutional goals: prestige-maximizing. An increased focus on prestige for the institution leads to an increase in enrollment and, by default, an increase in funding metrics. One of these prestige maximizers can be having an international branch campus (IBC), although it is difficult to separate the prestige goal from the "internationalization" previously discussed. Even though "institutions that possess an IBC appear to believe that having physical international operations enhances the institution's status and reputation," this belief connects back to the corporatization of IHEs and mirrors the belief that corporations with physical international operations are more valuable than corporations without (Wilkins, 2020, p. 12).

While an IBC is an off-site location, I have excluded them from this study. Although the

two perceived drivers for creating IBCs (increased prestige and increased funding) are relevant to the study, IBC operations do not match the reality of creating, funding, and eventually closing local off-site locations. The market for IBCs was alluring enough that Redden (2015) compared "the whole branch campus story with the California gold rush… People from all over the world went to California to dig for gold. Some got rich and many returned home with a little less than when they left" (para. 11). Given the comparatively brief time between opening and closing these off-site locations, they are not typical off-site locations. Harding and Lemmey (2011) express the common concerns of establishing an international branch campus as physical safety; protection of the university's name and identity; compliance with laws, regulations, and customs of foreign jurisdictions; management of operational logistics; and adherence to high standards of accountability. Despite this, "the international branch-campus market has become more competitive… and there have also been several branch-campus closures" (Becker, 2010, p. 4). Delving into why there have been multiple closures, Altbach (2010) pointed out that "Establishing a real branch campus that provides an education the same as at the home institution is not an initially easy task, and it is much more difficult as time goes on" (p. 3). While a multitude of difficulties exist in establishing and maintaining IBCs, considerable literature also exists on the unique problems that have led to their closure. In fact, "based on their share of student enrollments, IBCs receive more attention from researchers than perhaps they deserve" (Wilkins, 2020, p. 3). The gold-rush nature of IBCs, the increased competitiveness in their market, the difficulty of establishing a true IBC, the limited number of student enrollments tied to IBCs, and even the fact that "international branch campuses have economic effects on the university's home and host countries" all point to a multitude of

reasons that IBCs were considered separate light from more traditional off-site locations for the purposes of this study (Escriva-Beltran et al., 2019, p. 513).

This is not to say that IBC literature is without value to this study. Specifically, it brought out both the value of individual case studies as a method of examining why to open (or close) specific off-site locations and the value in understanding the motivations related to opening or closing off-site locations in general. As an example of both, Knapp et al. (2009) provide a "case study [illustrating] how a variety of seemingly disparate objectives can be blended into a successful and unified plan" (p. 6). They examined building a branch campus for a pharmacy school to increase access for students in a specific area, encourage more students in a high need area to stay in jobs in that area, and increase the enrollment of the struggling pharmacy school. The combination of factors and their willingness to consider the possible benefits ahead of time led to the successful creation of an off-site location.

In addition, IBC literature pointed out shifting demands for institutions and how those might affect the creation or shuttering of an off-site location. Shifting priorities (often due to shifting funding) may provide a reasoning for adjusting off-site locations. As an example, "The unique accessibility of [land-grant institutions] and their resources for the broader public good may be in danger unless higher education leaders are willing to reconsider the mission, obligations, and resource allocation patterns of land-grant institutions" (Jaeger & Thornton, 2005, p. 65). The loss of funding supporting the missions surrounding land-grant institutions could lead to a lower focus on access or to shifting the idea of access into an online realm. Costs associated with increasing prestige may also affect an institution's willingness to fund off-site locations. McClure and Titus (2018) demonstrated that universities attempting to move into

research university status (an arguable increase in prestige on the Carnegie classification) increased their spending on administration, which would leave less money to focus on access through off-site locations. However, their results noted that once an institution reached the increased status, there were no longer increased expenditures associated with the climb.

Rankings

One might ask why it would be necessary to spend resources on increasing an institution's reputation. An overview of university rankings and how they affect a university is not only helpful, but an important portion of this study. Bowman and Bastedo (2009) studied institutional reputation as demonstrated through rankings and found that "Being labeled as a top-tier institution carries substantial weight" (p. 432). The influence of college rankings has become more powerful than one would think (Kim, 2018). Rankings encourage institutions to alter their resource allocation behavior (Kim, 2018), perform a technical, social, and political function (Rindova et al., 2018), provide a proxy for quality of the school (Griffith & Rask, 2007), and "are an inevitable result of mass higher education" (Altbach, 2019, p. 130). Fortunately, or unfortunately, Altbach (2019) also points out that "Rankings are increasingly used by universities, higher education systems, and government agencies to benchmark against other institutions and systems" (p. 131). Griffith and Rask (2007) express their concerns over the phenomenon because rankings hold such a high place in student decision-making even though they are not a "widely accepted measure of quality" when it comes to IHEs (p. 254). They are instead the easiest method provided for students to do their "research" on which school to attend.

This is nowhere more evident than through Bowman and Bastedo's (2009) study which

found that “Among all institutions, appearing on the front page provides a substantial boost in admissions indicators” (p. 423). Beyond that, once an institution is in the top tier, “moving up in the rankings provides noteworthy benefits for institutions in the top 25 and among national universities” (Bowman & Bastedo, 2009, p. 432). The research indicates that an increase in the rankings was beneficial to enrollment and, consequently, to the institution’s finances. Along that same line, Griffith and Rask (2007) discovered that “full-pay applicants are more likely to attend a school that is higher ranked by even a few places… [and] aided applicants… still systematically prefer higher-ranked schools” (p. 254). The preference of full-pay applicants to higher ranked schools can make a marked difference in an institution’s budget, especially in the category of tuition income.

Despite their popularity with students, multiple studies indicate real problems with ranking systems. Dearden et al. (2019) studied the prestige effect of university rankings and found three key takeaways: 1) Prestige effect offers incentive for publications to use ranking methodology that does not match student preference, 2) Ranking begins best for student, but moves towards randomness, and 3) Publication methodology adds more randomness than is optimal. The prestige effect discussed here can be best summed up by a problematic ranking system that builds on previous rankings to determine an institution’s reputation: “For national universities and liberal arts colleges, future peer assessments of reputation are substantially influenced by (a) overall rankings, (b) tier level, and (c) changes in tier level” (Bastedo & Bowman, p. 177). Since the rankings depend on how peer institutions perceive them to be ranked and peer institution rankings depend on previous rankings, there is a confirmation loop

that is not in the best interest of the student using these rankings to decide which university to attend.

There are other potentially harmful side effects of the ranking system. To build legitimacy as an institution, unranked institutions employee strategies that are either moral or pragmatic in nature, as opposed to the cognitive strategies to build legitimacy that dominate highly ranked institutions (Stensaker, et al, 2019). While not initially evident as a problem, the fact that rankings influence how institutions attempt to build legitimacy is unfortunate. The nature of how rankings affect the local environment of an institution is even more unfortunate. There is a division within the rankings of what Lee et al. (2020) refer to as the focus on the third mission, which they dissect by rank on the lists. Those of high rank focus on a global environment third mission. Those on the list with a medium or low rank focus on a national or regional environment Third mission. Unranked institutions focus on local environment third missions. A desire for increased rankings may prevent institutions from focusing on their local environment. Their study "suggests that rankings schemes place greater weight on university's commitments to local issues and communities as status or quality indicators" to improve institution's focus on the area of which they are a part (Lee et al., 2020, p. 251). From an RDT perspective, the search for an increase in public opinion helps determine a large portion of how institutions spend their resources because "Nonprofit organizations are often forced to balance organizational resource needs with the needs of employees and stakeholders," which leads us into the theoretical framework of this study (Shon et al., 2019, p. 662).

Resource Dependence Theory

Resource dependence theory (RDT) attempts to explain the behavior of organizations by

interpreting interactions with the external environment, analyzing how those interactions affect resources necessary for the organization, and connecting the resource interactions with decisions made by the organization. The beginnings of RDT trace back to the "theoretical Cambrian explosion" of mid 1970's organizational theory that continues to influence multiple fields of study (Davis & Cobb, 2010, p. 3). Resource dependence theory grew out of J.D. Thompson's *Organization in Action* into an independent paradigm potentially representing the most comprehensive "approach to organizations, combining an account of power within organizations with a theory of how organizations seek to manage their environments" (Davis & Cobb, 2010, p. 3). Aldrich & Pfeffer (1976) described the development of the model as proceeding:

> from the indisputable proposition that organizations are not able to internally generate either all of the resources or functions required to maintain themselves, and therefore… must enter into transactions and relations with elements in the environment that can supply the required resources and services. (p. 83)

On the surface of this explanation, any argument would tend to evolve around "how" an organization accomplishes this rather than "whether" an organization needs to do so.

There are "Three core ideas of the theory: (1) social context matters; (2) organizations have strategies to enhance their autonomy and pursue interests; and (3) power (not just rationality or efficiency) is important for understanding internal and external actions of organizations" (Davis & Cobb, 2010, p. 5). The social context of organizations depends on their interorganizational interactions with both resource providers and competitors. Aldrich and Pfeffer (1976) "consider the subject of interorganizational relationships to be a special case of the more general study of organizations and their environments" (p. 79). The study of interorganizational relationships holds relevance for nonprofit organizations for a couple of

reasons. First, there are fewer choices to make when a nonprofit is receiving enough funding, because “When resources are plentiful, so that everyone gets what they want … ambiguities and disagreements cause no problems” (Birnbaum & Edelson, 1989, p. 133). A nonprofit with ample funding can participate in all activities that any faction of the organization would like to sponsor. However, when funding is inadequate or shifts to a lower amount, “Choices have to be made not between good and bad things but rather between competing goods” (Birnbaum & Edelson, 1989, p. 134). A perfect (theoretical) understanding of RDT would examine any interorganizational reactions to determine why organizations make the choices they make and, imperfectly, what choices they might make before they make them. As Froelich (1999) points out, “Continual changes in the environment associated with major resource providers translates into specific threats and emerging opportunities for non-profit funding” (p. 248). Combined with the observation that “Dependence on particular sources for resources entails acceding to the demands of these sources,” this suggests that the funding shifts described above in higher education may lead (or have already led) to a difficult conundrum for higher education leaders (Namalefe, 2014, p. 6). State support has diminished and dependence on tuition has increased, but accountability to the state has not diminished proportionately and a demand for accountability to the student/customer has increased. One of the benefits of RDT is that we gain a clearer understanding of an organization accounting for multiple external demands.

RDT Roots

Davis and Cobb (2010) point out that “RDT is rightly regarded as a seminal contribution to organization theory” (p. 26). The seminal work stemming from *Organizations in Action* was

The External Control of Organizations: A Resource Dependence Perspective by Jeffrey Pfeffer and Gerald R. Salancik. There are multiple interpretations of the main ideas of RDT, the most detailed of which describes five separate tenets with multiple actions associated with each (Hillman et al., 2009). However, the agreed upon tenets begin with the idea that organizations experience external environmental influences preventing them from being entirely autonomous (Aldrich & Pfeffer, 1976; Davis & Cobb, 2010; Hillman et al., 2009; Pfeffer & Salancik, 1978; Powell & Rey, 2015). Because of these influences, organizations expend significant effort to manage these environmental constraints, limit interdependencies with the environment, and enhance their autonomy (Aldrich & Pfeffer, 1976; Davis & Cobb, 2010; Hillman et al., 2009; Pfeffer & Salancik, 1978; Powell & Rey, 2015). Organizations participate in these strategies through "five options Pfeffer and Salancik propose firms can enact to minimize environmental dependencies: (a) mergers/vertical integration, (b) joint ventures and other interorganizational relationships, (c) boards of directors, (d) political action, and (e) executive succession" (Hillman et al., 2009, p. 1404). Hillman et al. (2009) also point out that these strategies synthesize to maximize the amount of control an institution has over their environment. However, "Both power imbalance and mutual dependence are necessary constructs in producing a thorough theoretical account of power and dependence at the dyadic level" (Casciaro & Piskorski, 2005, p. 192). Organizations consistently interact with external partners who are either more or less powerful than they are, but on which they must depend.

