

SAVE NOW, PAY LATER? THE EFFECTS OF ADJUNCT INSTRUCTORS ON  
PERFORMANCE-BASED FUNDING

By

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May 6, 2022

This dissertation is dedicated to my loving family, without whose support I never would have been able to complete this journey. This is also dedicated to the memory of my father, Bob Campbell, who I have felt with me every step of the way.

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## ABSTRACT

This study examined the connection of faculty status and impacts on student success metrics and performance-based funding outcomes. While the topics of adjunct faculty and performance-based funding are well documented in the available literature, there does not seem to be a study that connects the two issues to determine if faculty status impacts performance-based funding outcomes. The literature does show that the under support of adjunct instructors across higher education institutions may contribute to diminished student success outcomes, which are significant components of performance-based funding. This study utilized institutional data for the 22 public, degree-granting higher education institutions in the state of Tennessee, a state that has had performance-based funding in place since 1979 and utilized an aggressive model during the years of this study. The study utilized three separate analyses of covariance (ANCOVAs) to determine if there was a statistically significant difference in retention rates, graduation rates, and points earned through the performance-based funding formula at 2- and 4-year higher education institutions in Tennessee based on the percentage of adjunct instructors. Institutional data were collected for the 2010-2011 through 2018-2019 academic years, and averages of each variable were used for the tests. The results of the tests revealed that there were no statistically significant differences in any of the population means. However, faculty status was a significant covariant ( $p = .239$ ) for graduation rates, suggesting that approximately 24% of the variation in graduation rates may be attributed to faculty status.

*Keywords:* adjunct faculty, student success outcomes, performance-based funding, analysis of covariance

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## **Chapter I**

### **Introduction**

Over the last two decades, higher education has become increasingly reliant on adjunct instructors to teach undergraduate courses. Colleges and universities rely on this contingent workforce as a cost-saving measure; many adjunct faculty are paid low rates and do not receive institutional benefits (Ran & Sanders, 2020). Much research has been conducted on the topic of adjunct instructors, from the job satisfaction of the instructors themselves to the possible effects of their instruction on student success metrics such as retention and graduation rates. Research studies have shown that adjunct instructors are under supported by their institutions, with most not provided office space, technology, or professional development opportunities (Ran & Sanders, 2020). Perhaps because of the low levels of support adjunct faculty receive from their institutions, studies have shown that students in classes taught by these instructors are more likely to have lower retention and graduation rates (Ehrenberg & Zhang, 2005; Umbach, 2007; Xu, 2019). However, a connection that has not been made in the existing literature is the possible impact that an overreliance on adjunct instructors could have on institutions in states that utilize performance-based funding for appropriations.

Performance-based funding relies heavily on student success metrics, such as retention and graduation rates, leading institutions in states that utilize this model to pay particular attention to initiatives that will improve these numbers. However, with a growing body of research showing the negative correlation between increased adjunct numbers and lower student success outcomes, the increasing reliance on a less expensive professoriate may prove to be short-sighted. Adjunct instructors are often utilized as a cost-saving strategy, but is an

overreliance on and under support of adjuncts actually costing universities money in state appropriations?

This problem can be studied by examining data on both the university and state levels. Not only is this a problem that can be researched, it is also a problem that could have significant implications for higher education leaders. Current research has established a negative correlation between adjunct instructors and student success measures but has not examined the possible effects that this could have on performance-based funding. Since a considerable portion of performance-based funding is connected to student success metrics such as graduation rates and retention, higher education leaders should be aware of short-term cost-saving strategies that may actually be losing their institutions money in the long run.

### **Statement of Purpose**

The purpose of this study was to examine whether an increase in adjunct instructors teaching undergraduate courses correlates with a reduction in state appropriations earned through student success metrics of a performance-based funding formula. While there is limited evidence that adjunct instructors positively affect student subsequent enrollments (Bettinger & Long, 2012), studies more commonly reveal a negative correlation between adjunct instructors and student success outcomes, which is largely attributed to the lack of institutional support and resources provided for adjunct instructors (Hilton & Plummer, 2013; Ran & Sanders, 2020; Umbach, 2007; Xu, 2019). This study will build upon the work of previous researchers to examine if a negative effect on student success outcomes translates to a reduction in state appropriations through the performance-based funding formula. Since performance-based funding models differ across states, it is important to note that this particular study will focus on public higher education institutions in the state of Tennessee. The participants of this study will

be the public higher education institutions across the state of Tennessee, which includes 13 community colleges and nine 4-year universities. These institutions represent a diverse population of the state, with over 228,000 students enrolled in both urban and rural settings (NCES, n.d.).

### **Research Questions**

Three research questions were used to guide this study. These questions were based on existing research that shows a negative relationship between the number of adjunct instructors and the student success metrics of retention and graduation rates, with an additional question focused on performance-based funding points. The research questions for this study were as follows:

1. When controlling for institution type, is there a significant difference in student retention at 2- and 4-year higher education institutions in Tennessee based on faculty status?
2. When controlling for institution type, is there a significant difference in student graduation rates at 2- and 4-year higher education institutions in Tennessee based on faculty status?
3. When controlling for institution type, is there a significant difference in the number of points received through the performance-based funding formula based on faculty status?

### **Overview of Methodology**

Secondary data for this study were collected through the Integrated Postsecondary Education System (IPEDS) and the Tennessee Higher Education Commission (THEC). Using an ex post facto design, the data were collected for academic years 2010-2011 through 2018-2019, and averages for the 9-year period were used for analysis. The data were analyzed using three separate analyses of covariance (ANCOVAs) to determine if there were statistically significant

differences in the adjusted population means. The independent variable for each question was institution type, a dichotomous variable with the levels of 2- and 4-year institutions. The dependent variables for each test were retention rates, graduation rates, and performance-based funding points, respectively. The covariate for each test was the percentage of part-time faculty at each institution. It was hypothesized, based on the existing literature, that there would be a significant difference in the means for all three tests.

### **Significance of the Study**

This study builds upon existing literature that largely establishes a negative correlation between adjunct instructors and student success metrics. Many of these studies have established that adjunct instructors receive inadequate support from their institutions in terms of office space, technology, professional development, and mentoring opportunities (Curtis et al., 2016; Meixner et al., 2010; Parker, 2018; Ran & Sanders, 2020). This lack of support and training is one of the reasons that students taught by adjunct instructors are more likely to have lower retention and graduation rates than their peers (Ehrenberg & Zhang, 2005; Ran & Sanders, 2019). One study did note a positive correlation between adjunct instructors and student subsequent course enrollment, which was mainly found in academic departments closely tied to occupations, such as engineering and nursing (Bettinger & Long, 2010). This study will be the first to connect the potential negative effects on student outcomes to the number of points received through the performance funding model.

A great body of research exists on performance-based funding, covering topics such as its impact on institutions, the unintentional outcomes, and overall effectiveness. Performance-based funding begins with the state determining certain factors of student success that are deemed critical, such as retention and graduation rates. Next, higher education leaders focus their efforts



on improving their programs and resources to better support these student success metrics. Hopefully, this strategic focus will lead to an increase in state appropriations (Larocca & Carr, 2020). The existing literature does not examine the effect that faculty status may have on performance-based funding, but rather the perceptions of instructors based on tenure status to performance-based initiatives. Since they have more job security and protections, tenured faculty are more likely to voice resistance to initiatives tied to performance-based funding, whereas non-tenured and part-time faculty are less likely to object due to their more tenuous employment status (Larocca & Carr, 2020).

Furthermore, performance-based funding has been shown to lead to possible grade inflation since such emphasis is placed on student success metrics, leading to questions of academic integrity (Unintended Impacts, 2013). Studies have also shown that adjunct instructors may give higher student grades based on the assumption that higher grades lead to better student evaluations, something that adjunct instructors are more reliant on due to their more tenuous positions (Johnson, 2011; Kezar, 2019). Institutions in performance-based funding states that use high numbers of adjunct instructors may not even be aware of the potential effects that these two factors may have on the integrity of their academic grades.

This study will be of particular interest to higher education leaders because many universities rely on the employment of adjunct instructors as a cost-saving measure. If an overreliance upon adjunct faculty coupled with little support and resources for them to be effective in their teaching relates to a decrease in state appropriations, higher education leaders may want to reevaluate their priorities. More emphasis may need to be placed on supporting adjunct instructors so that they can better serve their students and contribute to the overall success of the university. While some institutions are beginning to see the benefit of including

adjunct faculty in department and university initiatives outside of the classroom, such as assessment (Scott & Danley-Scott, 2015), they still seem reluctant to invest resources for the support and development of adjunct instructors. The literature over the last two decades has established the poor working conditions and low morale of adjuncts as well as the negative effects on student success, yet less has addressed this issue at the institutional level. Perhaps if a connection can be made to the overall financial health of the university, leaders will begin to take action.

### **Definition of Key Terms**

This study uses various terms that may be familiar to many in higher education, but could possibly have different meanings depending on their context. For the purposes of this study, the key terms used are defined as follows.

1. 2-Year Institutions – For the context of this study, 2-year institutions are public community colleges in the state of Tennessee. The highest degree offered by these institutions is an associate's, although many offer certificate programs as well. All of the community colleges included in this study are provided oversight by the Tennessee Board of Regents (TBR).
2. 4-Year Institutions – The 4-year institutions included in this study are public universities in the state of Tennessee that offer associate's, bachelor's, master's, and/or doctoral degrees. Some of these institutions were previously part of TBR, but now operate as locally governing institutions with their own boards. The remaining 4-year institutions are part of the University of Tennessee College System.

3. Adjunct – An individual hired in a purely instructional capacity by a higher education institution to teach on a contingent basis; not on the tenure track. These instructors are also referred to as part-time and contingent.
4. Full-time faculty – Full-time, tenure-track instructors whose primary role is instruction at higher education institutions.
5. Graduation Rates – The percentage of students who graduate within 150% of normal time. For 2-year institutions, this would reflect students who graduated within 3 years; at 4-year institutions, it would reflect students who graduated within 6 years.
6. Retention Rates – The percentage of first-time students who were retained from the spring to fall semester at a higher education institution.
7. Performance-Based Funding Points – The number of points earned by higher education institutions through a complex formula that is based on outcomes. Depending on the state, performance-based funding may account for a small percentage of state appropriations or a significant proportion. Performance-based funding is also sometimes referred to as outcomes-based funding.

## **Chapter II**

### **Synthesis of the Research Literature**

There is a wealth of information on the potential effects that both adjunct faculty and performance-based funding have on student success. However, there do not appear to be studies that attempt to show a correlation between faculty status and performance-based funding appropriations even though these two issues appear to share similar institutional and student learning impacts that could potentially exacerbate their effects. This chapter will provide an overview of these issues and show the possible connections between them. First, conceptual and theoretical frameworks are presented, followed by an overview of the literature on adjunct instructors. Then, an overview of the literature on performance-based funding will be presented, followed by a synthesis of the two topics and how they relate. Finally, gaps in the literature will be presented.

#### **Theoretical Frameworks**

When examining the existing literature on performance-based funding, it is nearly impossible to not mention neoliberalism. The concept of neoliberalism is not new, nor are its applications to higher education policy and practices. It is important to note that neoliberalism is a broad concept and may have different implications depending on the context, region, and time that it is applied (Kezar et al., 2019). However, broadly speaking, it is a political and economic concept that mostly applies to the idea of individual freedoms and an emphasis on free market economics (Tight, 2019). An interesting contradiction of sorts is that, in the United States, neoliberal thought and policies are more aligned with neoconservative groups, which may be why performance-based funding is more likely to be implemented in states with Republican leadership (Alshehri, 2016; Dougherty, 2018; Hagood, 2019; Umbricht et al., 2017; Ziskin et al.,

2018). From an educational perspective, neoliberalism refers to the corporatization of higher education, leading to increased competition among colleges and universities and a shift in viewing students as customers rather than learners (Kezar et al., 2019; Slaughter & Rhoades, 2004; Tight, 2019).

Since the late 1970s, higher education in the United States has slowly shifted as neoliberal ideals have taken root (Kezar et al., 2019). As neoliberal practices have become more ingrained in higher education, the foundations of academia have shifted from focusing on intellectual curiosity and the pursuit of learning to more performative measures (Tight, 2019; Watermeyer & Olssen, 2016; Ziskin et al., 2018). This rise in neoliberal practices coincides with an increased dependence on contingent faculty, diminished student learning outcomes, and more competition among institutions for funding and students (Kezar et al., 2019; Slaughter & Rhoades, 2004; Tight, 2019).