Organizations deal with environmental constraints within three levels, the internal environment, the task environment, and the general environment. "Social influence, physical realities, information and cognitive capacity, and personal preferences" constrain behavior

across these portions of the environment by (Powell & Rey, 2015, p. 96). These environmental constraints affect organizations' inter-and intra- organizational power dynamics in predictable ways, providing insight into the decision-making process for both internal and external actions of the organization (Aldrich & Pfeffer, 1976; Davis & Cobb, 2010; Hillman et al., 2009; Pfeffer & Salancik, 1978; Powell & Rey, 2015). As an example of these principles, we can examine Nike's ads with Colin Kaepernick regarding believing in something even if it costs you everything. Nike's social influence made the ad something that both worked for social change, bringing the idea to the point of a meme applied to hundreds of examples espousing the same idea. Without Nike's social influence (both previously existing and what they borrowed from Kaepernick's situation), this ad may not have resonated as well with the external environment. The physical reality of both television and the internet increased the reach of the ad exponentially. From the information and cognitive capacity side, Nike's influence and budget allowed them to run an ad that retold the ancient story of David vs. Goliath, knowing that the story would resonate with customers, even though Goliath in this case is an extremely popular and profitable business. This brings us to personal preference. As an organization, Nike had to choose to engage in an ad campaign that lost them customers, but customers that they as a company believed would be an acceptable loss. Applying these aspects of RDT to any organization allows us to examine how organizations might react to environmental constraints in predictable ways.

RDT Challenges and Extensions

Although RDT remains one of the most influential ideas for understanding the study of organizations (according to Google Scholar, more than five thousand people have cited Pfeffer and Salancik's 1978 book or its 2003 reprint since 2020), it is not without opposition and

criticism as a theory. Most notably, Casciaro and Piskorski (2005) argued that RDT was too ambiguous to be useful and proposed "a reformulation of resource dependence theory that addresses these ambiguities, yields novel predictions and findings, and reconciles them with seemingly contradictory empirical evidence from past studies" (p. 167). They further point out that one of the major problems with RDT is the interdependencies that exist between the theoretical predictions made by the model and the prescriptions of action that an organization should take to either maintain/avoid those predictions. While tying model predictions to prescriptive courses of action seems like common sense, Casciaro and Psikorski (2005) were pointing out that these courses of action necessitated a continuous chain of interaction between prescription and prediction. While they have a valid point, there is an assumption in their response that there is a permanent way to "solve" interactions between an organization and their environment, specifically when a power imbalance exists. Instead, RDT assumes that interactions continue between an organization and the environment beyond an interaction with any one competitor or resource.

One of the primary indicators of institutions managing their available resources well is the ranking systems discussed in the previous section. Bowman and Bastedo (2011) point out that institutional rankings can extend resource diversification and end up becoming a resource-gathering tool. The circular relationship between rankings (partially based on resources) and an institution's ability to diversify resource streams and acquire additional resources because of their ranking creates a cycle that is difficult to break (Kim, 2018). Difficulties arise because the rankings are hard to change when reinforced with additional resources and no institution caught up in the cycle of high ranking and increased resources has a reason to break that cycle

at present. Beginning with an unbalanced system makes the pure application of RDT difficult.

In addition to attempts to point out the difficulties involved in RDT, discussions about how to manage the loss of organizational autonomy created by the external environment have surfaced. Froelich (1999) extends the interpretation for nonprofit organizations by outlining multiple strategies nonprofits can use to diversify resources. This increased diversification combats the influence any one resource stream has over the organization. Nowhere is this need to diversify more evident than in the higher education sector.

RDT in Universities

Inevitably, "Colleges and universities interact with their environments in ways that enhance the acquisition of human and financial resources" (Volkwein & Sweitzer, 2006, p. 142). Universities have the unenviable task of making the mission of the institution and the finances of the institution appear independent of each other, but "Higher Education Institutions (HEIs) do not operate in a vacuum, nor are they autonomous. They depend on the environment in multiple ways" (Namalefe, 2014, p. 5). Gordon C. Winston (1999) referred to this relationship as the university having to be both the church and the car dealer, the result of which is "a tension between doing good and doing well" (p. 31). These competing objectives account for the difficulties in applying traditional decision-making models to higher education. Organizational choice models can be grouped into three general categories: attempted optimizing (optimizing and administrative models), compartmentalized (incremental and mixed scanning models), and irrational (garbage-can and political models) (Cornelius, 2012). While these models all deal with determining how universities make decisions, each one focuses on specific intrinsic motivations (although some of those motivations are related to external factors) for making decisions.

By contrast, resource dependence theory looks at institutions through external factors that influence decisions made in a university. External factors weigh heavily in public college and university decision-making because,

> State public higher education systems in the United States are governed by the states in which they operate, representing a principal and agent relationship. The resource dependency theory describes the behavioral decisions and implications resulting from an organization's dependency on a few finite resources. (Bennett & Law, 2020, p. 2)

As Froelich (1999) points out, "Evolving resource dependence is demonstrated by the shifting reliance on each source of funds: private contributions, government funding, and commercial activities" (p. 246). Public figures increasing regulations and bureaucracy in the name of public accountability are and have been one of the main external factors influencing university decisions (Duderstadt & Womack, 2003). Resource dependence theory accounts for these requirements by examining how institutions spend resources to maintain this accountability and how available resources change when institutions do this particularly well, which may not have been obvious under other models. Pamela Tolbert (1985) begins her discussion by pointing out that resource dependence theory shows "the need to ensure a stable flow of resources from external sources of support partially determines administrative differentiation" (p. 1). Administrators make many of their choices based on the need they have for a stable flow of resources.

Unfortunately for public IHEs, "The best policy proposals generally find ways of accomplishing a particular objective with the smallest fiscal footprint" (Archibald & Feldman, 2011, p. 233). Institutions have developed a "pattern of large tuition increases following budget shortfalls is evident in almost every state. The result is that the students end up paying in the form of higher tuition" (Archibald & Feldman, 2011, p. 247). The continued decrease of stable

pools of resources for public universities (as discussed previously) promotes increased involvement in academic capitalism (Jaeger & Thornton, 2005; Slaughter & Leslie, 1997). Institutions accommodate more students with fewer resources, usually by increasing enrollment metrics while faculty public service declines (Altbach, 2016; Jaeger & Thornton, 2005; Lachman, 2022). Resources are available for institutions and professors, but those resources are increasingly based on competition (for grants, tuition dollars, etc.) while some other traditional income sources for public universities (primarily state support) are continually being cut, encouraging institutions to focus on the acquisition of additional resources (Hirsch & Weber, 2002; Slaughter & Leslie, 1997). While this may not seem ideal for institutions, many are finding ways to build on RDT and Agency Theory to leverage available resources and increase their capacity for available finances to serve their students (Bennett, 2018; Bennett & Law, 2021; Powell & Rey, 2015). In fact, "From a resource dependency perspective, public universities can consider the adaptive yet responsive strategies to build resource capacity – adapting and changing to fit environmental requirements or attempting to alter the environment in order to fit the institution's capabilities" (Powell & Rey, 2015, p. 97). On the positive side, Shon et al. (2019) point out that from the group of nonprofits, shifting revenue sources are less likely to affect hospitals and higher education. However, that may be because they have spent a long time learning how to handle shifting revenue sources. The combinations they are employing to adapt provide a specific way to examine the reasons for closing off-site locations and a potential way to determine whether off-site locations should even open in the first place.

Reasons to Build and Maintain Off-Site Locations

The literature provides initial responses to the question "Why build an off-site location?" Giancola (2013), for example, offers a compelling argument from personal experience and data about the value of an off-site location, specifically regarding the creation and maintenance of a mission-based prison education program. Harper et al. (2017) describe off-site locations as a reasonable alternative to online education if online is not meeting the needs of all students. Krueger (2011) points out that, "regardless of the branches' lack of prestige, students are happier, faculty are more engaged, and school personnel are more motivated than their main campus counterparts," when discussing the quality of interaction/education as a viable reason for an off-site location (p. 5). Cohn et al. (1989) examined the reasons to open an off-site location from a financial benefit standpoint, claiming that "From a cost point of view, expansion appears to be warranted only when growth occurs simultaneously in more than one output" (p. 289). That said, Hoyt and Howell (2012) describe the literature on off-site locations as "very eclectic" at best (p. 110).

The most common reason to open an off-site location has to do with the location itself, since off-site locations are built in partnership with the surrounding area. Clark and Tullar (1995) provided commentary along with the initial agreement set between Coconino Community College, Northern Arizona University, and the city of Page to develop a center that both institutions could use in Page. This agreement expanded access for the citizens of Page and increased the potential student (and tuition) pool for both institutions. Their study agrees with Rossi and Goglio (2020) that satellite campuses are uniquely placed to serve their localities.

Rossi and Goglio (2020) also explained satellite campuses as offering, among other benefits: 1) The stimulation of local demand for goods and services and, in turn, local revenue production and employment; 2) The development of local human capital; 3) An increase in local business productivity; and 4) Improved services and physical assets available to the community. An agreement further enhances the area if the student wants to remain nearby after graduation, as "studying locally makes it possible to nurture formal and informal personal relationships that facilitate access to the job market after graduation" (Rossi & Goglio, 2020, p. 38). In addition, Wolfe and Strange (2003) discussed the ability of community-based institutions to develop flexible and responsive programs, specializing in ways that larger institutions in distant cities cannot.

Students also invest heavily in location, as we can see when "Even with the growth of online education, students often desire access to a physical campus" (Harper et al., 2017, p. 5). While institutions offer many of the same courses online that would be offered at an off-site location, the student desire for a physical campus is one RDT aspect of interacting with an institution's customers. Dengerink (2001) observed that "Many states have initiated new campuses primarily to provide additional access to higher education" (p. 20). The state of Washington used branch campuses to meet "an unmet need [for higher education] associated with a place-bound population, unable to relocate" (Morrill & Beyers, 1991, p. 1). In the process of developing the off-site locations, they determined where each location would maximize access for the students of the state. The campuses established by this process in 1989 reported on their findings in 2003 finding that "Branch campuses have expanded access to higher education… and contribute[d] to regional economic development" (Pennucci & Mayfield, 2003,

p. 2). The intentional choice of locations as a function of state-wide higher education planning demonstrated a successful return on the investment in off-site locations.

Location is not solely about the potential profit incurred from the creation of an off-site location, it is also about the geography of opportunity, which is a "key concept in understanding the nature and extent of educational inequality in America" (Hillman, 2016, p. 990). Briscoe and De Oliver (2006) discuss access costs incurred when campuses build away from disadvantaged populations, specifically the costs associated with transportation and time lost to reach the institutions. Leaney and Mwale (2021) tied widening participation resulting from an increase in local institutions to "resolving social inequality" and discussed "the contradictions between discourses of equality and diversity and neoliberal conceptualisations of higher education as market" (p. 977). Although many colleges focus on bringing students in to a main campus as often as possible, "Having 'better information' about a college hundreds of miles away may be irrelevant for a student who prefers to (or needs to) stay close to home, regardless of how well another college might be a good academic fit" (Hillman, 2016, p. 992). This idea of access, especially for students that cannot move away from their current location for one reason or another, drives much of the literature currently surrounding the development of off-site locations (Briscoe & De Olivier, 2006; Hillman, 2016; Park, et al., 2021).

Opening an off-site location is difficult. Dengerink (2001) raised the question of how should organize off-site locations, while Harding and Lammey (2011) wanted to ensure that "geographic distance does not inhibit effective oversight… academically, financially, and culturally" (p. 66). Professors from the main campus can staff off-site locations within a certain driving range without extensive difficulty, however, "Resident faculty voiced having a deeper

connection with the branch campus students than did the non-resident faculty" (Harper et al., 2017, p. 18). In the case where main campus faculty primarily staff an off-site location, fewer students and faculty form deep connections. Using established faculty and staff members provides a more efficient process at any campus, even at the expense of equity.

Equity vs. Efficiency

Harper et al. (2017) point out that branch campuses provide greater access to higher education, but is that access equitable? The most common answer is "it depends." There are questions about the "Degree to which the location and services offered by a multi-campus university, geographically situated consistent with the commercial principles of a large mass-market enterprise, facilitate access for educationally underserved groups" (Briscoe & De Oliver, 2006, p. 204). In terms of equity, branch campuses are characterized by "older students, a lower percentage of minorities, lower average high school GPA, higher percentage of first-generation students, and a higher percentage of Pell-eligible students" (Jacquemin et al., 2019, p. 1). However, "Concerns about efficiency, effectiveness, and economic value are privileged over commitments to social justice and values of equity and diversity" (Leaney & Mwale, 2021, p. 978). Satellite campuses make an important contribution to widening access to university education, enrolling local students who, in the absence of local higher education provision, would not have gone to university (Briscoe & De Oliver, 2006; Pennucci & Mayfield, 2002). In terms of access, this is a good theory, but in practice it becomes problematic.

Bastedo and Gumport (2003) examine the argument of access by looking at what students are able to access despite the promise of equal access. While "Equality of opportunity for all students to attend public higher education in their state, without regard to their

background or preparation, is a foundational principle of higher education policymaking in the United States," there is little evidence we are reaching that foundational principle (Bastedo & Gumport, 2003, p. 341). Instead, "This persistence of social inequalities of access to higher education generally, and to more prestigious forms of higher education in particular, seriously compromises the in-theory potential of higher education to serve as a vehicle or social mobility" (Boliver, 2017, p. 424). Taylor and Cantwell (2018) discussed this stratification of access to certain classes of colleges and how it tended to fall along racial lines, although they acknowledged that future researchers could examine other variables.

Increased numbers of students participating in higher education while inequalities exist within the education provided is not something that happens at random but is something that policies surrounding the quality and availability of public education encourage (Hillman, 2016). The policies focused on expanding access are "focused on getting poorer students into universities" without worrying whether attending these institutions sets these students up for success (Vignoles & Murray, 2016, p. 2). As Altbach (2019) puts it, "The challenge is to recognize the complexities and nuances of the global higher education context – an academic world fraught with inequalities in which market and commercial forces increasingly dominate" (p. 102). While neoliberal policies focus on remaking public universities into entities that bear their own weight in the market, "the mission and contribution of branch campuses is critical to expanding access to higher education and providing economic development support for communities" (Krueger, 2011, p. 6). The creation of these off-site locations can and should revolve around the expansion of access to quality educational interactions, but the biggest problem may exist well before students ever reach these locations. As Boliver (2017) points out,

"If our optimism in the power of higher education to transform lives, communities and whole societies is to be renewed, we need to find ways of making people's starting points much more similar" (p. 432). Although many public institutions have the same starting point for creating an off-site location, not all of them maintain these locations once they establish them.

Closing Off-Site Locations

There are political risks to opening an off-site location, not the least of which is potentially crossing swords with existing institutions and other branch hopefuls in fast-growing areas. With that understanding, the literature offers one simple reason for taking both the political and financial risk of building a branch campus: "Well-selected sites… can greatly increase enrollments" (Fonseca & Bird, 2007, p. 12). Since increased enrollment comes with increased funding, it comes as no surprise that institutions will consider taking those risks. Institutions should do everything they can to engage in that behavior if they are attempting to maximize specific revenue streams as encouraged by RDT.

Using RDT as the reasoning to create an off-site location can be problematic for institutions if the cost does not drive an expansion in tuition. This might happen because of a shift in the population of students. Local students taking courses at the off-site location instead of online or travelling to the main campus increase the number of students served at the off-site location without increasing the total number of students. It is also possible for the institution to misjudge the need for an off-site location in a specific area or with a specific function. Occasionally, an institution establishes an off-site location as part of the mission with the full knowledge that it will lose money. For whatever reason, there is sometimes a requirement that "individual government agencies must, because of shifts in demand or policy,

close some, or all, of their facilities" (Behn, 1978, p. 332). Either a full closure or merging the functions of different institutional locations, which is more common with public institutions, are possibilities.

As discussed in the previous section, "The closure of satellite campuses must be understood within the context of deepening social-spatial inequalities as a consequence of austerity politics" (Leaney & Mwale, 2021, p. 989). Closing off-site locations can be problematic for students that depend on them, especially if the functions merge into an institution's online programs. Logically, "The size of the institution… seems closely related to the catastrophic nature of the collapse" (Colston, et al, 2020, p. 16). The institutions that make the news and draw the attention of federal and state policymakers are those whose closure affects the most students. As a result, public institutions closing off-site locations rarely receive the attention that is due the phenomenon. Policymakers write these off as failed attempts to garnish additional resources (Carlson, 2020; Colston, et al., 2020; Lee & Looney, 2019). When possible, policymakers and regulators work to determine what will prevent similar closures.

Risk of Closure

As a result, studies that examine methods of assessing the risk of closure are popular. The advice for mitigating risk from these studies ranges from the hopefully obvious to the potentially useful to either regulators or students. Pavlov and Katsamakas (2021) point out that "a healthy emergency cash reserve and a substantial endowment might be critical when an academic institution experiences an external shock" (p. 21). Likewise, Sokol and Cao (2019) posit that cash flow generation would be the best way to measure the financial health of a school while Porter and Ramirez (2009) place the dependence of closure on available resources

and “ability to weather financial difficulties” (p. 4). As these metrics are not particularly available to students attending the institutions, “Students should also be notified of other high-risk changes to the school’s structure, such as mergers, changes in ownership, and changes in control” (Colston, et al, 2020, p. 12). Students provided with this information have a better understanding of whether they should continue at an institution. While the quality of financial reporting may also affect the risk of closure at an institution, there are indications that this is problematic at a public institution (Greenwood & Tao, 2021). While financial reporting is better when institutions depend on regulators for funding, Greenwood and Tao (2021) indicate a need for those regulators to avoid depending on the financial reporting as a part of the university regulation.

Recently, Zemsky et al. (2020) completed a formulaic assessment of colleges that might be at risk of closure or under stress. While they did not list any specific institutions (for reasons discussed in the next section), they did provide a method for institutions to determine a risk score based on key metrics. Which institutions sat at either end of the score spectrum revealed the most important of these metrics. They posited that “The institutions least at risk are in the Far West, the Mid-Atlantic, and New England, and the most at risk are in the Great Lakes and the South… It is a pattern that largely reflects the net impact of reductions in state funding for four-year public colleges and universities” (Zemsky et al., 2020, p. 59). From their perspective, when states systematically reduced public colleges funding, they fell into the higher risk categories.

Predicting Closures

However, there is a marked difference between determining the level of risk associated

with a certain college and actively predicting the closure of a college. First, researchers do not necessarily agree about the best predictors of college closure (Eide, 2018). For example, Bennett (2018) "analyzed (a) whether fluctuations in state appropriations affect an institution's financial condition and (b) whether the allocation ratios can be used to predict the financial condition of an institution" (4) and specifically found that "changes in state appropriations are not a good predictor of financial condition" (p. 78). This seems to directly contradict Zemsky, Shaman, and Baldridge's above contention.

Predicting institutional closure has become a popular topic with the media since the collapse of larger for-profit institutions. "In 2017, Christensen specifically predicted that '50 percent of the 4,000 colleges and universities in the U.S. will be bankrupt in ten to fifteen years'" (Hess, 2017, para. 4). Stowe and Komasara (2016) provide an analysis that aims to predict what will close over time, focusing on variables included in Lyken-Segosbe and Shepherd's (2013) discussion and determining that management has the greatest influence over whether and how an institution will close. Interest partially developed because "higher education scholars, public officials, and consumer advocates have pushed for a reliable way to identify endangered colleges" and multiple studies have attempted to answer this call (Carlson, 2020, para. 25).

Kelchen (2020), Bennett and Law (2020), Zemsky et al. (2020), and Barton (2022) all attempted to develop methods of determining which schools are likely to close. Bennett and Law (2020) determined that "Investing in academic support services, student services, general institutional support and operations and maintenance of plant has a statistically significant positive impact on an institution's financial condition" (p. 34). The identification of methods for

improving an institution's financial condition is helpful but helps avoid, instead of helping predict, closure. Barton's (2022) study "investigated the possibility that improved multivariate modeling factoring in variables… would better predict the likelihood that an institution would close or experience financial fragility" but was unable to produce material more useful than a financial fragility score (p. 46). Kelchen (2020) studied private non-profit and for-profit colleges and "while able to identify colleges at relatively high risk of closure, only a small fraction of these high-risk colleges ended up closing" (p. 3). Eventually, each effort concludes what Zemsky et al. (2020) concluded, that "Predicting collegiate closures is a media parlor game that helps neither students nor institutions" (p. 115).

COVID-19 Closures

I have also included information surrounding COVID-19 closures. Because of the unique situation surrounding IHEs and COVID-19, multiple articles discuss aspects of institutional closure related to the pandemic. Since the study runs from 2012 through 2019, difficulty arose in determining which portions of this literature were relevant to the study. As a result, I focused on articles which bore relevance to underlying issues in higher education.

Pavlov and Katsamakas (2021) note six stressors from COVID-19 on university finances, including: 1) fewer students on campus, 2) lower enrollments, 3) COVID-19 preparedness, 4) health and safety issues, 5) greater financial need, 6) calls to reduce tuition. Fewer students on campus, lower enrollment, and greater financial need are stressors discussed when wanting to close an off-site location. Krishnamoorthy & Keating (2021) discuss the disruption or advancements (depending on one's perspective) in upskilling and reskilling instead of college, implying that college was becoming obsolete, and that the pandemic only pointed that out.

They indicated that “Higher education before COVID-19 was an unhealthy cocktail of complex dynamics” (Krishnamoorthy & Keating, 2021, p. 259). These studies all point out systematic problems that existed in higher education exacerbated by the pandemic. Kelly and Columbus (2020), on the other hand, discussed how the pandemic had the potential to negatively affect the health of institutions of higher education, increasing the closure risk for “small private colleges and regional public colleges…facing consistent decreases in state appropriations, are more susceptible to risk” (p. 12).

This brings us back to RDT’s necessity when focusing on how institutions of higher education interact with their off-site location by attempting to diversify and maximize resources at each turn. The push for resource diversification explains portions of the reason behind building additional off-site locations, but it only begins to address the reasons for closing these sites. There is little literature that explains the closing of off-site locations aside from human interest articles related to the closing of specific sites or the grand failure of foreign branch campuses, for which I have already discussed the reasons for exclusion. This project hopes to begin filling this gap in the literature.

CHAPTER 3

METHODOLOGY

Introduction

The purpose of this study was to examine characteristics that may lead to the closure of off-site locations at four-year, public institutions of higher education in the United States between 2012 and 2019. Both a fixed effects panel regression and a fixed effects conditional logit panel model were employed in the study. I used descriptive statistics of the variables to both describe the trend of closures across the period and to provide insight into correlations between variables and universities closing off-site locations. The remainder of this chapter provides the research questions, variable rationales, data collection strategies, and research design for this study.

Research Questions

The first research question sought to discuss the trends in off-site location closures and set the stage for the necessity and value of the remainder of the project, as stated below:

1. What trends exist in the closure of off-site learning locations over the specified time period?

I examined the number of closures by year, comparing the percentage of total closures made up by four-year, public institutions to see if there were years when four-year publics closed off-site locations at an increased or decreased rate. I also looked at the percentages of public closures by state. As state support was an independent variable (discussed below), a close correlation would allow institutions to anticipate closures based on deeper cuts in state appropriations or provide a policy argument that reduced support could endanger off-site

locations. The same assumption could be made of any variable that trended with the number of closures.

To examine this question, I used the United States Department of Education Closed School lists and determined how many four-year public institutions closed an off-site location during the study period. I also used the Integrated Post-Secondary Education System (IPEDS) to determine which four-year public institutions reported locations in addition to the main campus but do not appear on the closed school list in the study window. To ensure that I did not miss off-site locations, I examined each institution's most recent accreditation report for the listing of their current off-site locations and added those relationships not previously included to the list. Once the total number of off-site locations built by four-year public institutions was determined, it was easier to determine trends over the course of the study window by looking at the number closed versus the total number that existed in each year of the study.

The second research question focuses more on the independent variables discussed below and how each variable affected the likelihood of off-site location closure:

2. Which institutional characteristics are associated with a heightened risk of closing an alternate learning location?

The institutional characteristics chosen as independent variables to answer this question were number of off-site locations, tuition revenue, state revenue, local revenue, private revenue, percentage of students taking no distance courses, percentage of applicants accepted, enrollment, percentage of students who identify as White (non-Hispanic), and year. A description of these variables and the rationale for choosing each one follows.

Variable Rationales

Number of Off-Site Locations

I included the number of off-site locations because an institution without an off-site location cannot be at risk of closing an off-site location. To prevent wild swings in the results based on outliers, this variable was determined by taking the natural log of the number of off-site locations. With a range of 196 and a mode of 1 in the number of locations, the decision to take the log seemed justified.