Neoliberalism is closely tied to the issues of both adjunct instructors and performance-based funding. As higher education has become more corporatized and competitive, colleges and universities have had to adjust their practices in order to survive, especially those located in states with performance-based funding models. This has led to an increase in contingent instructors as a cost-saving strategy, as well as a focus on performative metrics such as retention and graduation rates that earn points on the state funding formula. While educational leaders in these states have shifted their focus to these performative and cost-saving measures based on the rise of neoliberal practices, it is feasible that their lack of emphasis on support structures for adjunct instructors is actually costing them money in the long run.

While the issues of an overreliance on adjunct instructors and their possible impacts on performance-based funding student success metrics are rooted in the concept of neoliberalism,

this issue can also be examined through the lens of game theory. First introduced as an economic theory, game theory explains economics as a game with players, agents, and payoffs (Von Neumann & Morgenstern, 1944). This individualistic approach to economic theory posits that the strategic decisions made by one player will influence the decisions made by other players of the game. A main characteristic of this theory is that it assumes economic rationality among the players, meaning that they will make strategic and informed decisions with the goal of earning their desired payoff (Ross, 2019). Game theorists use the information available to them about the “game” to determine the possible payoffs based on the decisions they make (Ross, 2019).

When considering performance-based funding, educational leaders could utilize a game theory approach to determine which decisions may impact the outcomes that are measured through the funding formula, such as graduation rates. They may consider all of the factors that impact student graduation rates and determine what could be changed to increase the payoff, which in this case is to raise the rates. Since many studies have provided evidence that higher numbers of adjunct instructors have a negative impact on student graduation rates (Ehrenberg & Zhang, 2015; Kezar et al., 2019), leaders may want to see if decreasing the number of adjunct instructors would result in a significant enough payoff in the funding formula to offset the cost of hiring more full-time faculty or instituting support structures for their existing adjuncts.

Game theory and neoliberalism, although not normally tied to one another, have several similarities that make them applicable to this study. Both have an individualistic approach that relies on strategy and competition. While the idea of game theory brings to mind frivolous or fun activities, it is much more about the strategy behind decision-making (Ross, 2019). By considering all possible outcomes and payoffs, educational leaders can make better informed decisions. This also allows them to consider not only their own actions but those that may be

taken by leaders of other institutions within their states. Since performance-based funding is highly competitive, leaders want to ensure that they discover the strategy with the highest payoff before their competing institutions do it first (Ross, 2019).

These two frameworks will shape this study in that neoliberalism illustrates the environment in which the performance-based funding game is played; by playing the game more effectively and strategically, educational leaders will have a greater payoff in the competitive higher education landscape. With these frameworks in mind, it is easier to understand the environment that has led to a utilitarian approach to the ever-growing contingent professoriate in higher education and the plight in which they currently find themselves.

### **Who are Adjunct Faculty?**

It is estimated that up to 75% of higher education instructors in the United States are considered adjunct (Kezar et al., 2019; Parker et al., 2018). Universities have become increasingly reliant on this contingent workforce as budgets have grown leaner and have invested less money into full-time, tenure-track faculty and more into part-time, adjunct instructors. Although the cost-saving nature of utilizing adjunct instructors is the main driving force behind this increase, there are other factors to consider as well. In certain fields, such as social work, there are not enough qualified doctoral instructors available to teach in the programs offered, so universities rely on adjunct instructors to teach these courses instead (Fagan-Wilen et al., 2006). Regardless of the reason for their hiring, this new professoriate faces unique challenges that hinder both their own success as well as that of their students and the overall institution. To understand the effects that faculty status can have on overall student success, it is important to first explore who adjunct faculty are and the challenges they face in higher education.

## **Adjunct Faculty Characteristics**

Adjunct faculty are also referred to as non-tenure track, part-time, lecturers, or contingent instructors (Buch et al., 2017; Dolan et al., 2013). Adjunct instructors were initially used for the most part due to their professional knowledge and experience; many adjuncts were considered experts in their fields and were hired for that reason (Eagan et al., 2015). However, over the last two decades, adjuncts have become less of an asset due to their professional experience and more of a cost-saving measure for higher education administrators (Buch et al., 2017; Eagan et al., 2015; Reichard, 2003). Rather than teaching discipline-specific courses related to their professional experiences, adjunct instructors are now disproportionately assigned to teach general education and core classes, especially in academic departments that house higher numbers of core classes such as communication (Kezar et al., 2019; Reichard, 2003).

Adjunct instructors are mostly over the age of 40 and most have a master's as their highest degree earned (Characteristics of Adjunct Faculty Members, 2019; Kezar et al., 2019; Monks, 2009). Most part-time instructors only teach at one institution, on average teaching one to two classes per semester (Characteristics of Adjunct Faculty Members, 2019). As noted by Murray (2019), higher education leaders tend to favor the view of the “happy adjunct” (p. 237) who does not desire full-time employment and simply teaches a few courses each year in addition to working full-time in their chosen field. However, the reality is quite different; the majority of adjunct instructors report that teaching is their primary profession (Murray, 2019). Adjunct perspectives regarding full-time employment have shifted over the last decade; in 2009, 65% of adjuncts surveyed responded that they did not desire a full-time position (Monks). However, in 2019, half of adjuncts surveyed desired full-time, tenure-track employment (Characteristics of Adjunct Faculty Members, 2019). The neoliberal ideal that the free market



will work itself out is challenged by this conundrum of adjunct instructors; as they graduate with their advanced degrees and prepare to enter the professoriate, they are faced with an oversaturated market and very little opportunity for full-time work (Kezar et al., 2019; Murray, 2019).

It is important to note that adjunct instructors, although often viewed through a single lens, are a diverse group of individuals with varying goals and backgrounds. While many adjuncts aspire to teach full-time in a tenure-track position, others are specialists or professionals in their fields and still others are nearing retirement yet want to continue teaching in a part-time capacity (Kezar et al., 2019; Starcher & Mandernach, 2016). When examining issues surrounding adjunct instructors, it is helpful to consider those who are part-time voluntarily and those who are part-time involuntarily, meaning that they desire a full-time position but are unable to obtain one (Eagan et al., 2015). Even though there is still the “happy adjunct” out there, they are becoming an increasingly rare specimen as more contingent faculty join the involuntary part-time majority (Eagan et al., 2015; Kezar et al., 2019; Murray, 2019).

### **Adjunct Faculty Working Conditions**

The less-than-adequate working conditions of adjunct faculty are well documented in the available literature. Across all types of higher education institutions, whether they are private or public, 2- or 4-year, adjunct instructors are notably underpaid for their work with the median pay per course taught being \$2,700 (Buch et al., 2017). Some institutions provide benefits for adjunct instructors who teach a certain number of courses, but most do not (Buch et al., 2017; Fagan-Wilen et al., 2006). In addition to their relatively low pay, adjunct instructors are also provided with little support or resources from their universities. Most adjuncts do not have dedicated office space on campus and, when they do, it is typically a shared space (Eagan et al., 2015; Ran

& Sanders, 2019; Umbach, 2007). Adjunct instructors also rarely receive technological resources from their institutions, such as laptops or software, and are expected to use their own (Ran & Sanders, 2019; Umbach, 2007).

Adjunct instructors report a lack of connection not only with their institutions but with their own academic departments (Ran & Sanders, 2019). Since they are paid per course, many adjunct instructors come to campus to teach and are not involved in other ways; adjuncts typically do not participate in department meetings, assessment practices, or advising (Eagan et al., 2015; Ran & Sanders, 2019; Scott & Danley-Scott, 2015). Because of this overall disconnect, adjunct instructors are less equipped and informed to respond to student needs as they relate to their program of study or university policies and procedures (Ran & Sanders, 2020). It is even possible for adjunct instructors of online courses to not even be located in the same city or state as the institution, leading to an even greater disconnect from their colleagues and students (Buch, 2017; Ran & Sanders, 2020).

In addition to having few resources provided by their institutions, adjuncts also report receiving few opportunities for professional development (Buch, 2017; Dolan et al., 2013). In a 2017 study, 25% of adjuncts surveyed reported that they received no support from their academic departments (Buch, 2017). While 75% of adjuncts reported receiving some support from their departments, it was mostly of an administrative nature, such as access to a copy machine or email service (Buch, 2017). Adjuncts also receive fewer opportunities for professional development or, if these opportunities are available through their university, are unable to participate due to other professional responsibilities (Fagan-Wilen et al., 2006). The main need for professional development that adjuncts express is for assistance with teaching methodologies (Dolan et al., 2015; Fagan-Wilen et al., 2006) and also basic onboarding

information and pedagogical support (Parker et al., 2018). Adjunct instructors note that while initial orientation programs are available when they begin working at an institution, there are few continuing professional development opportunities or mentoring programs available to them (Dolan et al., 2015).

In addition to lacking physical resources and professional connections, adjuncts are also allowed less time to plan and prepare for classes than their tenure-track peers. Just-in-time hiring practices with adjuncts, where they are hired right before the semester begins when full-time faculty cannot cover all offered courses, give adjuncts minimal planning time for their courses (Kezar et al., 2019). Since it is documented that adjuncts typically report receiving little support from their academic departments (Buch, 2017; Kezar et al., 2019; Umbach, 2007), this truncated planning time hurts not only adjuncts but their students as well.

With these noted working conditions, it is not surprising that job satisfaction among adjunct instructors is generally low (Buch et al., 2017; Eagan et al., 2015). Low morale, lack of connection, and precarious employment conditions all contribute to lower levels of job satisfaction, which may lead to adjuncts performing at levels less than what would be possible if they were better supported by their institutions (Eagan et al., 2015; Umbach, 2007). While the plight of adjuncts should be deeply concerning to higher education leaders from an ethical perspective, the potential ripple effects that their lack of support and engagement have on student learning outcomes may be more impactful at an institutional level.

### **Adjunct Faculty and Student Learning Outcomes**

The effect of adjunct instructors on student learning outcomes is well documented in the literature in many different contexts. Notable studies in this area focus on the effect of adjunct instructors on student subsequent course enrollment (Ran & Sanders, 2020; Xu, 2019), retention

(Bettinger & Long, 2010; Xu, 2019), graduation rates (Ehrenberg & Zhang, 2005), and student learning outcomes (Hilton & Plummer, 2013; Kezar et al., 2019). With the rise in neoliberal practices and an emphasis on performative measures for state-appropriated funds, student success measures have increased in importance to higher education leaders. On a broad scale, student success has shifted from a focus on measuring actual learning and has instead become synonymous with retention and graduation rates (Kezar et al., 2019), so the ever-increasing reliance on adjunct instructors could have a direct effect on these metrics.

As previously noted, adjunct instructors are less likely to have office space or technological resources provided to them by the university, which makes them less accessible to their students. Since adjunct instructors are typically not included in university events such as department meetings, they may have limited knowledge about campus policies and procedures like academic plans, advising structures, and financial aid (Ran & Sanders, 2020). This lack of knowledge and accessibility may contribute to the lower student success metrics that are typically associated with students taught by adjunct instructors. Even though students may not be aware of the status of their instructor or fully understand the differences between adjunct and tenure-track, they are still more likely to rate adjunct instructors lower than their tenure-track and tenured peers, mainly due to lack of accessibility and presentation of course material (Fagan-Wilen et al., 2006).

Not only are adjuncts less accessible and perhaps less knowledgeable about campus practices, they are also provided with limited or no opportunities for professional development (Fagan-Wilen et al., 2006). This has led to adjuncts reporting that while they are confident in their content knowledge, they lack the pedagogical skills to effectively teach their courses (Buch et al., 2017; Parker et al., 2018) which leads to these instructors being less likely to utilize active

and collaborative learning practices in their classes (Umbach, 2007). Adjunct instructors have repeatedly voiced their need for more professional development and pedagogical training, but these pleas have gone unheeded for the most part and widespread support of adjuncts is still not a priority at most institutions (Dolan et al., 2013; Fagan-Wilen et al., 2006; Kezar, 2018).

Studies have also suggested that courses taught by adjunct instructors are less academically rigorous and that contingent instructors grade less strenuously than tenure-track faculty (Hilton & Plummer, 2013; Umbach, 2007). Adjuncts tend to spend less time preparing for their classes and typically set lower academic expectations for their students when compared to their full-time peers (Umbach, 2007). When considering that there are rarely evaluation protocols in place for adjunct instructors and they rely heavily on student evaluations for their continued employment, adjuncts may set less strenuous academic standards due to the perception that better grades lead to better evaluations (Bettinger & Long, 2010). Further, adjunct instructors are hired on a semesterly basis and have very little job security. Some studies have called into question the academic freedom allowed to adjunct instructors in their courses due to the precariousness of their employment; if they have consistently low grades or poor student evaluations, it could lead to them not being hired back the next semester to teach (Murray, 2019).