Revenue Variables

I adjusted each of the revenue variables that follow for inflation into 2019 dollars to make comparisons across time. In addition, I converted each revenue variable to thousands of dollars per Full Time Equivalent (FTE) so that coefficients would exist in reasonable ranges.

- *Tuition revenue*: Tuition revenue as a variable was determined by taking the revenue from tuition per FTE as reported in IPEDS and then adjusting it as described above. I tied tuition revenue to Resource Dependence Theory (RDT) as maximizing tuition by opening an additional off-site location and minimizing costs by closing an unprofitable off-site location both conditions are connected to an institution's dependence on tuition revenue.

- *State revenue*: State revenue as a variable was determined by taking state appropriations per FTE as reported in IPEDS and then adjusting it as described above. I tied state revenue to RDT because decreases in state funding provide a rationale to close off-site locations and focus on the main campus while increases in state funding provide an opportunity to expand the institutional mission by opening or increasing participation in an off-site location.

- *Local revenue*: Local revenue as a variable was determined by taking local funding per FTE as reported in IPEDS and then adjusting it as described above. I tied local revenue to RDT, as decreases in funding from the location provide a rationale to close off-site locations and increases in local funding may initiate or expand plans for an off-site location in a specific area.

- *Private revenue*: Private revenue as a variable was determined by taking private revenue per FTE as reported in IPEDS and then adjusting it as described above. Weisbrod, et al. (2008a) discuss the impact of private donations within the two-good model of higher education, pointing out that activities that benefit the collective good (Mission)

> may be thought of as either teaching able but low-income students, or as undertaking basic research and disseminating it widely – and that collective-good mission is pursued subject to a financial break even constraint. That constraint requires that the school covers all costs, and so it must engage in some profitable "revenue-good" activity, R, to finance its unprofitable collective "mission-good." (p. 3)

RDT provides a way to examine this interaction because "M and R goods are sometimes not separable...[as] when the willingness of a potential revenue source...depends on the university's mission" (Weisbrod, et al., 2008a, p. 4). Private revenue sources potentially have a say in how provided monies should be employed, adding an additional layer of external interaction to the source.

Percentage of Students Taking No Distance Courses

Online participation was one of the variables bounding the lower edge of the study window and I retrieved it from IPEDS in three complementary percentages: percentage of students taking only distance courses, percentage of students taking at least one (but not all) distance courses, and percentage of students taking no distance courses. Since the variable of interest was participation, I could have summed the first and second variable as the total

participation. However, since a decline in students taking no online courses is the same change as an increase in students taking any online courses, I decided to work with the provided variable instead of a manipulated one. An increase in online participation had the potential to be highly coordinated with the closing of off-site locations as institutions may feel that they can obtain the same mission goals through online programs as they would through an off-site location.

Percentage of Applicants Admitted

I recorded the percentage of students admitted as it was reported to IPEDS. I included this variable in the fixed effects models to approximate the institutional commitment to access. I considered institutions admitting higher percentages of students more open to access and I considered institutions admitting a lower percentage to be more prestigious. From an RDT perspective, a decreased percentage of applicants admitted may indicate institutional shifts in resources towards spending more on reputation instead of attempting to admit as many students as possible. The percentage of students admitted helped frame the discussion of reputation, ranking, and selectivity and how those may affect the closure of off-site locations.

Enrollment

Enrollment size is determined by the data reported to IPEDS and I included it as a variable to examine whether larger schools are more or less likely to close an off-site location and whether a drop in enrollment may incentivize an off-site location closure to fill seats at the main campus. I included the natural log of this variable in the analysis to prevent the results from being skewed by the largest institutions.

Percentage of Students Who Identify as White (Non-Hispanic)

Percentage of students who identify as White (non-Hispanic) as a variable was determined through the reported value in IPEDS. The inclusion helped determine whether closed off-site locations were intended to provide access for traditionally underserved students.

Year

I included year as the time variable in the panel data. The years were in the analysis as dummy variables using the i.year command in Stata. This inclusion helps to address modifiers over time for the variable that may be a function of the year, the economy, or even the political climate, but that I did not otherwise include in the formula.

Data Collection

The list of institutions examined in the study was determined by the 2010 Carnegie classification data and included all the public, baccalaureate-granting institutions from that list (Carnegie Foundation, 2010). I collected the data on location closure from the U.S. Department of Education Closed School List (Department of Education, 2021). I first sorted the list by closure date and only included closures from 2012 to 2019 in the data set. I then compared the closure list to the schools that are eligible for the study based on Carnegie classification. I removed all closures not related to four-year public institutions on the Carnegie list from the data.

Since not every institution which houses an off-site location experienced a closure, I examined each of the institutions on the list for a closure after the end of 2019, which would indicate the existence of an off-site location that closed after the period. I then examined each institution through IPEDS to find off-site locations (institutions with identical OPE IDs that do

not end in 00) during the study window. Lastly, I examined the posted accreditation reports for the list of off-site locations reported to their accrediting body to make sure there was a correct record of off-site locations for the duration of the study. During this process, I removed institutions accredited by the Northwest Commission on Colleges and Universities (NWCCU) as they were the only accrediting group who did not list off-site locations for member institutions.

Research Design

The idea for this study developed while researching branch campuses when I came across the U.S. Department of Education's closed school list. The list begins in 1984 and has been consistently updated through the present when schools close a location. The sheer volume of closures (19,547 between 1984 and September 5, 2023) provided an opportunity to explore a sizable secondary data set regarding off-site location closures.

The research used a fixed effects model because the entire population is being bounded in the concept of four-year public institutions of higher education as defined by the 2010 Carnegie classification. The inclusion of the entire population in the study kept me from dealing with a random sample of off-site locations. This format allowed me to compare specific institutional characteristics (discussed below) of public, baccalaureate-granting institutions with at least one off-site location. This research model consisted of secondary panel data, as the subjects being observed at the beginning of the period will be observed throughout the time frame and none of the data was provided directly to the researcher.

Lastly, this study was initially designed as a logistic regression, attempting to explain our binary dependent variable of off-site location closure by looking at the following eleven variables: number of off-site locations, tuition revenue, state revenue, local revenue, private

revenue, percentage of students taking no distance courses, percentage of students admitted, enrollment, percentage of students who identify as White (non-Hispanic), and year. The initial model was untenable because it dropped more than two-thirds of the data from the study because the results on those institutions were either all positive or all negative. As a result, I created two models that allowed for the comparison of results. One was a fixed effect panel regression and the other was a conditional logit panel model with fixed effects. In both cases, I controlled for error across years and within states to ensure the results were as accurate as possible. These models helped determine whether and to what extent an institution should consider each variable when it wants to open an off-site location.

CHAPTER 4

RESULTS

Introduction

This chapter presents the results of a longitudinal panel data analysis focused on the academic year data from 2011-2012 until 2018-2019 and includes Integrated Postsecondary Education Data System (IPEDS) academic years 2012 to 2019. I selected universities for this analysis from the 2010 Carnegie classification data. All public, baccalaureate-granting institutions were in the initial study group. From that list, I removed institutions with incomplete IPEDS survey data for variables of interest between the years 2012 and 2019. Then, I eliminated institutions from the study that did not have any off-site locations during the study window. In much the same way that marriage is the leading factor in divorce, having an off-site location is the most likely factor leading to off-site location closure. After these adjustments, the study contained 365 institutions (n=365) which produced 2920 observations (N=2920) over the eight years (T=8). I organized the data and ran frequency statistics using STATA 17. I summarized the descriptive statistics of the dependent variable to understand trends in the closure of off-site locations amongst public, four-year institutions of higher education. In addition, I summarized financial variables focused around one thousand dollars per full-time enrollment (from Tuition, State, Local, and Private sources), percentage of students not taking any distance courses, percentage of students admitted, the natural logarithm of an institution's enrollment, the percentage of students identifying as White (non-Hispanic), and the Student to Faculty Ratio of each institution over the eight years to understand what trends may have existed within those variables.

After developing an understanding of the trends, I attempted to run a logit regression because the preferred methodology for a binary dependent variable is to run a logit regression. However, the initial logit run on this data set omitted 256 groups (2,027 observations) because of either all positive or all negative outcomes. The loss of two-thirds of the observations was a great enough hurdle that I decided to run a fixed effects panel data regression instead, clustering robust standard errors for institutions nested within the same state. I also continued to search for a logit option to ensure that the results from the fixed effects regression with the full panel aligned with the nearest logit model. In the process, I was able to develop a conditional logit model that clustered errors around the states and grouped by year which only omitted 184 observations (23 groups) from the data set. As the models adhered closely to each other, I have included both to describe any relationships that existed between the independent variables and off-site location closure (the dependent variable). The following sections present the results of this effort.

Descriptive Statistics

The first research question asked for an examination of the trends that existed in the closure of off-site locations among public colleges and universities from 2012-2019 while the second looked at which institutional characteristics are associated with a heightened risk of closing an off-site location. Because of the nature of the second question, I included the selected institutional characteristics in the examination of trends for the first question.

Selection Criteria

I selected the institutions included in this study from the 2010 *Carnegie Classification of*

Institutions of Higher Education. Institutions classified as public, baccalaureate-granting institutions became the initial groups for the study, and I used the IPEDS) to pull information on the target variables as described in chapter three. I then removed institutions that did not possess complete data from the study. I examined the remaining institutions for off-site locations, since having an off-site location is the only way that an institution can decide to close an off-site location and removed those institutions with zero off-site locations at any point in the study window. In this process, I discovered that the Northwest Commission on Colleges and Universities (NWCCU) is the only regional accreditor to not list off-site locations on institutional profiles on their website. Due to this inconsistency, I decided to exclude NWCCU colleges and universities from the study, which resulted in a loss of twenty-seven groups (216 observations). The remainder of the groups formed the dataset for this study as described in the introduction to this chapter.

Independent Variables

Initially, I determined independent variables based on their perceived connection to the closure of off-site locations and whether they qualified as the representative choice of a group of variables. For example, while I pulled data from IPEDS on percentage of students taking only distance courses and percentage of students taking some distance courses, I decided to use percentage of students taking no distance courses. Since the sum of those three variables always equals 100%, the sum of the percentage of students taking some or all distance courses would vary perfectly with the percentage of students taking no distance courses. Because of this covariance, and for the sake of simplicity, I only included the variable measuring the percentage of students taking no distance courses.

Logarithm of the Number of Open Off-Site Locations

While having any off-site locations was a criterion for being included in the study, I wanted a way of accounting for both how many off-site locations an institution had open and how many the institution had closed in the prior year. To avoid outliers having an oversized effect on the results, I took the natural log of the totals. This also guaranteed that I would exclude institutions who reached zero off-site locations from the data, since the natural log of zero is undefined and Stata automatically excludes it.

In running the descriptive statistics for off-site locations, the mean for the number of open locations from 2012-2019 was 11.41 locations. The minimum number of open locations was 1 and the maximum number of locations was 197. More than 1500 observations were below six off-site locations per year and only twenty-four of the observations (eight observations each at three institutions who did not close any locations) were above 80. Table 1 shows the change in the mean of the logarithm of the number of off-site locations. The minimum and maximum remained the same throughout the study period. The mean trended downward consistently, indicating that off-site locations were closing consistently from year to year.

Table 1

Logarithm of the Number of Off-Site Locations

Year	*M*	*SD*	*Min*	*Max*
2012	1.778	1.188	0	5.283
2013	1.748	1.188	0	5.283
2014	1.733	1.183	0	5.283
2015	1.714	1.179	0	5.283
2016	1.689	1.172	0	5.283

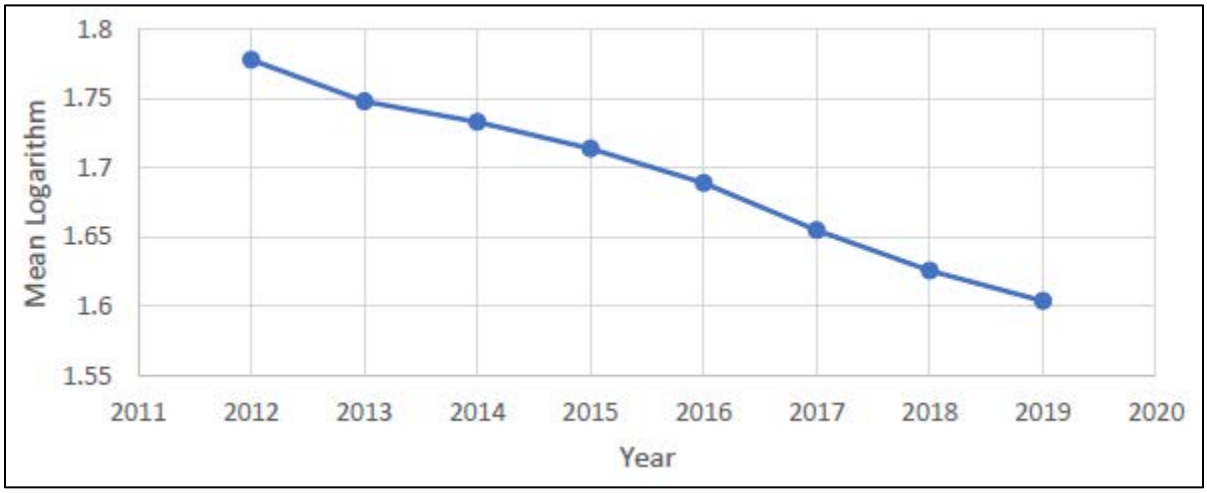
(table continues)

Year	*M*	*SD*	*Min*	*Max*
2017	1.655	1.169	0	5.283
2018	1.626	1.158	0	5.283
2019	1.604	1.156	0	5.283

Figure 1 demonstrates the downward trend in the number of off-site locations from 2012 to 2019. Although there seem to be slightly sharper downward trends in election years, there is no doubt that the number of off-site locations is in a downward trend.

Figure 1

Mean Log of Open Off-Site Locations by Year



Tuition Revenue per FTE in Thousands of Dollars

Four of the variables examined in this study are finance related. The assumption I made was that variance in specific revenue sources would affect the decision to close an off-site location. To account for the fact that increased enrollment would mean increases in both tuition and state revenue, I recorded each of these variables in terms of Full Time Equivalent (FTE) students. To account for inflation, I adjusted all revenues to 2019 dollars using the Consumer Price Index and Inflation rates from the Federal Reserve (US, 2023). In addition, to

make changes easier to visualize, I recorded the variables in thousands of dollars. These practices remained consistent throughout the four independent variables related to revenue.

In running the descriptive statistics for tuition revenue, the average university recorded $8,192 per FTE from academic years 2012 – 2019. The minimum mean tuition revenue was $7,652 per FTE and the maximum mean tuition revenue was $8,462 per FTE. Table 2 illustrates the change in tuition revenue over the study period. The mean relative to inflation trended upward until 2018 when it began to slide back down. The minimum and maximum tuition revenues across the study follow a similar pattern, but occasionally deviate from that pattern either in magnitude or direction.

Table 2

Tuition Revenue per FTE in Thousands of Dollars

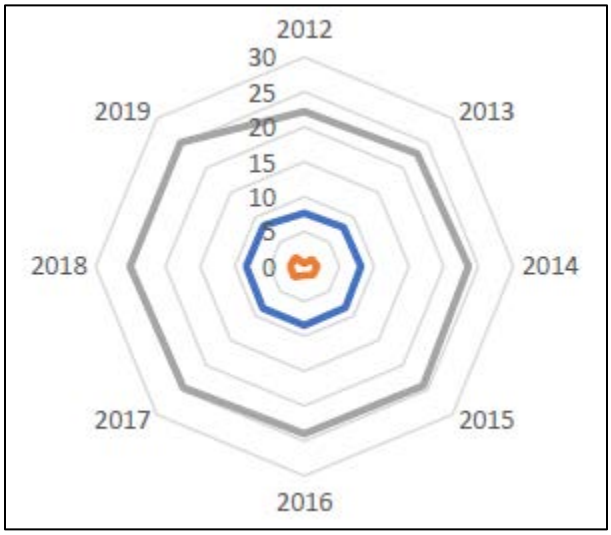
Year	*M*	*SD*	*Min*	*Max*
2012	7.652	3.216	0.395	22.206
2013	7.901	3.310	1.485	22.902
2014	8.113	3.406	1.839	23.551
2015	8.322	3.581	1.710	24.128
2016	8.437	3.666	1.253	23.978
2017	8.462	3.735	2.092	24.581
2018	8.364	3.823	2.050	25.050
2019	8.285	3.858	1.870	25.116

Figure 2 more clearly delineates the relationships involved in the tuition revenue relative to inflation across the study period. Both the mean and the max tuition revenue increase towards the concentric ring above them consistently, but the minimum contains enough variability that it barely resembles the ring formed by the others. In addition, the proximity of the mean to the minimum indicates that inflation-adjusted tuition revenue at the

four-year, public institutions in the study group falls closer to the minimum than the maximum.

Figure 2

Mean, Minimum, and Maximum Tuition Revenue by Year



State Revenue per FTE in Thousands of Dollars

In running the descriptive statistics for state revenue relative to inflation, the average university recorded $7,191 per FTE from academic years 2012 – 2019. The minimum mean state revenue was $0per FTE and the maximum mean state revenue was $27,700 per FTE. Table 3 illustrates the change in state revenue over the study period. The mean state revenue per FTE maintained a general upward trend over the study period. The minimum of $0 was initially a surprise, but upon closer examination, I discovered that all institutions with zero state support were in Colorado, where the Taxpayer's Bill of Rights (TABOR) and creation of a voucher system meant that the funding from the state travels with the student in the form of tuition (Jacobs, 2006). Allowances for this issue are discussed in the limitations section of the concluding chapter.

Table 3

State Revenue per FTE in Thousands of Dollars

Year	*M*	*SD*	*Min*	*Max*
2012	6.778	3.426	0	23.019
2013	6.780	3.463	0	24.041
2014	7.135	3.639	0	24.865
2015	7.293	3.802	0	26.500
2016	7.232	4.008	0	27.014
2017	7.261	3.983	0	27.700
2018	7.549	3.966	0	26.275
2019	7.500	3.991	0	26.084

Local Revenue per FTE in Thousands of Dollars

In running the descriptive statistics for local revenue, the average university recorded $15 per FTE from academic years 2012 – 2019. The minimum mean local revenue was $0 per FTE and the maximum mean local revenue was $5,223 per FTE. Table 4 illustrates the change in local revenue over the study period. While the means are low in comparison to the other revenue sources listed in the study, the 130% increase from 2016 to 2017 and maintenance at that level indicate a jump in local revenue. The correlated increase in the maximum contributions per FTE also indicates increased local spending in the last three years of the study.

Table 4

Local Revenue per FTE in Thousands of Dollars

Year	*M*	*SD*	*Min*	*Max*
2012	0.006	0.052	0	0.736
2013	0.010	0.070	0	0.828
2014	0.007	0.058	0	0.848
2015	0.010	0.077	0	0.900
2016	0.010	0.067	0	0.925

Year	*M*	*SD*	*Min*	*Max*
2017	0.023	0.245	0	4.502
2018	0.024	0.261	0	4.786
2019	0.026	0.283	0	5.223

Private Revenue per FTE in Thousands of Dollars

In running the descriptive statistics for private revenue, the average university recorded $1,412 per FTE from academic years 2012 – 2019. The minimum mean private revenue was $0 per FTE and the maximum mean private revenue was $87,003 per FTE. Table 5 illustrates the change in private revenue over the study period. The maximum private revenue per FTE jumped by more than 400% between 2014 and 2015, which had an outsized effect on the mean in 2015, clearly demonstrated through the increased standard deviation that year.

Table 5

Private Revenue per FTE in Thousands of Dollars

Year	*M*	*SD*	*Min*	*Max*
2012	1.143	1.809	0	16.031
2013	1.229	2.039	0	16.874
2014	1.295	2.178	0	18.134
2015	1.595	5.000	0	87.003
2016	1.472	3.390	0	51.533
2017	1.496	3.634	0	57.138
2018	1.504	3.312	0	49.093
2019	1.560	3.577	0	55.004

Percentage of Students Taking No Distance Courses

Three of the remaining independent variables (percentage of students taking no distance courses, percentage of students admitted to the institution, and percentage of White [non-Hispanic] students at the institution) are measured in terms of percentages. I chose these

variables because of their consistency of comparison across institutions of various enrollments. As discussed previously, I chose the percentage of students taking no distance courses out of the three reported variables in IPEDS related to distance education. The variables provided were percentage of students taking only online courses, percentage of students taking some online courses, and percentage of students taking no online courses. As I intended to look at whether an increase in students taking online courses would lead to the closure of off-site locations, the choices were manufacturing a total percentage of students taking at least one online course by combining the first two listed, or using the last one, which would necessarily give us a variable directly correlated to the manufactured variable.

In running the descriptive statistics for students taking no distance courses, the average university recorded 70.44% of their students taking no distance courses from academic years 2012 – 2019. The minimum percentage of students taking no distance courses was 0% and the maximum percentage of students was 100%. Table 6 indicates that there is variance in the minimum percentage over the years, but there is a clear downward trend in the mean over the study period, indicating an increase in students taking online courses.

Table 6

Percentage of Students Taking No Distance Courses

Year	*M*	*SD*	*Min*	*Max*
2012	76.90	17.37	0	100
2013	75.89	16.33	26	100
2014	74.19	16.62	20	100
2015	71.82	16.86	5	100
2016	69.37	17.49	0	100
2017	67.23	17.75	0	100

(table continues)

Year	*M*	*SD*	*Min*	*Max*
2018	64.98	17.71	17	100
2019	63.13	17.72	14	100

Percentage of Students Admitted to the Institution

In running the descriptive statistics for students admitted to the institution, the average university admitted 69.05% of their applicants from academic years 2012 – 2019. The minimum percentage of students admitted was 7% and the maximum percentage of students was 100%. Table 7 shows an initial jump between 2012 and 2013, but little variance in the minimum percentage over the years. Table 7 also demonstrates a mostly upward trend in the mean over the study period, which could indicate either an increase in the number of acceptances or a decrease in the number of applicants.

Table 7

Percentage of Students Admitted to Institutions

Year	*M*	*SD*	*Min*	*Max*
2012	65.84	17.22	7	100
2013	66.81	16.35	23	100
2014	68.52	15.83	24	100
2015	69.18	16.03	21	100
2016	68.89	16.02	26	100
2017	70.22	16.27	24	100
2018	70.85	16.71	23	100
2019	72.13	16.25	23	100

Natural Log of Enrollment at the Institution

In running the descriptive statistics for the natural log of enrollment, the average university enrollment had a natural log of 9.13, with a minimum natural log of 6.89 and a

maximum natural log of 10.99 from academic years 2012 - 2019. Table 8 shows a remarkably consistent mean, minimum, and maximum across the study. While individual institutional enrollment likely varied over the period, enrollment displayed the same descriptive characteristics throughout.

Table 8

Natural Log of Enrollment

Year	*M*	*SD*	*Min*	*Max*
2012	9.14	0.79	6.89	10.99
2013	9.13	0.80	6.90	10.85
2014	9.13	0.82	6.94	10.87
2015	9.14	0.83	6.90	10.91
2016	9.14	0.83	6.92	10.93
2017	9.14	0.84	6.93	10.95
2018	9.14	0.84	6.89	10.98
2019	9.12	0.85	6.90	10.99

Percentage of White (Non-Hispanic) Students in the Institution

In running the descriptive statistics for White (non-Hispanic) students at an institution, the average university consisted of 57.15% White (non-Hispanic) students from academic years 2012 – 2019. The minimum percentage of White (non-Hispanic) students was 0.48% and the maximum percentage of White (non-Hispanic) students was 96.83%. Table 9 demonstrates downward trends in both the mean and maximum percentage of White (non-Hispanic) students across the study period. Figure 3 more clearly demonstrates the parallel relationship between the decreases in mean and maximum percentage of White (non-Hispanic) students over the course of the study.