In regards to retention, studies have shown evidence that students enrolled in introductory courses taught by adjunct instructors are less likely to enroll in subsequent courses in those fields (Ran & Sanders, 2020; Xu, 2019). An exception to this was found in a study in which a positive correlation was found between students enrolled in introductory courses taught by adjuncts in academic fields that were closely related to occupations, such as law or engineering (Bettinger & Long, 2010). The decreased likelihood of subsequent course enrollments in introductory courses taught by adjuncts could be due to the lack of knowledge that adjuncts have about subsequent

courses within the academic major; without being connected to the academic department and knowing the overall goals and trajectory of the program, it would be difficult for adjuncts to inform and engage their students in the major.

There is also evidence to suggest that graduation rates, a major contributor to points received in performance-based funding formulas, are also impacted by adjunct instructors. Ehrenberg and Zhang (2004) found that when the number of part-time, non-tenure track instructors increases by 10% at an institution, it can be associated with a 4.4% decrease in graduation rates. Part of this negative effect on graduation rates could be attributed to the lack of a sense of belonging felt by adjunct instructors (Kezar et al., 2019). Since having a sense of belonging is considered a great indicator for student retention and success and many college students are taught by adjunct instructors for general education courses, they may also feel disconnected from the university as a byproduct of their instructors' lack of connection. This could affect not only retention but also graduation rates (Kezar et al., 2019). This sense of belonging and meaningful faculty-student interactions is even more impactful for students from underrepresented racial groups as well as low-income and first-generation students and is typically solidified within a student's first year of college (Kezar et al., 2019). With the research indicating that adjunct instructors have fewer interactions with their students, perhaps due to their lack of office space, this could be a contributing factor to the correlation between lower retention and graduation rates among students taught by adjunct instructors.

### **Adjunct Support Initiatives**

As the issue of the increasing number of adjunct instructors began to enter the literature in the 1990s, there were isolated instances of support programs instituted to support contingent faculty (Zubrow, 2012). One such program was at Granite State College in New Hampshire,

which received a grant that was primarily focused on creating professional development opportunities for adjunct instructors. This project, which was called the Adjunct Teaching Forum, provided training in teaching and assessment practices for 72 adjunct faculty through five 10-hour modules. While they were not compensated for participating in the modules themselves, they did receive a 10% pay increase upon completion of the program. The results of this initiative were promising and there is evidence that professional relationships between adjunct and full-time faculty were cultivated and continued as a result. This project eventually transformed into an assessment committee, where faculty of all statuses discussed best practices for student assessment and worked together to craft a college-wide assessment plan (Zubrow, 2012).

Another example of an adjunct-specific intervention was implemented in a social work department at a large, research-focused university. This program was informed by a needs assessment and developed a part-time adjunct liaison position, inclusion and recognition of adjunct instructors in departmental meetings and functions, mentoring opportunities, and communication structures to better disseminate information among all instructors (Fagan-Wilen et al., 2006). Practices and resources were inspired by this group that were not only beneficial to adjunct instructors but the department as a whole. An example of this is the Evidence-Based Resource Center that was inspired by the adjuncts' desire to have access to current and relevant research that would help them in their instruction (Fagan-Wilen et al., 2006). This resource center was located in the newly created adjunct office, which provided computers and additional office resources for adjunct instructors to share. This program also offered an evening professional development session for adjunct instructors. However, adjuncts who participated in this program were not compensated or rewarded extrinsically; participation was voluntary on the

part of the adjuncts and tied to their own intrinsic motivations of improving their teaching and growing their knowledge (Fagan-Wilen et al., 2006).

Although there is evidence that the number of orientation programs for adjunct instructors is increasing (Fagan-Wilen et al., 2006; Kezar, 2018), many of these are primarily focused on onboarding topics rather than pedagogical information; while adjuncts may learn about institutional policies and procedures through these sessions, they do not receive the information that they need and desire, which is how to effectively teach and assess their students (Dolan et al., 2013; Scott & Danley-Scott, 2015). Additionally, adjuncts participating in these orientations and additional professional development sessions are rarely paid to do so and do not receive any sort of bonus or tangible reward for their efforts (Fagan-Wilen et al., 2006; Scott & Danley-Scott, 2015).

There is an increased call to include adjuncts in assessment practices at institutions (Kezar, 2018; Scott & Danley-Scott, 2015; Zubrow, 2012). This is an understandable connection since adjunct instructors primarily teach general education classes (Scott & Danley-Scott, 2015) and have repeatedly expressed interest in learning more about student assessment practices (Dolan et al., 2013). As was evidenced at Granite State College, adjunct and full-time faculty can work together on assessment initiatives to strengthen their own teaching practices and better assess student learning (Zubrow, 2012). Since adjunct instructors teach a significant number of general education courses, it seems only natural to include them in the assessment process. This may also contribute to an increased connection between adjunct instructors and their academic departments, and could serve as a way for institutions to show that adjuncts are valued members of their professoriate (Kezar, 2018; Umbach, 2007).



All of the previously highlighted student success metrics directly affect the amount of state appropriations that institutions in performance-based funding states receive, so it is imperative that institutions do what they can to improve those outcomes in order to receive more funding. Since the research has shown that adjuncts may have a direct impact on student success measures that are commonly used in performance-based funding formulas, it would behoove higher education leaders to implement more support structures and professional development opportunities for adjunct instructors. The next section will provide more details on performance-based funding and its impacts on institutions, some of which are similar to the impacts of under supported contingent instructors.

### **Performance-Based Funding**

While the growth of the contingent professoriate in higher education has been slowly building over the last several decades, performance-based funding has been in place in some iteration since the late 1970s when neoliberal practices became more widespread (Kezar et al., 2019; Larocca & Carr, 2020). These practices have become even more prevalent as the public and politicians have begun to question the value of a college degree. With rising student loan debt and high underemployment numbers for college graduates, more individuals and groups are now holding higher education accountable by demanding quantifiable measures of student success (Deel, 2016). While the standards and extremity of performance-based funding have fluctuated over time and states, it has been an omnipresent part of determining state appropriations in higher education ever since neoliberal ideals began infiltrating academia. This section will highlight the history of performance-based funding for the United States and Tennessee, as well as the impacts and consequences of performance-based funding, both intended and otherwise.

## **History of Performance-Based Funding**

Performance-based funding began in 1979 and has had several iterations over the decades (Larocca & Carr, 2020). There are two basic models of performance-based funding, which are referred to as performance-based funding 1.0 and performance-based funding 2.0 (Alshehri, 2016; Dougherty, 2018; Lang, 2016; Umbricht et al., 2017). Performance-based funding 1.0, the first iteration, focused on funding that was given in addition to state appropriated funds, almost like a bonus, for meeting certain predetermined metrics such as job placement rates of alumni or retention (Alshehri, 2016; Larocca & Carr, 2020). Performance-based funding 2.0 takes it to a new level; rather than performance-based funding being an added bonus, it is the main part of determining the funding that an institution receives through state appropriations. This creates a more competitive environment among institutions as they are each vying for more funds.

Performance-based funding standards differ among institution type; for example, community colleges may have standards with more emphasis on developmental education outcomes while universities may have research-specific metrics (Dougherty, 2018). Some states have also begun to place greater emphasis on enrolling students from low socio-economic backgrounds or underrepresented minority groups in response to criticisms that institutions were neglecting or actively excluding these groups due to their perceived negative effect on success metrics (Dougherty, 2018; Hu, 2019; Li & Ortagus, 2019; Unintended Impacts, 2013).

The implementation of performance-based funding is heavily influenced by politics and is statistically more likely in states with Republican leadership (Alshehri, 2016; Dougherty, 2018; Hagood, 2019; Umbricht et al., 2017). It is also heavily influenced and promoted by organizations such as Complete College America, the Gates Foundation, and the Lumina Foundation (Alshehri, 2016; Dougherty, 2018; Larocca & Carr, 2020). The Lumina Foundation

has sponsored research into the effectiveness of this funding model based on the belief that money will change behaviors and that by incentivizing student success measures, higher education leaders will be more motivated to focus on their improvement (Abdul-Alim, 2013). Complete College America has sponsored their own research into the topic as well; both foundations found weak correlation between the implementation of performance-based funding and institutional outcomes, but attribute this to their studies focusing on early iterations of the funding model (Abdul-Alim, 2013).

The first iteration of performance-based funding, version 1.0, was quite popular in the 1990s and many states adopted their own version of this outcomes-based funding model (Li & Ortagus, 2019). However, due to increased market volatility and an overall decrease in state budgets, many of these states abandoned the performance-based funding model (Li & Ortagus, 2019). After the Great Recession, which lasted from 2007 until 2009, performance-based funding 2.0 became popular as governors faced decreased budgets (Dougherty, 2018) and increased public scrutiny of the benefits and purpose of higher education (Li & Ortagus, 2019). Performance-based funding models differ across states, with some focusing only on one type of institution while others encompass all public higher education regardless of type of degree awarded (Li & Ortagus, 2019; Ortagus et al., 2020). While the specific metrics may differ, the most common outcome included in performance-based funding formulas is student graduation rates (Ortagus et al., 2020). While performance-based funding differs amongst states, Tennessee is often cited as an exemplar of the practice (Alshehri, 2016; Dougherty, 2018; Li & Ortagus, 2019; Ziskin et. al, 2016); as the location of this study, it is important to understand the aggressive and pervasive nature of performance-based funding in Tennessee higher education.

### *Performance-Based Funding in Tennessee*

Tennessee was an early adopter of performance-based funding, having some form of it since 1979 (Alshehri, 2016; Li & Ortagus, 2019; Ziskin et al., 2016). While the amount of state appropriations based on performance-based funding varies across states, Tennessee and Ohio have the highest rates with nearly 90% of their funding based on performance metrics (Alshehri, 2016; Dougherty, 2018). This was not always the case in Tennessee; when performance-based funding was first implemented in the state, only 5.45% of state appropriations were tied to performance-based funding metrics (Li & Ortagus, 2019). In 2010, Tennessee passed the Complete College Tennessee Act (CCTA), which increased that percentage to 85%, making it one of the most aggressive and prevalent forms of performance-based funding in the country (Li & Ortagus, 2019; Ziskin et al., 2016). Table 2.1 provides an overview of the metrics included in the funding formula as described in CCTA, differentiating between metrics for four-year colleges and universities and those for 2-year community colleges.

**Table 2.1**

*Performance-Funding Metrics in Tennessee (Callahan et al., 2017)*

	<b>4-Year Colleges &amp; Universities</b>	<b>2-Year Community Colleges</b>
<b>Retention and Enrollment</b>	<ul style="list-style-type: none"> <li>• Student attainment of 24/48/72 credit hours</li> <li>• Enrollment of transfer student with 12+ credit hours</li> </ul>	<ul style="list-style-type: none"> <li>• Dual enrollment</li> <li>• Student attainment of 12/24/36 credit hours</li> <li>• Developmental education outcomes</li> <li>• Workforce training hours</li> <li>• Transfer students with 12+ credit hours</li> </ul>
<b>Graduation</b>	<ul style="list-style-type: none"> <li>• Degree completion (at all levels)</li> <li>• Degrees per 100 full-time equivalent</li> <li>• Graduation rate (6-year)</li> </ul>	<ul style="list-style-type: none"> <li>• Associates degree completion</li> <li>• Certificate completion</li> <li>• Degrees awarded per 100 full-time equivalent</li> <li>• Job placement of graduates</li> </ul>
<b>Populations</b>	<ul style="list-style-type: none"> <li>• Adult learners</li> <li>• Low-income students (Pell Grant-eligible)</li> </ul>	<ul style="list-style-type: none"> <li>• Adult learners</li> <li>• Low-income students (Pell Grant-eligible)</li> <li>• Academically underprepared</li> </ul>

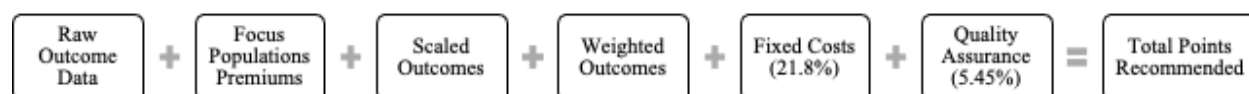
The structure of CCTA is unique in that it had specific measures for adult students and Pell Grant recipients who receive degrees as well as the number of transfer and dual enrollment students admitted (Hillman et al., 2018; Li & Ortagus, 2019). Another focus of CCTA is on workforce preparedness, particularly in STEM fields (Ziskin et al., 2016). The Act was revised in 2015 and, though many of the original metrics are still in place, it now excludes metrics for certain certifications that were previously included in the formula (Li & Ortagus, 2019) as well as removing metrics at four-year institutions for transfer student enrollments (Callahan et al., 2017). Under the guidelines of CCTA as it was first implemented for 2010 through 2015, Tennessee higher education institutions were allowed to prioritize certain metrics based on their institutional mission and goals, which would result in those categories being more heavily weighted in the funding formula (Callahan et al., 2017; Testa, 2017). In the second iteration of CCTA, applicable in years 2015 through 2020, institutions are still allowed this opportunity except for certain metrics at community colleges, which have been standardized across the board (Callahan et al., 2017). CCTA applies to all public institutions in the state, including those in the Tennessee Board of Regents system, the University of Tennessee system, and the six 4-year institutions previously included in the Tennessee Board of Regents, now referred to as “Local Governing Institutions.”