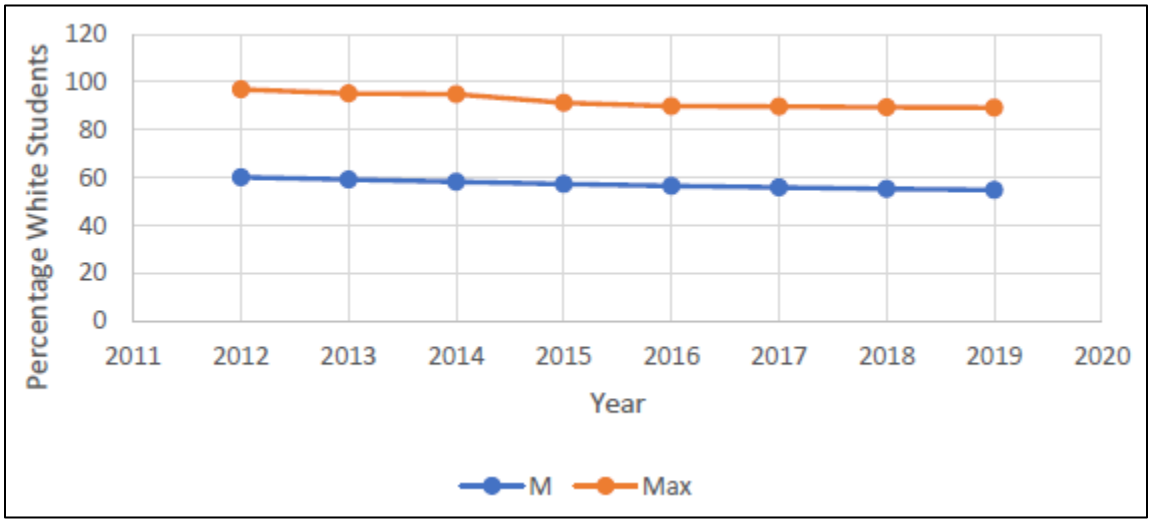
Table 9

Percentage of White (non-Hispanic) Students

Year	*M*	*SD*	*Min*	*Max*
2012	60.12	24.21	1.22	96.83
2013	59.19	24.14	1.37	95.17
2014	58.20	24.07	1.44	94.86
2015	57.26	23.97	1.51	91.26
2016	56.52	24.10	1.61	89.76
2017	55.91	24.28	0.98	89.65
2018	55.23	24.31	0.48	89.32
2019	54.79	24.40	1.37	89.25

Figure 3

Trend in Percentages of White (non-Hispanic) Students



Student to Faculty Ratio

In running the descriptive statistics for student to faculty ratio at an institution, the average university had 17.92 students for each faculty member from academic years 2012 – 2019. The minimum student to faculty ratio was 9 and the maximum student to faculty ratio

was 32. Table 10 demonstrates a downward trend in the mean student to faculty ratio across the study period. The minimum and maximum student to faculty ratios, however, only vary minimally across the study period.

Table 10

Student to Faculty Ratio

Year	*M*	*SD*	*Min*	*Max*
2012	18.52	3.50	10	32
2013	18.07	3.24	11	31
2014	18.12	3.52	10	31
2015	18.04	3.47	9	30
2016	17.92	3.46	10	30
2017	17.83	3.47	10	30
2018	17.52	3.41	10	30
2019	17.34	3.53	10	30

Dependent Variable

The dependent variable for the study is off-site location closure. I recorded the variable as a binary variable indicating whether an institution did not close any off-site locations in that year (0) or closed at least one off-site location (1) for the academic years 2012 – 2019. In running the descriptive statistics for closure, 233 institutions closed at least one off-site location over the study period. Those institutions likely closed off-site locations in later years and some necessarily closed more than one each year. Table 11 provides insight into the number of institutions that experienced the closure of an off-site location.

Figure 4 provides a visual understanding of the variance associated with off-site location closure. The number of unique institutions within a year stays within the 27 – 34 range until 2019, when it drops to 22 institutions. This is unsurprisingly the year with the lowest number of

closed locations as well. The average number of closures per year (for those that closed any) has more variance than I anticipated, ranging from a low of 1.73 closures per school in 2019 to as high as 4.41 per school in 2017. While I have suspicions of why this might happen, I will leave specific speculations for the upcoming discussion chapter.

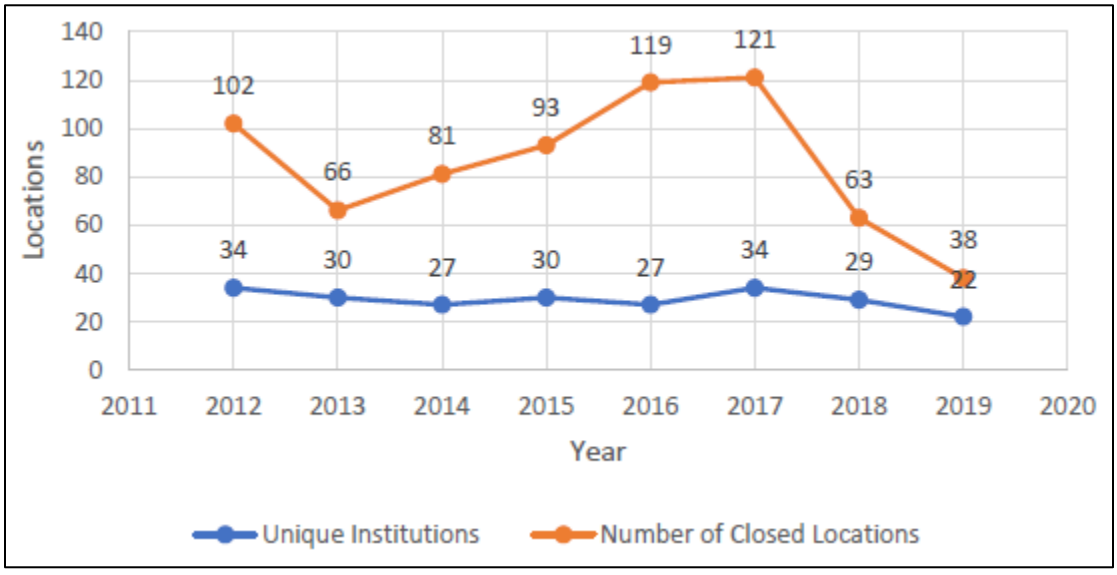
Table 11

Closure

Year	Unique Institutions	Institutions without Closure	Number of Closed Locations
2012	34	331	102
2013	30	335	66
2014	27	338	81
2015	30	335	93
2016	27	338	119
2017	34	331	121
2018	29	336	63
2019	22	343	38

Figure 4

Unique Institutions and Closed Locations by Year

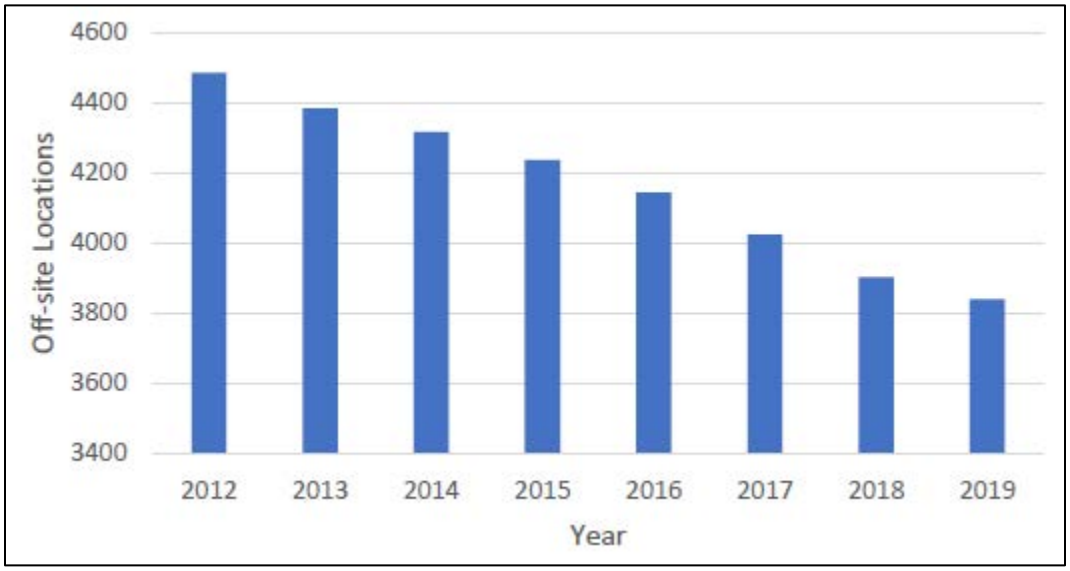


Trends in Off-Site Location Closure

The first research question asked what trends exist in the closure of off-site locations among public colleges and universities from 2012 – 2019. Figure 4 provides that context. The number of institutions that were closing off-site locations was smaller than the total number closed would lead us to believe. Backing away from the optimized data set for the regression, we can get a clear look at the overall trend by looking at the number of off-site locations that were open at the end of each year. Figure 5 paints the picture well but can be slightly misleading because of the shortened y-axis. The number of off-site locations fell steadily between 2012 and 2019, with 1.5% to 3% of the existing locations closing every year.

Figure 5

Off-Site Locations by Year Within Study

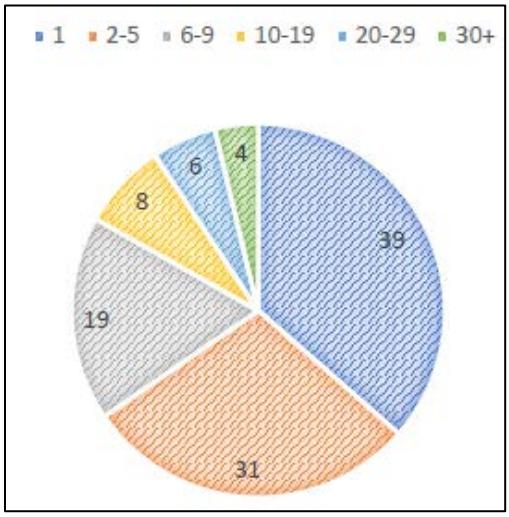


A much clearer understanding of the trends comes from looking at how many locations were closed by the same institutions within the study window. While thirty-nine institutions closed only one of their off-site locations, at least four institutions closed more than 29

locations each. Figure 6 shows the number of off-site locations closed by institutions that closed at least one off-site location between 2012 – 2019. More than one-third of these institutions only closed one off-site location throughout the study period. More than one-quarter of these institutions closed between two and five off-site locations. Only ten (9.3%) of the institutions closed more than nineteen off-site locations and only four (3.7%) closed more than 29. Surprisingly, those four institutions were responsible for 22.1% of the closed locations. This helps to explain how 258 (70.7%) of our 365 institutions maintained their full complement of off-site locations through the years of the study. The above trends from public, four-year colleges and universities were consistent with the overall trends in off-site location closure discussed in chapter one.

Figure 6

Off-Site Locations Closed per Institution with At Least One Closure



Institutional Characteristics Associated with a Higher Risk

The second research question examined which institutional characteristics could be associated with a heightened risk of closing an off-site location. The previous section presented

the descriptive statistics on the independent variables and provided context for why we examined these institutional characteristics. Table 12 presents the results of the fixed effect panel regression model designed for this purpose. The model significantly explained the variance of off-site location closure ($F = 16.60$, $p < 0.001$).

Of the independent variables examined, the log of the number of open off-site locations was significant at the .001 level and had a coefficient of 0.3901. This indicates that for every 1% increase in the number of open locations, an institution would be 0.0039 more likely to have a closed location. Revenue from local sources in thousands of dollars per FTE is significant at the .05 level with a coefficient of - 0.0152, indicating that an increase of 1 in thousands of dollars per FTE would make an institution 0.015 less likely to close an off-site location. Lastly, revenue from private sources in thousands of dollars per FTE was significant at the .01 level with a coefficient of 0.0081. This indicates that every increase of 1 in thousands of dollars per FTE would make an institution 0.008 more likely to have a closed off-site location. The variable from this model most noteworthy in its insignificance is the percentage of students not taking any distance courses. I discuss the reasons for this in the next chapter.

Table 12

Regression of Independent Variables on Closure

Closure	Coefficient	Robust Std. Err.	t	P>|t|	[95% conf. interval]	
Open_Log	.3901	.0602	6.49	0.000**	0.269	0.512
Tuition1KFTE	-.0089	.0118	-0.76	0.453	-0.033	0.015
State1KFTE	-.0096	.0049	-1.98	0.054	-0.019	0.000
Local1KFTE	-.0152	.0065	-2.33	0.025*	-0.028	-0.002
Pvt1KFTE	.0081	.0009	8.89	0.000**	0.006	0.010

(table continues)

Closure	Coefficient	Robust Std. Err.	t	P>|t|	[95% conf. interval]	
No_Dist	-.0004	.0007	-0.49	0.626	-0.002	0.001
Percent_Admit	.0002	.0006	0.31	0.761	-0.001	0.001
ln_enroll	-.0597	.0713	-0.84	0.407	-0.204	0.084
Percent_W	-.0022	.0025	-0.88	0.385	-0.007	0.003
SFR	-.0099	.0053	-1.86	0.070	-0.021	0.001
_cons	.3979	.7479	0.52	0.606	-1.111	1.907
sigma_u	0.4238					
sigma_e	0.2239					
rho	0.7818					

*Significant at the .05 level. **Significant at the .01 level

Table 13 presents the results from a fixed effects panel conditional logit model also designed to examine which institutional characteristics were associated with a heightened risk of closing an off-site location. This conditional logit model omitted eight institutions (184 observations) because of all positive or all negative outcomes. This loss left the model with 357 institutions and 2,736 observations over the eight years. The model significantly explained the variance of off-site location closure (Prob > chi2 = 0.000).

Table 13

Conditional Logit of Independent Variables on Closure

Closure	Odds Ratio	Robust Std. Err.	z	P>|t|	[95% conf. interval]	
Open_Log	2.66	0.3824	6.49	0.000**	2.009	3.528
Tuition1KFTE	0.86	0.0482	-2.65	0.008**	0.773	0.962
State1KFTE	0.89	0.0493	-2.08	0.038*	0.800	0.994
Local1KFTE	4.09	3.1121	1.85	0.064	0.920	18.175
Pvt1KFTE	1.08	0.0164	5.14	0.000**	1.049	1.113
No_Dist	1.01	0.0082	0.77	0.443	0.990	1.022
Percent_Admit	1.00	0.0109	0.04	0.968	0.979	1.022

Closure	Odds Ratio	Robust Std. Err.	z	P>|t|	[95% conf. interval]	
ln_enroll	1.40	0.2491	1.88	0.060	0.987	1.983
Percent_W	1.02	0.0075	2.15	0.031*	1.001	1.031
SFR	0.95	0.0357	-1.32	0.188	0.884	1.024

*Significant at the .05 level. **Significant at the .01 level

Of the independent variables in this model, the log of the number of open off-site locations is significant at the 0.01 level. The increased odds (OR 2.66, 95% CI: 2.0 – 3.5) of closing an off-site location can be interpreted as an increase of 1 in the logged number of off-site locations would make an institution 1.66 times more likely to close an off-site location. Unlike the OLS regression model, this model contains three significant results in the revenue section. Tuition revenue in thousands of dollars per FTE is significant at the 0.01 level and provides decreased odds (OR 0.86, 95% CI: 0.77 – 0.96) of closing an off-site location. An increase of 1 in thousands of dollars per FTE tuition revenue would make an institution 14% less likely to close an off-site location. State revenue in thousands of dollars per FTE is significant at the 0.05 level and provides decreased odds (OR 0.89, 95% CI: 0.80 – 0.99) of closing an off-site location. An increase of 1 in thousands of dollars per FTE of state revenue would make an institution 11% less likely to close an off-site location. Once again rounding out the significant financial variables is private revenue in thousands of dollars per FTE. Private revenue was significant at the 0.01 level and provides increased odds (OR 1.08, 95% CI: 1.05 – 1.11) of closing an off-site location. An increase of 1 in thousands of dollars per FTE of private revenue would make an institution 8% more likely to close an off-site location.

Of the remaining variables, only the percentage of White, non-Hispanic students reached a level of significance ($p < 0.05$). The percentage of White, non-Hispanic students

provided increased odds (OR 1.02, 95% CI: 1.00 – 1.03) of closing an off-site location. An institution is only 2% more likely to close an off-site location if their percentage of White, non-Hispanic students goes up by one. Once again, the variable from this model noteworthy in its insignificance is the percentage of students taking no online classes, which I discuss in the next chapter.

Conclusion

This chapter provided a statistical analysis of the dependent and independent variables as well as the results from two models designed to examine institutional characteristics that may contribute to a higher risk of closing an off-site location. The initial descriptive statistics provide the background and necessary frame for the second portion's analysis. In both models, independent variables rose to the level of significance and partially explain the variance in the models. The next chapter will discuss these results, practical implications for applying these models, and areas of future research.

CHAPTER 5

DISCUSSION

Introduction

The aim of this study was to understand the nature of location closures for public, four-year colleges and universities between 2012 and 2019 and then to determine if there were any institutional characteristics that would provide insight into off-site location closures over the time period. The Department of Education's closed school list provided an interesting problem to examine when combined with specific variables available from the Integrated Postsecondary Education Data System (IPEDS) and analyzed through the lens of Resource Dependence Theory (RDT). Since each location on the closed school list is identified by an OPEID, we assume that instruction could have occurred or was occurring at these locations. This chapter provides a brief review of RDT, a summary of the findings from each of the models employed, and recommendations for both policy and future research on the subject.

Resource Dependence Theory Review

RDT explains the behavior of organizations through observing interactions with the external environment, analyzing those interactions by how they affect resources needed by the organization, and connecting the resulting resource interactions to organizational decisions. In the context of this study, the organizational decision I examined was whether to close any off-site location (the dependent variable). Appropriately, the independent variables make up the series of resource conditions I examined for correlation with this organizational decision. While this decision (and many of the variables) can be couched in terms of the need for a stable flow

of resources, the adherence of an institution to their mission in terms of access or prestige plays a role in whether they close a location.

Public, four-year institutions are not exclusively about access or exclusively about prestige. This is partially because "serving the public interest is a complicated process; institutions have diverse missions and serve a variety of student and public interests" (Schmidtlein & Berdahl, 2011, p. 74). Access serves the public interest in a more obvious way than prestige. However, some institutions depend on prestige to make access possible. Institutions that experience explosive growth in enrollment incur costs (from that enrollment) that are met with the increased funds generated through tuition (also from that enrollment). In other words, the students' desire to attend a prestigious school drives an additional need for funding that the institution may partially remedy through increased enrollment or access.

The fundamental tension from an RDT perspective then becomes the one presented by Winston as the church and the car dealership (1999). An institution with an access mission may seek to expand to areas where students do not have access to any higher education options. This expansion depends on the interest and cooperation of the local government and populace. The mutually beneficial symbiotic relationship provides higher education access to the citizens of the locality while ideally increasing the income and prestige (in the form of reputation) of the institution. Agreements are put in place for an amount of time that codify this relationship and provide assurances that neither party will back out of the relationship. The institution accepts any prestige or goodwill that comes with offering access but wants to provide that access for the sake of access if possible. A prestige-maximizing institution, on the other hand, opens off-site locations for the prestige available.

The clearest way of thinking of this is through an institution's area of focus for their third mission. A prestige-maximizing institution sets the area of their third mission (discussed previously) as internationally as possible by way of moving away from the local area and through the regional and national communities (Lee et al., 2020). The idea that institutions seeking prestige focus organizational efforts in the same places as prestigious institutions is unsurprising, as we see that pattern repeatedly crop up in higher education in the form of best practices in every area of an institution. Examining institutional focus for the third mission may add an important nuance to the suggested case studies in future research.

Summary of Findings

Model 1

The fixed effect panel OLS regression model with standard error clustered around institutions in the same state returned only three significant findings. The first is that the total number of off-site locations is associated with increased chances of closing an off-site location. I have discussed this at length and pointed out that one of the reasons for limiting the number of institutions in the study was that institutions without an off-site location have no probability of closing one.

The second significant finding was that an increase in local funding reduces the expectation of off-site location closure. This also makes intuitive sense, given some thought to the reasons an institution might be receiving local funding. An off-site location is often the result of a partnership between an institution and a nearby municipality. This partnership can involve a financial commitment from the municipality, who benefits from a more educated local populace, an increase in the number of local jobs, and potentially a better tax base and school

system (directly funded by the tax base) because of the presence of an off-site location. These benefits only remain as long as the institution maintains the off-site location, which provides the municipality with the motivation to continue providing local funding for the institution.

The third, and most surprising, significant finding was that an increase in private funding leads to an increased chance of off-site location closure. This initially seemed counter-intuitive, as increased funding seemed like something that would be necessary to maintain off-site locations. However, donors often earmark private donations for spending in a certain way or in a certain location. A donor wanting to place their name on a building wants that building to be somewhere that they can see it when they come to campus for a home game. In addition, larger donations may lead to increased costs in and around the main campus, unintentionally drawing resources away from off-site locations.

Additional funding from any source should enable an institution to maintain an off-site location. These two findings together may say more about which institutions are receiving local and private funding. As discussed above, institutions focused on access sign agreements with localities to place off-site locations. These agreements often provide additional funding for the institution, either in the form of natural resources or local spending on university services. Institutions seeking prestige seek out private funding but may also close off-site locations because they no longer fit the primary focus of the institution. The institution's mission may drive these correlations instead of the funding. I have provided studies in the future research section that could examine this phenomenon more closely.

Model 2

The fixed effect panel data conditional logit model with standard error clustered around

institutions in the same state returned five significant results with varying levels of significance and odds ratios that increased with significance. The first, as with the OLS model, was that opening an off-site location directly increases an institution's odds of closing an off-site location. As above, this was a limiting factor for determining participation in the study, but I should note that an institution is 166% more likely to close an off-site location if they increase their number of locations by 1%.

The second and third significant findings were that an increase in tuition funding or state funding reduces the likelihood of closing an off-site location. This makes sense, as these forms of funding are less restricted revenue, dependent on the number of students who attend, and spent as needed. Since an off-site location ideally attracts students who are not otherwise attending an institution, increasing the amount of tuition or state funding received per FTE would encourage an institution to maintain the population located at the off-site location while providing the necessary surplus to maintain the location.

The fourth significant finding was identical to the third finding of the OLS model, that an increase in private funding leads to an increased chance of closing an off-site location. As discussed above, this was a surprising finding, but makes sense in the context of how these funds can be spent and the presumption that an institution is seeking prestige as part of its mission, if not actively shifting from a focus on access to one on prestige.

The fifth significant finding was that an increase in the percentage of White (non-Hispanic) students at an institution is associated with an increased expectation to close off-site locations. While not an extraordinarily strong correlation, it still fits into my discussion of access in meaningful way. The closure of an off-site location can limit access to an institution, as

discussed in chapter 2, and off-site locations focused on access tend to serve populations of underrepresented students. There is ambiguity as to which direction this relationship is likely to move because of this. If an institution closes an off-site location that serves underrepresented populations, they are likely to increase their overall percentage of White (non-Hispanic) students. I have included a recommendation for a study related to this in the future research section.

Strength of Combined Models

I should first note that, while tuition and state funding were not significant results in the OLS model, both may have been if I excluded the institutions there that I excluded in the conditional logit model. As noted in the descriptive section of chapter 4, the state funding minimum was $0 per FTE. The Colorado TABOR system was responsible for these instances, as Colorado provides state funding to institutions in the form of grants that follow the student categorizing the funding in as tuition funding instead of state funding. The conditional logit model ended up excluding Colorado institutions because of all negative or all positive results, which would move the tuition funding levels down and the state funding levels up on average. The exclusion of Colorado schools from the OLS regression may bring the models closer together. While it might have improved the results, the relative closeness in state funding significance was sufficient to trust the strength of the models without selectively removing additional institutions to improve the results.

The two results that achieved the highest level of significance in the study were the log of the number of open institutions and private funding. Both variables achieved that level in each model, indicating that these variables are strongly correlated to the closure of an off-site

location. The model similarities buttress the strength of each model with the other model aside from the explainable differences.

Surprisingly Insignificant

When I began this study, I ran the idea by multiple coworkers and colleagues. I would describe the study to my colleagues in higher education and talk about the fact that an extensive number of locations closed between 2012 and 2019. Invariably, the first reaction from everyone was that the strong shift to online learning would be the most obvious reason for closing off-site locations. While online courses were ubiquitous in the conversation, partially because of Massive Open Online Courses (MOOCs), the number of students taking at least one online course had only reached 33.5% (Allen & Seaman, 2014). The median percentage of students taking at least one online course amongst the public colleges and universities in this sample was only 24.1%. The median percentage of students taking at least one online course progressed from 23.1% in 2012 to 36.9% in 2019. This indicates a steady increase in the number of students participating in online courses in public, four-year institutions. Combined with the anecdotal evidence from previous conversations, I anticipated that I would see a considerable number of closures result from increased online learning.