The funding formula used by Tennessee is complex and multi-faceted. It relies on the aforementioned metrics of retention and completion, and allows institutions to weight outcomes based on their mission and priorities, as well as Quality Assurance Funding that focuses on student learning and engagement. The formula also gives additional weight to success metrics for student populations that are deemed at risk for failure, non-completion, or withdrawal. Essentially, an institution has two ways to increase the amount of funding received. First, they

can improve their own performance or, second, they can improve at a greater rate than their competitors (Testa, 2017). Figure 2.1 provides a simplified illustration of the performance-based funding formula in Tennessee.

**Figure 2.1**

*Tennessee Performance-Based Funding Formula Model*



*Note.* Percentages included are from the 2016-2017 funding formula cycle. Outcomes are based on 3-year averages.

Focus populations differ for community colleges and universities. For community colleges, the identified focus populations are adult learners over the age of 25, Pell Grant-eligible students, and academically underprepared students who require remedial coursework based on their ACT scores. Community colleges receive an 80% premium if a student falls into one of these categories, 100% if they fall into two, and 120% if they fit all three categories. Universities have focus populations of adult learners over the age of 25 and Pell Grant-eligible students. Like community colleges, universities receive an 80% premium if students fall into one category and 100% if they fall into both (Testa, 2017).

Weighted outcomes are determined based on the Basic Carnegie Classification framework for each institution, allowing the formula to control for differences among these institution types. The Basic Carnegie Classification framework classifies institutions based on their disciplinary focus and program types, as well as their student population, whether it be predominately traditional, non-traditional, or a blend of the two (Testa, 2017). Table 2.2 provides a breakdown of the 22 institutions included in this study and their Basic Carnegie Classification.

**Table 2.2***Public Tennessee State Institutions by Basic Carnegie Classification*

<b>Basic Carnegie Classification</b>	<b>Institutions</b>
Associate's Colleges: High Transfer-High Traditional	Cleveland State Community College Columbia State Community College Motlow State Community College Northeast State Community College Roane State Community College Walters State Community College
Associate's Colleges: High-Transfer-Mixed Traditional/Non-Traditional	Dyersburg State Community College Jackson State Community College Nashville State Community College Pellissippi State Community College
Associate's Colleges: Mixed Transfer/Career & Technical-High Traditional	Chattanooga State Community College
Master's Colleges & Universities: Medium Programs	University of Tennessee – Martin
Master's Colleges & Universities: Larger Programs	Austin Peay State University University of Tennessee – Chattanooga
Doctoral Universities: Moderate Research Activity	East Tennessee State University Middle Tennessee State University Tennessee State University Tennessee Technological University
Doctoral Universities: Higher Research Activity	University of Memphis
Doctoral Universities: Highest Research Activity	University of Tennessee, Knoxville

*Note.* Information provided is from 2017; some Basic Carnegie Classifications may have

changed since these data were compiled. Adapted from *Funding Tennessee's Public Colleges and Universities: The Outcomes-Based Formula*, by J. Testa, 2017.

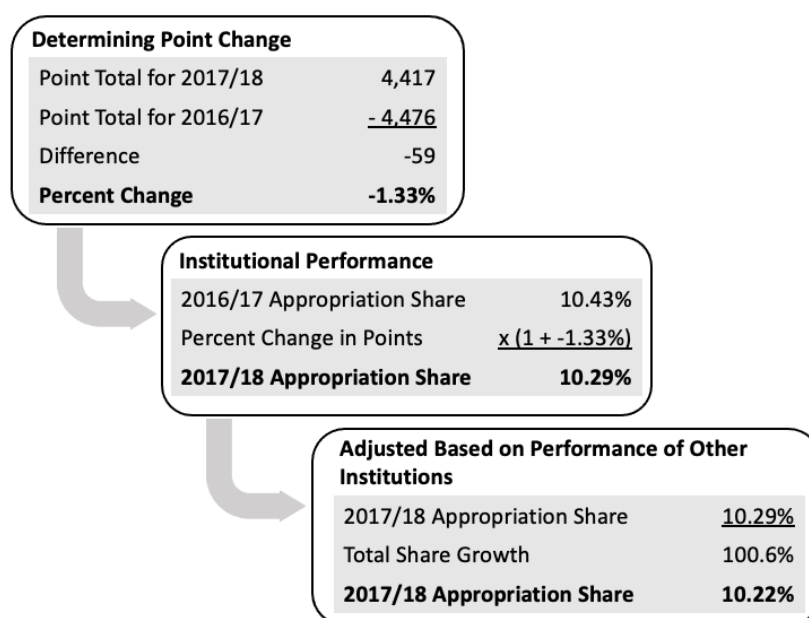
The process for determining state appropriations through CCTA is complex and takes into account not only the weighted metrics prioritized by institutions but also allowing premiums for focus populations and scaling data to compare to performance in previous years. While the percentages used to weight outcomes changes based on institution, the overall formula to determine the point total can be represented as follows:

$$(\text{weighted outcome points}) + (\text{fixed costs points}) + (\text{QAF points}) = \text{overall points}$$

Once this calculation is determined, the points earned for the current year are compared to the previous year to determine how much the points changed, represented as a percentage. The percentage change is then multiplied by the percentage of appropriations received by the institution the previous year to determine the percentage of appropriations that will be received for the current year (Testa, 2017). Figure 2.2 provides an example of this process, using data from the 2016-2017 and 2017-2018 years for Middle Tennessee State University.

**Figure 2.2**

*Using Percent Change in Point Totals to Determine Final Appropriation Share*



*Note:* Data are for Middle Tennessee State University. Adapted from *Funding Tennessee's Public Colleges and Universities: The Outcomes-Based Formula*, by J. Testa, 2017.

The final step in this process determines the institutions' share of the overall state appropriations, so it can fluctuate each year. If all institutions improve their outcomes, then the ones that see the greatest improvements will receive the greatest share, and so on. To reduce



volatility in the numbers, a 3-year average of an institution's performance on the outcomes is used in the calculation (THEC, n.d.). Since institutions have the choice to prioritize certain outcomes over others and apply more weight to those metrics, it is easy to see how this can become a game of sorts for higher education leaders. By changing a certain weight or placing higher priority on metrics they have more control over or are implementing specific strategies to improve, higher education leaders can "game" the system to earn a greater portion of the overall share of state appropriations.

**Impacts of CCTA in Tennessee.** After the initial implementation of CCTA in Tennessee, one of the first and most noticeable impacts was on degree and certificate completion rates among community college students (Hillman et al., 2018; Johnson & Yanagiura, 2016). While this impact was short-lived, the rates still remained higher than they were prior to the implementation of CCTA. Although the growth in awarded associate's degrees was slower than that of certificate completion, there was still an increase in these rates, although they eventually plateaued (Hillman et al., 2018). Overall, the intended impacts of CCTA and performance-based funding in Tennessee were achieved, yet not sustained over time (Hillman et al., 2018). However, it will be interesting to examine whether the changes to CCTA that are in effect until 2020 will have any effect on these trends, or if they will produce similar results.

### **Impacts of Performance-Based Funding**

Performance-based funding is a polarizing subject with varying opinions on both sides. While some researchers posit that it is an accountability tool that keeps higher education institutions in check, others argue that it may do more harm than good (Hagood, 2019). Some educators shared in a qualitative study that they defined student success differently than their state and feared that this disparity may lead to conflicting values among faculty and

administrators (Wayt & LaCost, 2016). Others felt that the student success metrics at the heart of performance-based funding were things that their institutions should already be focusing on, whether they would receive additional funding or not (Wayt & LaCost, 2016). Still others worried that the funding formula was out of sync with the realities of their students, especially in terms of graduation rates. Since funding formula metrics usually count degrees earned within 6 years, some educators worried that their institutions would not get credit for the students who still graduated, but took longer than the state preferred (Wayt & LaCost, 2016). A common concern among higher education advocates is also that performance-based funding will further divide institutions, rewarding those with the extra resources to implement costly support structures to address funding formula metrics and penalizing those without the resources to keep up (McKinney & Hagedorn, 2017). Since many of the institutions with fewer resources serve underrepresented students who are at risk of failure or non-completion, opponents of performance-based funding structures fear that these practices will further exacerbate the achievement gap in higher education (McKinney & Hagedorn, 2017). Regardless of individual perceptions, performance-based funding has impacts, both intentional and otherwise, on all aspects of an institution, from recruiting and enrollment practices to student success metrics.

**Student Success Impacts.** As Dougherty (2018) notes, it is difficult to determine the effect that performance-based funding has on student success outcomes since institutions in these states are also simultaneously implementing other improvement programs that could also impact these metrics. Therefore, it is difficult to determine overall if performance-based funding has any effect on student success metrics (Dougherty, 2018; Larocca & Carr, 2020). However, a growing body of literature shows that performance-based funding has either very little or a negative effect on student learning outcomes, especially among students from historically at-risk categories

(Dougherty, 2018; Hu, 2019; Larocca & Carr, 2020). It is argued by some that performance-based funding incentivizes institutions to implement programs to better support student learning (Hagood, 2019), yet some studies have shown that administrators in performance-based funding states have actually discouraged faculty from giving failing grades to students so as to not negatively impact their funding (Dougherty, 2018; Unintended Impacts, 2013).

From a graduation rate perspective, studies have consistently shown that there is little to no evidence to support that performance-based funding has any impact on graduation rates of four-year institutions (Larocca & Carr, 2020; Umbricht et al., 2017). However, at 2-year schools, performance-based funding practices are connected with a statistically significant positive increase in overall graduation rates in some states (Larocca & Carr, 2020), while others have seen little to no impact on graduation rates but have seen an increase in students receiving certificates (Hu, 2019). It is hypothesized that the higher number of contingent faculty at 2-year schools may lead to higher graduation rates since these instructors are less likely to push back against administrative goals focused on performance-based funding formula indicators due to their precarious employment status (Larocca & Carr, 2020).

**Institutional Impacts.** A positive, intended impact of performance-based funding is that there is evidence that institutions implemented initiatives specifically focused on improving student success metrics, primarily retention (Ortagus et al., 2020). Most of these studies are qualitative in design, and there is a need for more quantitative data on the actual impacts these initiatives may have on student success metrics (Ortagus et al., 2020). There are, however, marked differences between the characteristics and spending habits of institutions in states without performance-based funding versus those with these structures in place. Institutions in states with performance-based funding typically have higher tuition rates and lower average

faculty salaries than states without performance-based funding, and they also have a greater number of part-time students (Hagood, 2019). Additionally, institutions in states with performance-based funding spend less per student than those in non-performance-based funding states and they also have a greater reliance on financial aid. Overall, the institutions that are most likely to benefit more overall from performance-based funding are research-focused, four-year public institutions that are selective in their enrollment. Institutions with high resources are more likely to benefit than those with lower levels of resources, which could lead to a greater disparity between institution types.

One characteristic of performance-based funding that is particularly difficult for institutions is its volatility. On some occasions, the expenses that an institution would have to incur in order to meet performance-based funding student success metrics would actually outweigh any additional funding received through the formula (Lang, 2016). Furthermore, it could be that the total amount of funding allocated for state appropriations may not even ultimately make it to the institutions, even if they meet the performance outcomes. In 2014, the University of Tennessee system was allocated \$375.8 million for higher education funding, but the Tennessee Higher Education Commission decided to only recommend appropriating 60.5% of that amount, or \$227 million, for performance-based metrics (Abdul-Alim, 2014).

Due to higher education funding and planning cycles, another issue with performance-based funding is that it may take years for institutions to see any return on investment for programs that may be implemented to address student success metrics such as graduation rates (Lang, 2016). Furthermore, since performance-based funding is tied to state funding, the amount allocated to higher education fluctuates each year, causing more volatility and competition among institutions (Lang, 2016). It has been hypothesized that higher education leaders,

especially those that are at four-year institutions, have stopped playing the performance-based funding “game” because they have found more lucrative opportunities with greater payoffs, such as private donations or corporations (Nisar, 2015).

**Enrollment Impacts.** Perhaps one of the more significant criticisms of performance-based funding is that it leads institutions to practice more selective and discriminatory enrollment practices (Dougherty, 2018; Hu, 2019; Li & Ortagus, 2019; Umbricht et al., 2017; Unintended Impacts, 2013). Students from groups that are historically categorized as at-risk for failure or non-completion, such as Pell Grant-eligible, academically underprepared, and others are less likely to meet the more stringent admissions standards that are implemented in conjunction with performance-based funding practices (Li & Ortagus, 2019; McKinney & Hagedorn, 2017; Umbricht et al., 2017). Since higher education institutions are focused on meeting performance-based funding standards, they recruit at high schools that have higher SAT and ACT test scores and higher student success metrics; these practices disproportionately affect minority students and contribute to an ever-expanding equity gap (Li & Ortagus, 2019; Umbricht et al., 2017). Studies have also shown evidence that students who are Hispanic, adult learners, Pell Grant-eligible, and/or part-time may negatively impact the amount of funding institutions receive through performance-based formulas, which may have a negative effect on schools that serve these communities (Ortagus et al., 2020). Based on the amount of Pell Grant funding received by institutions, there is also evidence that institutions in states with performance-based funding intentionally recruit students from high socio-economic backgrounds (Kelchen & Stedrak, 2015).

As previously noted, some states have instituted specific metrics in their performance-based funding formulas to address this concern. For example, 40% of the formula metrics in Tennessee pertain to the enrollment and success of adult and Pell Grant-eligible students (Li &

Ortagus, 2019). As far as whether these metrics actually yield results is another story; in Tennessee, Li & Ortagus (2019) found that while institutions saw an increase in the number of Pell Grant-eligible students enrolled, they did not see such positive gains on the enrollment of adult learners. It is speculated that this could be due to a positive economical turn during the implementation of CCTA standards, which could lead to fewer adult learners seeking degrees or certifications (Li & Ortagus, 2019). It is interesting to note that, in Texas, students who were categorized as underprepared and thus enrolled in developmental courses actually received more money per student through the state funding formula than students who were deemed college-ready (McKinney & Hagerdorn, 2017). Although it may seem counterintuitive at first glance, it is worth noting that Texas, like Tennessee, attaches extra incentives to development coursework, which may explain this difference (McKinney & Hagerdorn, 2017).

Even with specific metrics instituted to seemingly disincentivize discriminatory enrollment practices, there is evidence that some institutions still have these practices. Umbricht et al. (2017) noted that many administrators “may try to comply with the letter but not the spirit of performance funding laws” (p. 647). These leaders may feel that many of the factors related to the success or failure of students from disadvantaged or at-risk backgrounds are largely out of their control, so rather than admitting those students and implementing costly support structures, they instead focus their enrollment priorities on other student demographics that will be more beneficial to their institutions (Umbricht et al., 2017). There is evidence to suggest that many higher education leaders focus on the simplest, cheapest, and least strenuous efforts to meet student success metrics outlined in funding formulas (Ortagus et al., 2020). This is an example of the utilitarian approach to performance-based funding that seems rooted in game theory; higher education leaders are making strategic decisions in order to receive more beneficial payoffs from

the “game” of performance-based funding. While this may seem callous and lacking empathy, as well as discriminatory, it is a strategic decision that leaders hope will pay off in the future. These unintended impacts of performance-based funding highlight the darker side of neoliberalism and the competitive, utilitarian approach of playing the performance-based funding game.

### **Faculty Status and Performance-Based Funding**

With evidence to suggest that both a rise in contingent instructors and increased emphasis on performance-based funding initiatives can have negative impacts on higher education institutions, it may be time to connect these two issues to see if any relationship exists between them. However, it does not appear that these two issues have been connected in the available literature at this time. There has been little research into the effect that faculty status has on performance-based funding, although there have been studies that examined how faculty respond to performance-based funding initiatives based on their status. Tenured faculty typically do not respond positively to performance-based funding practices due to concern that it will lower academic standards or negatively impact academic integrity (Larocca & Carr, 2020). Furthermore, tenured faculty may perceive performance-based funding initiatives to threaten their autonomy (Dougherty, 2016), which could lead them to resist these practices even if they fundamentally agree with them (Larocca & Carr, 2020). There are also concerns that student success data may eventually be tied to faculty raises and bonuses in much the way that performance-based funding is connected with institutional allocations (Deel, 2016); this is yet another example of the neoliberal environment of higher education and the increased role of performance and accountability measures being instituted. Another concern of tenured and tenure-track faculty is that accountability initiatives tied to performance-based funding typically involve time-consuming assessment and reporting practices, which they view as superfluous to

their existing course assessment and as a distraction to their primary role as teacher, researcher, and advisor (Deel, 2016).

Adjuncts and other part-time faculty do not have the luxury of resisting top-down accountability initiatives. With their tenuous job security and low institutional status, adjunct instructors are less likely to oppose performance-based funding initiatives in part because they may fear retaliation in the form of losing their position (Larocca & Carr, 2020). However, even when they are willing to participate in these initiatives, there is little training provided to allow contingent faculty to fully understand the purpose and importance of what they are doing. It is also difficult to determine if contingent instructors included in assessment practices or performance-based funding initiatives are compensated for this extra work; it has been well established that adjunct instructors are notoriously underpaid, so any additional work without compensation provided would raise ethical concerns. This increased focus on assessment and measurement of student outcomes that is primarily inspired by performance-based funding standards leads to the perception among faculty that the institution is focused on numbers and dollars rather than student learning, which has created a foundational disparity among the professoriate and administrators (Scott & Danley-Scott, 2015).

Faculty status and performance-based funding related issues may be more prevalent at 2-year community colleges than at 4-year institutions due to the higher numbers of contingent instructors employed by 2-year schools. While 4-year institutions typically have greater numbers of tenured or tenure-track faculty, 2-year schools usually have more adjuncts than full-time instructors (Larocca & Carr, 2020). Some studies have shown that up to 79% of instructors at community colleges are part-time (Xu, 2019). With their more precarious employment status, adjunct instructors are more likely to comply with performance-based funding initiatives that



administrators implement, so as the number of adjunct instructors increases it is feasible to hypothesize that these strategies would be more successful. However, the literature has provided little to no evidence that performance-based funding strategies produce significant payoffs at higher education institutions, so it may be time for leaders to determine a different strategy.

The literature provides evidence to suggest that both a rise in the number of contingent instructors and the implementation of performance-based funding initiatives could result in lower student retention, lower graduation rates, reduced academic integrity, grade inflation, and unethical practices. In a state like Tennessee with an aggressive outcomes formula based on performance measures and high numbers of contingent instructors, it is possible that institutions are taking a double hit on these issues, and students could ultimately be the ones losing the game.

### **Gaps in Literature**

While there is a wealth of information on the topics of adjunct instructors and performance-based funding, including the impacts of each on institutions and students alike, there appears to be a lack of connection between these two topics. A few studies have focused on the willingness and perception of performance-based funding based on faculty status (Dougherty, 2016; Larocca & Carr, 2020) but there do not seem to be any that explore the potential impact that faculty status may have on student success measures in the funding formula. This study will contribute to the existing literature by making a connection between the issues of increased adjunct instructors and their potential effects on performance-based funding outcomes. This information will be valuable to higher education leaders in any state, but particularly in Tennessee where nearly the entirety of state appropriations is determined by the funding formula.

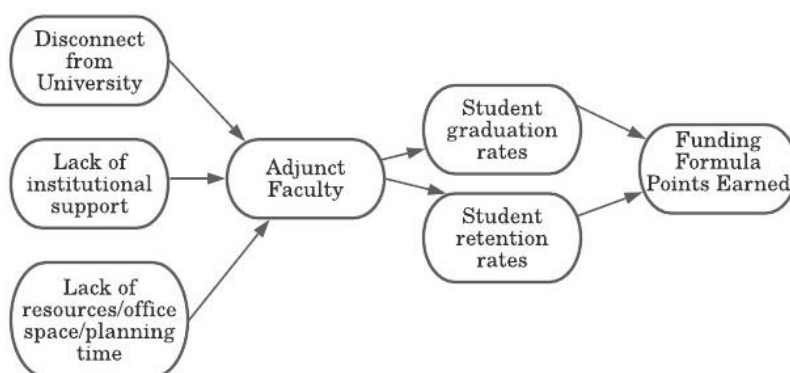
Another gap in the literature pertains to the impacts that adjunct instructors have on student success metrics in Tennessee. While many studies have focused on national impacts or

impacts at specific institutions, there does not appear to be a recent study that examines the relationship between adjunct instructors and student success metrics within the state of Tennessee. This study will provide information on a state-level of the impact of adjunct instructors at both 2- and 4-year institutions.

While there have been studies showing isolated instances of adjunct support programs, there is not a comprehensive or widespread examination of where these initiatives are offered, or if they are offered at all. The literature that is provided for these programs typically indicates that they are special projects, often funded by grants and not fully institutionalized. There does not appear to be a longitudinal study of the overall effectiveness of creating and sustaining support structures for adjunct instructors. Although it may be out of the reach of the current study, it would be beneficial to note if institutions with adjunct support initiatives in place see better student success outcomes and higher shares of state appropriations. Figure 2.3 provides a visualization of the hypothetical relationships between the issues discussed in this literature review.

**Figure 2.3**

*Model of Hypothetical Relationships*



### **Summary of Literature Review**

This chapter provided an overview of the literature surrounding the topics of adjunct faculty and performance-based funding. It began with an explanation of the conceptual and theoretical frameworks that this study utilized, which were neoliberalism and game theory, respectively. The issues of adjunct faculty were then discussed at length, including the characteristics of this contingent workforce, their working conditions, impact on student learning outcomes, and some of the support initiatives that have been implemented across the United States. The available literature shows that adjunct faculty are under supported at institutions across the country and also suffer from low pay and little to no institutional support or resources. This may result in a negative impact on student success metrics for students taught by adjuncts, primarily in the areas of retention and graduation rates. There was a study that revealed a positive correlation between adjunct instructors and subsequent course enrollment in fields closely connected to professions, such as engineering. This hearkens back to the original purpose of adjunct instructors in higher education before they became a cost-saving strategy; they were originally hired to teach program-specific courses based on their professional expertise in the field.

This chapter then went on to explore the literature pertaining to performance-based funding. The history of performance-based funding was presented, from its beginnings in the 1970s as version 1.0 through the adoption of the more aggressive version 2.0 of today. This chapter also focused on the history of performance-based funding in Tennessee, since it is the setting of this study. The impacts of performance-based funding were then explored, with those pertaining to student success, institutional changes, and enrollment practices.

Finally, this chapter showed the connection available in the literature between the topics of faculty status and performance-based funding, which is more focused on faculty perceptions of outcomes-based initiatives based on their status as full-time or part-time instructors. The gap in the literature that this study hopes to fill was presented, which is to connect these issues to determine if faculty status plays a role in the number of performance-based funding points earned through the Tennessee formula.

## **Chapter III**

### **Method**

Previous research has indicated that an increase in part-time instructors may have a negative effect on student success metrics such as retention and graduation rates (Ehrenberg & Zhang, 2005; Umbach, 2007; Xu, 2019), which are two significant factors in performance-based funding formulas. Performance-based funding initiatives may also have a negative effect on student success metrics (Dougherty, 2018; Hu, 2019; Larocca & Carr, 2020), meaning that institutions with higher numbers of contingent faculty in performance-based funding states may experience a confounding impact on state appropriations. However, there is a gap in the literature in regard to connecting faculty status and performance-based funding. The purpose of this study was to build on previous research to determine if there was a statistically significant mean difference in retention rates, graduation rates, and performance-based funding points earned at 2- and 4-year higher education institutions in Tennessee based on faculty status. The study contributes to the existing literature by connecting two significant factors, performance-based funding and faculty status, while also providing a theoretical framework for higher education leadership to use in an accountability, performance-based environment. Approval for this study was gained by the Institutional Review Board at Austin Peay State University, proof of which can be found in Appendix B.

### **Research Questions and Hypotheses**

This study was guided by the following three research questions regarding adjunct instructors and performance-based funding across public higher education institutions in Tennessee.