However, percentage of students taking no online courses (the complement of students taking at least one online course) turned out to be insignificant, with a p value of 0.626 in the first model and of 0.443 in the second model. The high percentage of schools that did not close an off-site location (70.7%) during the study window, combined with the fact that nearly every school was decreasing the percentage of students taking no online courses could have limited the significance of this result. In the future research section, I suggest a study of institutions

that closed an off-site location across classifications which may find a significant result related to this variable.

Responding to the Research Questions

Question 1

The first research question asked for a description of trends in the closure of off-site locations among public colleges and universities. Institutions in the study closed a total of 646 off-site locations between 2012 and 2019. Of the 365 institutions in the study that had at least one off-site location throughout the study period, 258 (70.7%) of the institutions did not close any off-site locations. Thirty-nine of the remaining 107 institutions only closed one off-site location over the eight years and another 50 institutions closed between 2-9 off-site locations. Only 18 of the institutions involved in the study closed 10 or more off-site locations over the course of the study and those 18 closed 400 off-site locations. The idea that 62% of the closures came from 5% of the institutions drives a suggestion in the future research section that a series of case studies centered around that list of eighteen institutions would prove valuable.

Question 2

The second research question asked for institutional characteristics associated with a heightened risk of closing an off-site location. Of the characteristics examined in this study, there are only two that were significantly correlated with a heightened risk of off-site location closure. Both opening off-site locations and increases in private funding increase the risk of closing off-site locations. Increases in tuition funding, state funding, and local funding are correlated with a decrease in the likelihood of closing an off-site location, although not as

usefully as I hoped, which I discuss below.

Recommendations

Significance, Practicality, and Usefulness

The number of results that reached statistical significance was an interesting facet of the research. However, one of the difficulties with couching variables in terms that make the coefficients easier to read is that the change needed to affect the dependent variable becomes, at best, impractical. While an institution wants to know what they can do to improve the odds of keeping an off-site location open, the recommendations as I would usually contextualize them are not useful. Increasing your local funding variable by 1 to reduce the likelihood of closing an off-site location by 0.015 sounds moderately reasonable until you remember that the variable is couched in terms of thousands of dollars per FTE. This means that to get even that small of an effect, you would have to raise local funding by $1,000 per full-time student. Given that this median relative to inflation moved a total of 0.02 (or $20 per FTE) from 2012 to 2019, planning for a $1,000 per FTE increase is not in the realm of practicality.

The same difficulty exists with all the financial variables. Changing any of these variables encounters the same impracticality, such that it may be impossible to apply those recommendations. The only specifically practical recommendation I can make with these coefficients and variables is a general awareness that opening an off-site location is one of the most efficient ways to increase your likelihood of closing an off-site location.

That does not mean that we cannot take any recommendations from the study. From a public university perspective, these results indicate that the mission of the institution is vitally important to the decision to open and maintain off-site locations. As pointed out by Ryan,

"academic drift in search of prestige is believed to underserve the demands of students while bringing about higher education systems that are less affordable and accessible" (2021, p. 41). An institution focusing on prestige is more likely to seek out donations and alternate funding sources to present the best view of their campus and programs. That view is easier to maintain when that an institution is only maintaining appearances in one location. Since private funding significantly increases the likelihood of off-site location closure in both models, we can understand that institutions seeking prestige are more likely to allow the closure of off-site locations to focus on the main campus.

The alternate focus for an institution is one of access. As discussed above, one of the main reasons to build off-site locations comes in the form of access for students who may not otherwise be able to participate in higher education. An access mission, as represented by the significance of the local and state funding variables and their effect on decreasing the likelihood of closing an off-site location, promotes both the building and maintenance of off-site locations. While striving for prestige and an access mission are neither dichotomous nor exclusionary uses of resources, the tendency is for an institution to pursue one or the other (Warshaw et al., 2020; Weisbrod et al., 2008a). This tendency appears true enough that prestigious institutions are often synonymous with increased selectivity. Institutions that are considering opening an off-site location should carefully understand how it relates to their mission and whether it will contribute to the overall goals of the institution.

Coming back to RDT and how it affects these tendencies, I am forced to focus on the same truth that often disappoints university first-year students in my classroom: Nearly everything comes back to money. An institution that can focus on an international third

mission, build reputation through research, and demonstrate widespread student success in the process can charge more for the experience of attending their institution. That institution can also turn away students that are less likely to be successful, increasing their own success rates and reputation and driving the circle of increased funding favorably forward. An institution that cannot do these things can still open its gates wider, maximizing the current levels of tuition and state revenue by increasing the number of students attending. In both cases, money drives the organizational mission in a way that I wish was not required.

We can then speculate that the closure of off-site locations ties back into resource dependence and the hierarchy of prestige. As we compare institutional prestige with institutional access, we can see that institutions on the lower end of the prestige spectrum find themselves depending more on increased enrollment from any source, whereas institutions with more prestige may be able to trade off-site location enrollment for a pressing need to increase retention. An institution's prestige (by virtue of changing interactions with external stakeholders) changes their ability to walk away from an off-site location, which is consistent with the previously listed tenets of RDT.

The findings, when reviewed through that lens, present the possibility that these correlations may be telling us more about which type of institutions close off-site locations. An increase in private donations may indicate a prestige-maximizing institution, which would be more likely to close off-site locations. Both the directionality of these findings and whether seeking prestige is a moderating variable in these models will make excellent future research.

RDT and Practical Applications

To what end, then, should this examination be applied? An institutional examination of

these results provides context for discussing institutional mission and long-range planning. As stakeholders in university administration begin outlining five- and ten-year plans, results from this study can clarify a context within which to situate those plans. Should the mission pursued by the institution be reconsidered? Are the current off-site locations still meeting the needs of the institutional mission or are there better methods of deploying the resources being funneled to those sites? Are there new opportunities for off-site locations that will build meaningful resource pools while achieving the institutional mission? These important considerations prepare institutional leadership for planning sessions while providing context for their forthcoming vision.

Policy Application

Policy makers, as well, should consider the differences in institutional mission when creating policy. There is no large state system where every public institution will achieve and maintain very high research activity. In contrast, attempting to address educational deserts within the state through mandating additional locations for public institutions inevitably leaves at least some group of people feeling hurt (Clark & Tullar, 1995; Pennucci & Mayfield, 2003). If a hypothetical policy maker focuses on finding ways to increase tuition revenue for the purpose of reducing state revenue spent on the college, opening an off-site location may be suggested as part of that plan. The results of this study imply that an off-site location opened outside of the mission focus of the institution could be at risk of closure sooner rather than later.

In approaching off-site locations from those that are closing, it is important for policy makers to remember that institutional missions may change, sometimes in response to policy. If a state legislature decides that all institutional funding is going to depend on an institution's

graduation rate, many institutions could shift their focus to supporting the success of their students. It may also cause them to limit the number of students that they enroll. Both moves would make sense under such a policy. However, if the policy was enacted to increase degree attainment in the state, policy makers may find that institutions graduate the same number of students (or even fewer) at a higher percentage rate. While the consideration of mission will help with both the development and application of policy, it will often lead to further questions, just as this study does.

Future Research

One of the things that we come away from a research project with is more questions than when we entered the project. Fortunately, this project has clarified those questions into opportunities for future research, suggestions for which are discussed below.

Alternative Classifications

Individual Classifications Using Appropriate Variables

I chose the variables for this study because the study focused on public, four-year colleges and universities and because their selection aligned with the relevant findings of prior research. The closed school list contains closure data for institutions of every classification and level. Any of these classifications could be turned into a research study on closure based around that specific classification, provided that the variables chosen were relevant to that classification.

A study on two-year public institutions would inevitably account for the mission of open access, which would make closures potentially more difficult to explain. However, a researcher

could consider population changes as a driver of location closure. In addition, researchers may have a more difficult time defining off-site locations in a system where every site is targeted to the local area's needs. In this study, local funding would be an important variable to maintain and define clearly.

A study on four-year private institutions could add a variable related to tuition-discounting, a variable related to return on investment, and even considerations regarding mergers with other institutions to maintain an off-site location if it is mission-good. A study on for-profit institutions would definitely focus on return on investment as well, since part of the mission, perhaps even most of it, would be money. These institutions could all be examined through the lens of RDT to understand how their financial interactions with external stakeholders may affect their off-site locations.

While the independent variables would be different, a study on four-year, private institutions, two-year public institutions, or two-year and four-year for-profit institutions are all possible with the given data. The dependent variable in each of these cases should remain as off-site location closure, which would limit each study, as it has in this one, to institutions who have or had off-site locations.

Across All Classifications Using Common Variables

One of the variables that I think could still be of interest, despite its lack of significance in this study, is the percentage of students taking no online courses. Anecdotally, the number of closures from the for-profit University of Phoenix and their shift to an almost fully online college seems like it would produce a very different result, which may be part of why initial discussions led my colleagues to believe that variable would be significant. While the study

would not be as exploratory, it would be possible to look at that percentage as the independent variable across all classifications between 2012 and 2019 (or a larger range of years) against off-site location closure as the dependent variable.

A study across all classifications also provides the opportunity to use mission as a variable. Operationalizing mission as a specific variable will be difficult, but a linguistic analysis of mission statements would be one place to start. A researcher could divide the study between institutions that mention access in their mission statement and those that do not. A more thorough method would be to start with Bastedo and Gumport's (2003) article on mission differentiation and academic stratification and work through the literature to determine practical indicators of the dichotomous missions before grouping institutions.

Alternative Methodologies

Institutions with Closed Locations

Instead of focusing on all institutions in the data set that have off-site locations, it might be interesting to limit the data to institutions that closed off-site locations. Researchers could limit these across multiple classifications or could remain within a limited classification focus although it is my belief that the study would suffer from not having comparable institutions that did not close institutions across the same time. The limitation on the study increases when there is not a control group. In this study, the group of institutions who had an off-site location in the study period but did not close an off-site location during that time serve as the control group. A comparison of only institutions who close an off-site location might see little to no variation in independent variables, even of those variables turn out to affect closure in some way.

Case Studies of Institutions Closing Multiple Locations

There are a small number of institutions (18) that closed more than ten institutions across this time. A case study of any of those institutions would prove to be a valuable addition to the literature and may provide guidance as to which variables would be important to look at in future studies like this one. A researcher interested in finding schools in this category would need to download the closed school list and sort it by school to find the institutions with the highest number of closed locations.

Racial Demographics as the Dependent Variable

As mentioned above, there is a chance that the correlation between the percentage of White (non-Hispanic) students and the increased chance of closure of off-site locations may indicate causality in a different direction. It would be interesting to see whether the closing of off-site locations (especially those intended to increase access) reduces the percentage of underrepresented students at institutions. One way of examining this would be to have institutional closure set as an independent variable alongside private funding and state funding to see if there is any correlation between changes in these and the percentage of race at an institution. A researcher examining this topic would want to include demographic analyses of the area around the institution as well, to make sure that the changes are not directly connected to trends in demographics. That said, I am certain there are capable hands and minds that could manage any of the above studies.

Final Thoughts

I want to take the time to reiterate that practitioners should apply this type of research

carefully. As researchers, we want to be able to apply our findings in practical ways that allow us to make important decisions in our roles as college administrators. Applying these findings too broadly may lead someone to look at an off-site location with the possibility that it is going to close because of this variable or that variable. As a result, we create a self-fulfilling prophecy and a site that may have been providing access to students otherwise unable to attend our campus will be lost when it never should have been in danger.

The careful application of this model to an extension center an institution plans to open can lead to deciding that the risk of closure is too high to begin spending resources on the project. The institution finds itself perpetually in a position where the theory surrounding off-site locations creates the same problem Schrödinger presents with a cat in a box. The institution cannot know for sure if the location will remain open, but a deeper understanding of its mission helps the institution know whether it should be interested in what is in the box.

Within the framework of RDT, maintaining the privacy of the consideration of resources mitigates the inherent dangers of the process. An honest assessment of an institution's mission and sources of funding should be a major part of any decision to open or close an off-site location. Institutions can and should use this research in that context, allowing organizational leaders to approach the decision-making process as well-informed as possible.

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