1. When controlling for institution type, is there a difference in student retention rates based on the percentage of part-time instructors at 2- and 4-year higher education institutions in Tennessee?
2. When controlling for institution type, is there a difference in student graduation rates based on the percentage of part-time instructors at 2- and 4-year higher education institutions in Tennessee?
3. When controlling for institution type, is there a difference in performance-based funding points earned based on the percentage of part-time instructors at 2- and 4-year higher education institutions in the Tennessee performance-based funding formula?

The null hypothesis for each research question was that there are not differences in the adjusted population means, while each alternative hypothesis stated that a difference in the means exists in some.

### **Research Design**

This study utilized an ex post facto design and used data collected through the Integrated Postsecondary Education System (IPEDS) and the Tennessee Higher Education Commission (THEC). IPEDS is an independent, non-partisan repository of data that is maintained by the Institute of Education Sciences, which is the research branch of the Department of Education. The IPEDS survey is completed by all postsecondary institutions in the United States on an annual basis. Institutions are required to provide this information in order to participate in federal financial assistance programs, as outlined in the Higher Education Act of 1965 (NCES, n. d.). Data collected through IPEDS focuses on 12 main areas, which include student success metrics such as retention and graduation rates, human resources information such as the number of

faculty, and many other areas. Data are reported in aggregate form and do not include individual student or employee information. THEC is the coordinating board for higher education within the state of Tennessee and provides oversight and direction for institutions in relation to new degree programs, the performance-based funding formula, and other endeavors. The commission publishes the annual funding formula calculations on their website in the form of narrative reports and Excel spreadsheets.

Data were collected from IPEDS and THEC for academic years 2010-2011 through 2018-2019. Averages of the data over this 9-year period were used for the analysis due to the fact that there was not a great deal of fluctuation in the data points over the 9-year period. The data were examined using three separate analyses of covariance (ANCOVAs), which allowed for more statistical control than other tests. The ANCOVA approach was also the best fit for this data due to the wide range of percentages of adjunct faculty at 2- and 4-year institutions. Since most 2-year institutions had more than 50% of their faculty identified as adjunct, whereas all 4-year institutions were less than 50%, the ANCOVA allowed the researcher to control that variable through the statistical analysis. As noted by Shieh (2019), the ANCOVA procedure allows the researcher to combine linear regression and analysis of variance (ANOVA) into one omnibus test, while reducing the error variance. Essentially, an ANCOVA allows the researcher to include an additional independent variable, referred to as a covariate, to statistically control for certain variables and partition the variation that results from the variable.

### **Population and Sample**

The population for this study is higher education institutions in the state of Tennessee. The sample for this study included all public, degree-granting higher education institutions in the state of Tennessee, which includes nine 4-year universities and 13 2-year community colleges.

These institutions represent two university systems, the Tennessee Board of Regents (TBR) and the University of Tennessee System, as well as local governing institutions with their own governing boards. All of these institutions receive state appropriations based on the performance-based funding formula outlined in CCTA.

### **Institutional Demographics**

The 22 institutions represented in the sample for this study provide a diverse representation of the higher education landscape in Tennessee. The state is divided into three major regions, which are West, Middle, and East Tennessee. The institutions represented in this sample are approximately evenly distributed across the regions of the state, with all regions represented. Institutions also provide a diverse representation of both rural and urban settings.

Enrollment for the 22 institutions included in the study also varies, with average enrollments at the 4-year institutions ranging between 7,300 to nearly 30,000 students. The 2-year community colleges have an average enrollment range of just over 3,000 to approximately 10,600. As evidenced through the Basic Carnegie Classifications explained in the literature review, these institutions also represent various mission focuses and student body populations.

### **Data Collection and Analysis**

Data were collected from IPEDS and THEC for academic years 2010-2011 through 2018-2019. These years were chosen because the 2010-2011 academic year was the first year that CCTA, the most recent iteration of performance-based funding in Tennessee, was implemented. Since the 2019-2020 academic year data were potentially skewed due to the COVID-19 pandemic, the data were only examined through the 2018-2019 academic year. The data collected from IPEDS for each institution included retention rates, graduation rates, overall number of instructional faculty, and number of part-time instructional faculty. The last two noted



data points were used to determine the percentage of part-time instructional faculty at each institution.

Additional data regarding points received on the performance-based funding formula was collected from the THEC website, which publishes reports containing this information by institution each year. Spreadsheets with breakdowns of the funding formula calculations are available for some years included in this study, but not all. Therefore, the overall THEC report was the most reliable source of this information. Table 3.1 provides the 9-year averages for each data point included in the study. Since these data are required reporting and public record, consent from the institutions was not necessary for this study.

Retention rates for this study were defined as the percentage of students who were retained from the spring to fall semester. Graduation rates represent the percentage of students who graduated within 150% of normal time; this means that students at 2-year institutions graduated within 3 years and those at 4-year institutions graduated within 6 years. Faculty numbers represent only instructional faculty and not those that are hired with the primary role of research or administrative duties.

Each ANCOVA used institution type as the dichotomous independent variable, which included 2- and 4-year institutions as its levels. The covariate for each ANCOVA was the average percentage of adjunct faculty over the 9-year period that data were collected. Each ANCOVA had one dependent variable, which included retention rates, graduation rates, and performance-based funding points earned for each of the 22 institutions. All dependent variable values were based on the averages of data collected for the 9-year period. The analysis portion of the ANCOVA was conducted using the Statistical Package for the Social Sciences (SPSS), Version 28. The level of significance for all data evaluated was .05.

The research questions, variables, and data analysis methods are outlined in the Research Matrix found in Appendix A.

**Table 3.1**

*Institutional Data by College Type*

<b>Institution</b>	<b>Funding Points Earned</b>	<b>Graduation Rate</b>	<b>Full-Time Retention Rate</b>	<b>Part- Time Faculty</b>
<b>4-Year Institutions</b>				
Austin Peay State University	90	38%	68%	43%
East Tennessee State University	92	43%	70%	33%
Middle Tennessee State University	92	45%	72%	28%
Tennessee State University	81	34%	61%	29%
Tennessee Tech University	95	52%	75%	38%
University of Memphis	91	44%	77%	43%
University of Tennessee Chattanooga	91	43%	70%	36%
University of Tennessee Knoxville	94	69%	86%	15%
University of Tennessee Martin	91	48%	73%	35%
<b>2-Year Community Colleges</b>				
Chattanooga State	95	13%	51%	62%
Cleveland State	88	19%	52%	65%
Columbia State	89	22%	57%	68%
Dyersburg State	96	14%	49%	67%
Jackson State	92	13%	48%	66%
Motlow State	92	25%	56%	68%
Nashville State	94	13%	50%	66%
Northeast State	94	21%	58%	62%
Pellissippi State	90	20%	54%	58%
Roane State	94	23%	57%	66%
Southwest Tennessee	89	8%	48%	64%
Volunteer State	91	19%	53%	62%
Walters State	94	22%	55%	61%

*Note.* Data represent averages of each metric based on data collected for academic years 2010-2011 through 2018-2019.

### **Assumptions, Limitations, and Delimitations**

This study did have some assumptions. The first assumption was that adjunct instructors do not receive adequate support and resources from their academic departments and/or their institution. This assumption was based on both observations and the knowledge of the researcher, as well as the literature review on the topic. A second assumption of this study was that student enrollment in courses taught by adjuncts was coincidental, meaning students were not self-selecting to be in courses based on faculty status. Based on the literature review and the experience of the researcher, most college students are unaware of faculty status and rarely understand the differences between full-time and part-time instructors.

An important delimitation of this study to note was that it focused only on the degree-granting institutions in Tennessee. In addition to the community colleges and 4-year universities across the state, there are also several technical colleges that offer certifications through their programs. Since these institutions have different measures for retention and graduation, they were not included in the sample for the study.

This study also had some limitations. One limitation is that this study used data from institutions in a state with an aggressive performance-based funding formula, which means that participants may have initiatives in place to focus on student success metrics such as retention and graduation rates. Another limitation is generalizability; Tennessee has one of the most aggressive performance-based funding models in the country, so generalizing these data to other states may be tenuous. This study is also limited in that the sample size is small; since this study examined data for public institutions in Tennessee, there were only 22 institutions included. An additional limitation is in how the data for adjunct instructors is reported to IPEDS. There is not a true measure of pure adjunct instructors available in IPEDS, but rather part-time instructional

faculty. This encompasses all instructors who teach part-time, which may include individuals who are full-time institutional staff who also teach in a part-time capacity. This may impact the study in that full-time staff would seemingly be more connected to their institution, thus confounding some of the impacts of adjuncts on student success metrics previously noted in the literature. Furthermore, the use of secondary data is limiting in itself as there are only certain datapoints available, thus limiting the variables that may be used in the study.

## **Chapter IV**

### **Findings**

The purpose of this study was to determine if faculty status impacted retention and graduation rates as well as the number of points received through the performance-based funding formula for 2- and 4-year public institutions in the state of Tennessee. More specifically, this study focused on whether there were differences in these variables based on the average percentage of part-time instructional faculty at these institutions over a 9-year period. These variables were selected based on previous research that indicated a negative difference between increased numbers of adjunct faculty and student success metrics, which account for a significant portion of the performance-based funding formula in Tennessee. This chapter provides the results for each research question based on the results from three separate ANCOVAs, as well as additional correlational tests for Research Question 1.

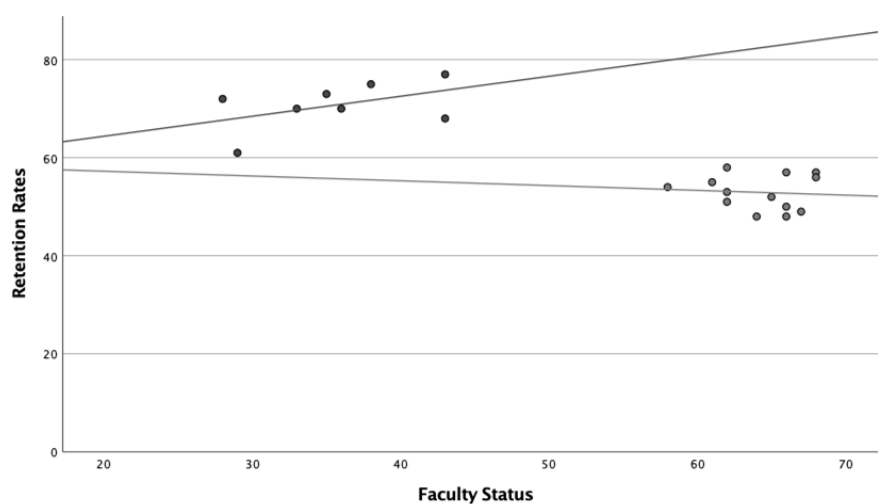
#### **Faculty Status and Retention Rates**

The first research question of this study focused on whether a difference existed in the means of average retention rates for 2- and 4-year public higher education institutions in Tennessee with the percentage of part-time instructional faculty used as a covariate. Prior to beginning this test, the researcher first checked to ensure that none of the assumptions of an ANCOVA were violated. The first four assumptions focus on the data and design of the study itself, all four of which were met. The first assumption is that the study has one dependent variable measured at a continuous scale; retention rate, which was the dependent variable for this first ANCOVA, met this assumption. The second assumption focuses on the independent variable and requires that it be categorical with at least two levels. Since this test used institution type, divided into the dichotomous levels of 2- and 4-year institutions, this assumption was also

met. The third assumption requires a continuous covariate, which was met by the percentage of adjunct faculty. Finally, the fourth assumption is that there be independence of observations, which was also met with this data set. The next assumption of an ANCOVA is that the covariate should be linearly related to the dependent variable at each level of the independent variable. This assumption was determined as met based on visual inspection of the scatterplot shown in Figure 4.1, which was produced in SPSS.

**Figure 4.1**

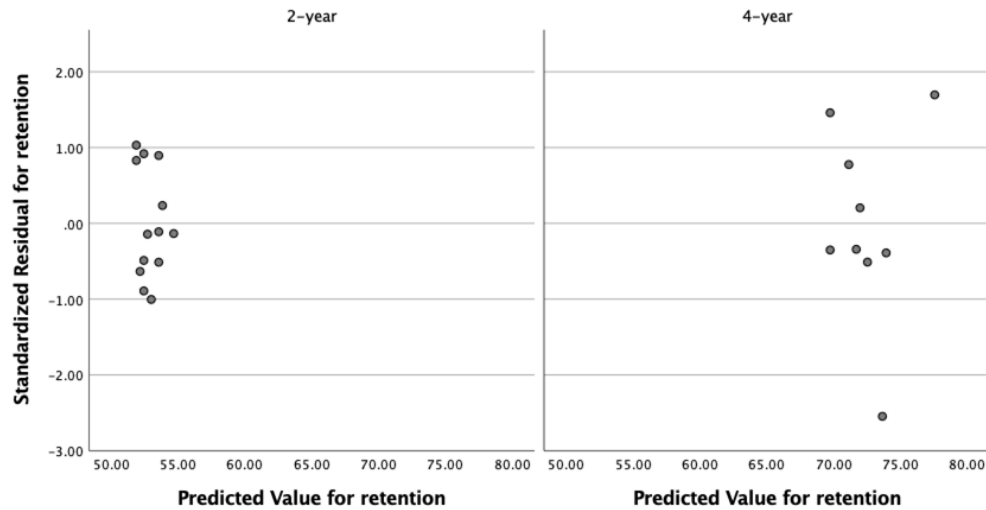
*Scatterplot of Retention Rates by Faculty Status by Institution Type*



The assumption of homogeneity of regression slopes was determined as met since the interaction term was not statistically significant,  $F(1,18) = 0.167$ ,  $p = 0.688$ . The next assumption is that the dependent variable be approximately normally distributed for each group of the independent variable. This assumption was met based on the results of Shapiro-Wilk's test, which showed that the standardized residuals for the interventions were normally distributed ( $p > .05$ ). The assumption of homoscedasticity was determined as met based on the visual inspection of the standardized residuals plotted against the predicted values. The scatterplot used to determine the assumption of homoscedasticity is provided in Figure 4.2.

**Figure 4.2**

*Scatterplot of Standardized Residual by Predicted Value for Retention Rates by Institution Type*



The assumption of homogeneity of variances was also determined as met based on the results of Levene's test ( $p = 0.22$ ). Finally, the assumption that there were no outliers in the data was determined as met since there were no cases with standardized residuals greater than  $\pm 3$  standard deviations.

Based on the available research, it was hypothesized that there would be a difference in retention rates when faculty status was used as a covariate. Table 4.1 provides descriptive statistics for Research Question 1.

**Table 4.1**

*Descriptive Statistics for Retention Rates With Faculty Status as a Covariate*

	<i>Unadjusted</i>			<i>Adjusted</i>	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
2-Year Institutions	13	52.92	3.55	56.46	2.7
4-Year Institutions	9	72.44	6.84	67.34	3.8

*Note:* *N* = number of participants, *M* = Mean, *SD* = Standard Deviation, *SE* = Standard Error

After adjustment for faculty status, there was not a statistically significant difference in retention rates,  $F(1,19) = 3.138$ ,  $p = .093$ , partial  $\eta_p^2 = .142$ . There was not a statistically

significant relationship between the covariate of faculty status and retention rates ( $p = .15$ ). Since a statistically significant difference was not found, post hoc tests were not conducted. Table 4.2 provides an overview of the ANCOVA results.

**Table 4.2**

*Tests of Between-Subjects Effects Based on Retention Rates While Controlling for Faculty Status*

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	$\eta_p^2$
Corrected Model	2082.326 <sup>a</sup>	2	1041.163	42.135	< .001	.816
Intercept	1719.281	1	1719.281	69.578	< .001	.785
Faculty Status	55.653	1	55.653	2.252	.150	.106
Institution	77.528	1	77.528	3.138	.093	.142

<sup>a</sup> R Squared = .816 (Adjusted R Squared = .797)

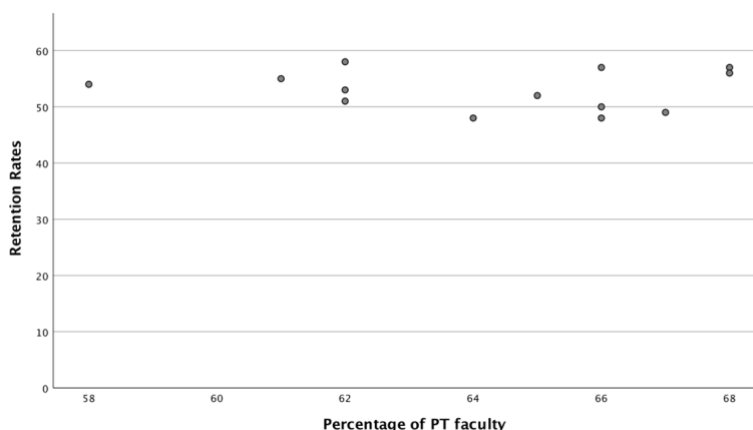
### **Additional Tests for Retention Rates and Faculty Status**

Based on the significance value of the ANCOVA ( $p = .093$ ) as well as the differences in variable values at 2- and 4-year institutions, the researcher conducted additional correlation tests by institution type. The first Pearson correlation test used data for 2-year institutions. The first variable used for this test was faculty status, which was measured as the average percentage of part-time instructional faculty at 2-year institutions over the 9-year period of the study. The second variable was retention rates, which also used averages of the data over the 9-year period. Since both variables are measured on the continuous scale and are paired based on institution, the first two assumptions for the Pearson correlation test were met. Based on visual inspection of a scatterplot, provided in Figure 4.3, there was a linear relationship between variables and no outliers were detected. Both variables were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ).



**Figure 4.3**

*Scatterplot of Retention Rates by Percentage of Part-Time Faculty at 2-Year Institutions*

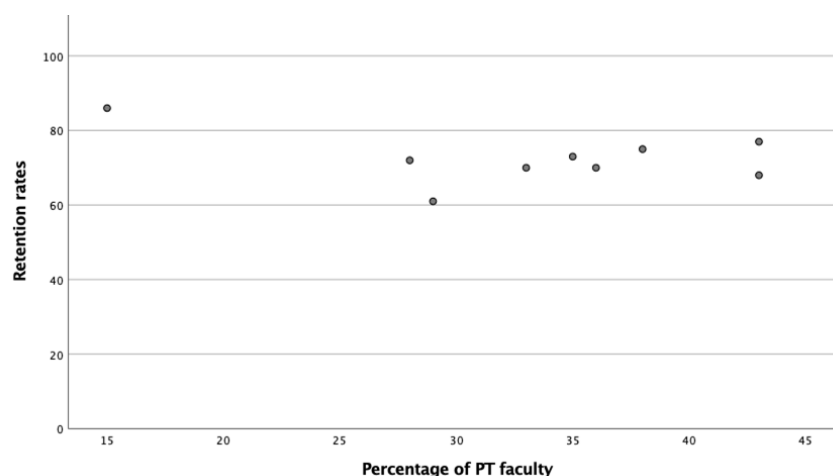


The results of the Pearson correlation test showed that there was not a significant correlation between faculty status and retention rates at 2-year institutions in Tennessee,  $r(11) = -.08, p = .786$ .

A second Pearson correlation test was conducted with data for 4-year public institutions in the state of Tennessee using the same variables as the previous test, which were retention rates and the percentage of part-time instructional faculty. A visual inspection of a scatterplot revealed that the assumption of linearity was met; however, there was one outlier noted. Since the data point is accurate and may have impacted the results, the test was conducted twice, once with the outlier and once excluding. There were no appreciable differences in the results based on the inclusion of the outlier. The following results presented are from the test that included the outlier. The variables were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ). Figure 4.4 is the scatterplot, produced in SPSS, that was used to determine linearity and the presence of outliers.

**Figure 4.4**

*Scatterplot of Retention Rates by Percentage of Part-Time Faculty at 4-Year Institutions*



The results of this Pearson correlation test revealed that there was not a statistically significant correlation between the percentage of part-time instructional faculty and retention rates at 4-year institutions,  $r(7) = -.397$ ,  $p = .290$ .

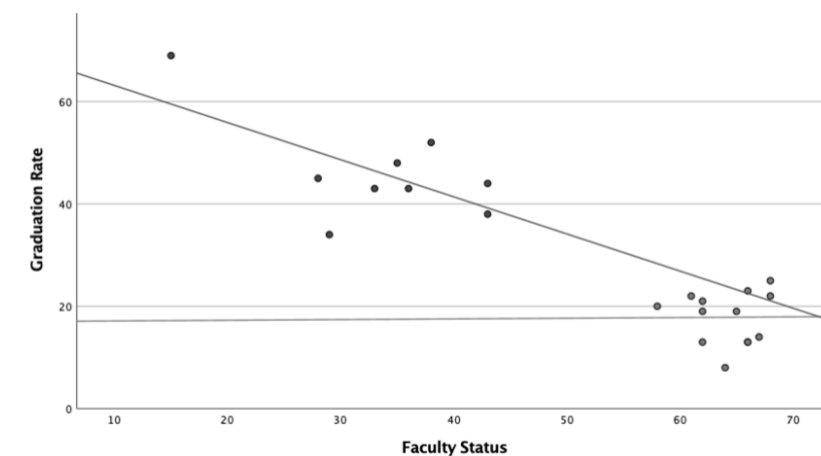
### **Faculty Status and Graduation Rates**

The second research question in this study asked if there was a difference in the means of graduation rates at 2- and 4-year higher education institutions in Tennessee based on faculty status. This question was also addressed using an ANCOVA in SPSS, with similar results. There was a linear relationship between the percentage of adjunct instructors and graduation rates, as assessed by visual inspection of the scatterplot provided in Figure 4.5. There was homogeneity of regression slopes as the interaction term was not statistically significant,  $F(1,18) = 1.152$ ,  $p = .297$ . Standardized residuals for the interventions were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ). There was homoscedasticity, as assessed by visual inspection of the standardized residuals plotted against the predicted values, as shown in Figure 4.6. There was homogeneity of variances, as assessed by Levene's test ( $p = .328$ ). Finally, there were no outliers

in the data, as assessed by there being no cases with standardized residuals great than  $\pm 3$  standard deviations.

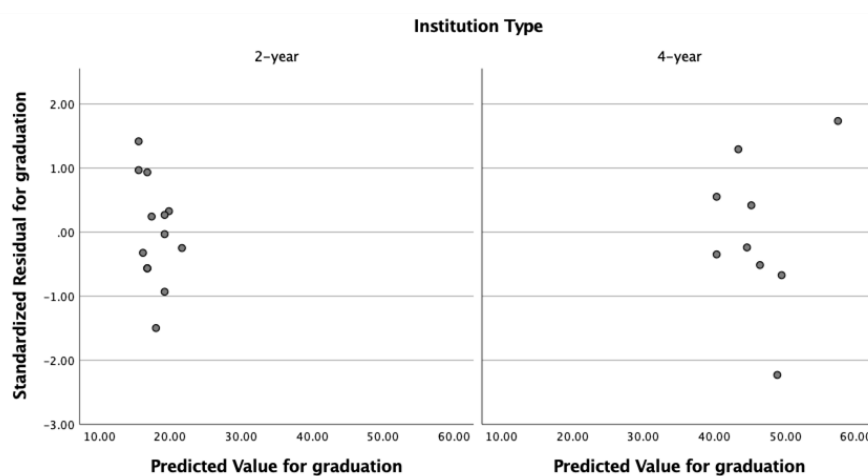
**Figure 4.5**

*Scatterplot of Graduation Rate by Percentage of Part-Time Faculty*



**Figure 4.6**

*Scatterplot of Standardized Residual and Predicted Value for Graduation Rate by Institution Type*



The descriptive statistics for Research Question 2 are provided in Table 4.3, showing both the unadjusted and adjusted means and variability for graduation rates.

**Table 4.3***Descriptive Statistics for Graduation Rates With Faculty Status as a Covariate*

	<i>Unadjusted</i>			<i>Adjusted</i>	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
2-Year Institutions	13	17.85	5.097	25.57	3.66
4-Year Institutions	9	46.22	9.997	35.07	5.08

*Note:* *N* = number of participants, *M* = Mean, *SD* = Standard Deviation, *SE* = Standard Error

Similar to the findings for Research Question 1, the ANCOVA results showed that after an adjustment for faculty status, there was not a significant difference in graduation rates,  $F(1,19) = 1.33$ ,  $p = .264$ , partial  $\eta^2 = .065$ . Following Cohen's (1988) guidelines for determining effect size as small ( $\eta_p^2 \leq .03$ ), medium ( $.03 < \eta_p^2 \leq .06$ ) or large ( $\eta_p^2 > .06$ ), the effect size for faculty status was large ( $\eta_p^2 = .239$ ). This suggested that 23.9% of the variation in graduation rates was attributable to the percentage of part-time faculty at an institution (Cohen, 1988). The significance value for the covariate of faculty status was statistically significant ( $p = .024$ ), indicating that there is a relationship between faculty status and graduation rates. Table 4.4 contains an overview of the ANCOVA test results.

**Table 4.4**

*Tests of Between-Subjects Effects Based on Graduation Rates While Controlling for Faculty Status*

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	$\eta_p^2$
Corrected Model	4548.108 <sup>a</sup>	2	2274.054	51.112	< .001	.843
Intercept	1128.767	1	1128.767	25.370	< .001	.572
Faculty Status	265.901	1	265.901	5.976	.024	.239
Institution	59.034	1	59.034	1.327	.264	.065

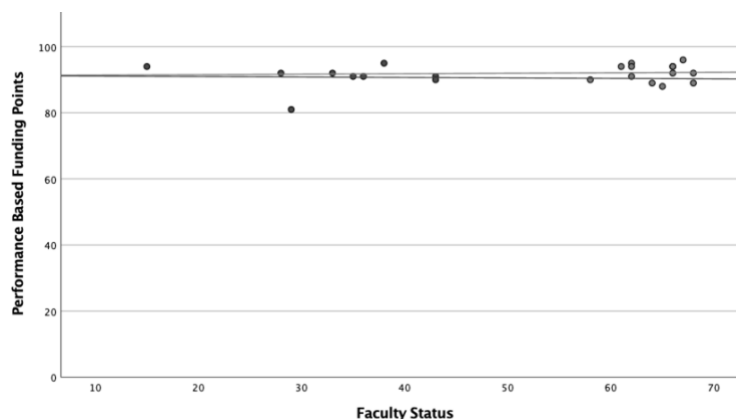
<sup>a</sup> R Squared = .843 (Adjusted R Squared = .827)

### Faculty Status and Performance-Based Funding Points

Research Question 3 focused on the difference between performance-based funding points received by 2- and 4-year institutions with faculty status as a covariate. It was hypothesized that, due to the established research showing a negative effect on student success measures, there would be a difference in the means of institution types based on faculty status. An ANCOVA was conducted to test this hypothesis. There was a linear relationship between the percentage of part-time instructors and the number of performance-based funding points earned, as assessed by a visual inspection of the scatterplot provided in Figure 4.7.

**Figure 4.7**

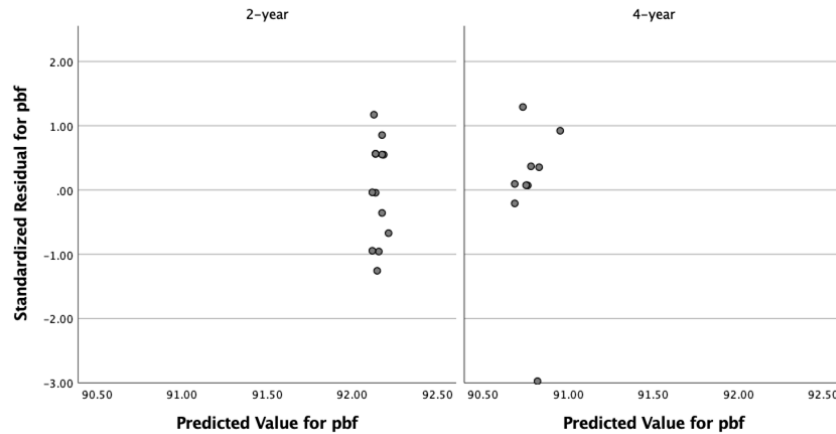
*Scatterplot of Performance-Based Funding Points Earned by Faculty Status*



The assumption for homogeneity of regression slopes was met as the interaction term was not statistically significant,  $F(1,18) = .006$ ,  $p = .938$ . The Shapiro-Wilk's test results showed that standardized residuals for the interventions were normally distributed ( $p > .05$ ). Visual inspection of the standardized residuals plotted against the predicted values, provided in Figure 4.8, showed that there was homoscedasticity.

**Figure 4.8**

*Scatterplot of Standardized Residual by Predicted Value for Performance-Based Funding*



Homogeneity of variances was present based on Levene's test ( $p = .86$ ). There were no cases with standardized residuals greater than  $\pm 3$  standard deviations, indicating that there were no significant outliers in the groups of the independent variable. Descriptive statistics for Research Question 3 are provided in Table 4.5.

**Table 4.5**

*Descriptive Statistics for Performance-Based Funding Points With Faculty Status as a Covariate*

	<i>Unadjusted</i>			<i>Adjusted</i>	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
2-Year Institutions	13	92.15	2.6	92.3	1.8
4-Year Institutions	9	90.78	3.9	90.6	2.5

*Note:*  $N$  = number of participants,  $M$  = Mean,  $SD$  = Standard Deviation,  $SE$  = Standard Error

After adjustment for faculty status, there was not a statistically significant difference in performance-based funding points earned by institutions,  $F(1,19) = .168$ ,  $p = .687$ , partial  $\eta_p^2 = .009$ . There was also not a statistically significant difference in performance-based funding points based on the covariate of faculty status ( $p = .939$ ). Full results of tests of between-subjects effects are presented in Table 4.6.

**Table 4.6**

*Tests of Between-Subjects Effects of Performance-Based Funding Points While Controlling for Faculty Status*

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	$\eta_p^2$
Corrected Model	10.135 <sup>a</sup>	2	5.068	.465	.635	.047
Intercept	2494.621	1	2494.621	228.773	< .001	.923
Faculty Status	.065	1	.065	.006	.939	.000
Institution	1.827	1	1.827	.168	.687	.009

<sup>a</sup> R Squared = .047 (Adjusted R Squared = -.054)

### Summary

This study examined three research questions to determine if a difference existed between the adjusted population means of retention rates, graduation rates, and performance-based funding points earned by public 2- and 4-year institutions in the state of Tennessee. The results for this study showed that there was not a difference in the adjusted population means for any of the research questions. However, there was a statistically significant value found in the covariate of faculty status when testing graduation rates, indicating that a relationship exists between these two variables.

Further tests were conducted using the variables of retention rates and faculty status due to the low significance value ( $p = .093$ ) found during the initial ANCOVA. Pearson correlation tests were run separately using data for 2- and 4-year institutions, and neither test showed a significant correlation between the variables.

## **Chapter V**

### **Discussion and Recommendations**

The available literature has established that adjunct faculty across the United States, a growing majority that makes up approximately 75% of the professoriate (Kezar et al., 2019; Parker et al., 2018), are largely under supported by their institutions and underprepared to teach their students. This predicament has led to findings that students in courses taught by adjuncts have diminished success outcomes, particularly in the areas of retention and graduation rates. Since these two metrics are included in the performance-based funding formula in the state of Tennessee and are typically top priorities for institutional leaders, it was hypothesized that faculty status would account for some of the variability in performance-based funding points earned and that differences would be found in the adjusted population means.

This study utilized data collected through the Integrated Postsecondary Education Data System (IPEDS) and the Tennessee Higher Education Commission (THEC) from the academic years of 2010-2011 through 2018-2019. The data collected was for the 22 public, degree-granting higher education institutions in the state of Tennessee and included the percentage of adjunct instructors, retention rates, graduation rates, and performance-based funding points earned. Averages of the percentage of adjunct instructors, retention and graduation rates, and performance-based funding points were used for the 9-year period. Three separate analyses of covariance (ANCOVAs) were conducted to determine if there were differences in the adjusted population means. The independent variable for all three ANCOVAs was institution type, which had two levels defined as 2- and 4-year public higher education institutions in Tennessee. The covariate for all three tests was faculty status, represented as the average percentage of part-time instructors at the institutions over the 9-year period of the study. The dependent variables for



each individual test were retention rates, graduation rates, and points earned through the performance-based funding formula.

The results of the three ANCOVAs did not reveal a difference between any of the adjusted population means in terms of faculty status. Contrary to the original hypothesis of this study, faculty status is not a predictor of the number of points earned through the performance-based funding formula. Further correlation studies were conducted to determine if institution type affected the relationship between retention rates and faculty status, but these tests indicated that there was not a significant correlation present for either 2- or 4-year institutions. The findings did reveal that while there was not a significant difference in the means of graduation rates and faculty status, there was a large effect size ( $p = .239$ ), suggesting that approximately 24% of the variation in graduation rates may be attributed to faculty status. This chapter will provide a discussion and further interpretation of these results. It will also explore the implications for practice, as well as opportunities for future research.

### **Discussion of Results**

The results of the ANCOVA tests were at first surprising and unexpected; based on the literature, this study hypothesized that there would be a difference in the means of retention rates, graduation rates, and performance-based funding points based on the percentage of adjunct faculty at institutions. However, none of those hypotheses were supported. Upon further consideration of the context and setting of this study, the results became less surprising and raised several important and interesting considerations regarding both adjunct instructors and performance-based funding.

The results of this study may initially lead one to believe that the increasing number of adjunct instructors in Tennessee is not an issue of concern and, therefore, not something that

higher education leaders should devote time or resources towards. However, this study did find a relationship between faculty status and graduation rates, which is a success metric that is important to higher education leaders on multiple levels. Of the two success metrics used in this study, graduation rates may be the more tenuous one to control; retaining students is one hurdle, but guiding them through a degree path with enough accumulated hours to graduate is a bit more complex. While there are surely other confounding variables at play in graduation rates, faculty status is one that leaders may want to consider when devising strategies for improving this outcome.

While contrary to what was originally expected, the results of this study raise several points of consideration for leaders in higher education. These considerations will help higher education leaders navigate the neoliberal environment of performance-based funding and success outcomes, while also providing valuable information to use in a game theory approach to innovation and improvement. These considerations, outlined below, include the differences in retention and graduation rates related to this study, as well as the nature and intended impacts of performance-based funding.

### **Retention versus Graduation Rates**

An intriguing point raised by the results of this study is the question of why graduation rates were related to faculty status while retention rates were not. These two metrics are often mentioned together, but are quite different when considering potential interventions and impacts, both on students and institutions. The literature review revealed that adjunct instructors are typically disconnected from their institutions and unaware of information pertaining to academic plans, advising, and other university policies (Ran & Sanders, 2020). It would be safe to assume that graduation requirements would also be included in the list of items that adjunct instructors

are unaware of; since these requirements are often complex, it may be that higher percentages of adjunct faculty may lead to less readily available information for students pertaining to graduation.

Another consideration raised by the results of this study is that higher percentages of part-time instructors may lead to greater advising loads on full-time faculty. With higher numbers of advisees, full-time faculty may not be able to devote as much time and consideration to individual students regarding their persistence and completion of a degree. Since it is much less time consuming to discuss a list of courses to enroll in for the upcoming semester rather than conduct a degree evaluation, this may be an explanation as to why a higher percentage of part-time instructors may impact graduation rates and not retention.

It is important to note that, while the ANCOVA results indicated that faculty status is related to graduation rates at both 2- and 4-year institutions in Tennessee, many 2-year community colleges have much lower graduation rates than their 4-year counterparts. The average graduation rate for 4-year institutions in Tennessee during the 9-year period of this study was 46%, with the lowest being 34% and the highest 69%. However, the average graduation rate for 2-year institutions during this time period was just under 18%, with none over 25% and the lowest in the single digits. While there are differences in retention rates based on institution type as well, they are not as pronounced as those seen in graduation rates. This could be due to a number of reasons, such as students attending community college for their core classes and transferring to a 4-year institution before obtaining a 2-year degree. Since this study indicated a relationship between faculty status and graduation rates, it may be beneficial for 2-year institutions in Tennessee in particular to reexamine their support of adjunct instructors. Every 2-year institution included in this study had a majority of part-time instructors during the years that

data was collected; put in terms of game theory, faculty status should be a significant factor for community college leaders to address if their desired payoff is improved graduation rates.

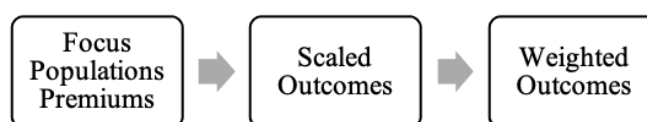
### **Nature of Performance-Based Funding**

The finding that faculty status does not account for any of the variability in the average points earned by institutions on the performance-based funding formula is intriguing. The available literature indicates that an increased number of adjunct faculty leads to diminished student success outcomes; since performance-based funding seems to rely heavily on student success outcomes, it was hypothesized that faculty status would be a significant factor in the points earned by institutions through the formula. However, the results of this study did not uphold that hypothesis. This could be due to several factors, such as the complex and volatile nature of performance-based funding, or perhaps institutional programs and interventions specifically targeting retention and graduation rates.

As highlighted in the review of literature, performance-based funding is volatile and complex. The formula used in Tennessee during the time period of this study allowed higher education leaders to weight certain outcomes based on their institutional missions or areas of focus, while also providing premiums for focus populations. The formula also attempted to control for outcomes with higher variations through scaled outcomes. These three pieces of the funding formula, shown in Figure 5.1, are explained further below in relation to the results of this study.

**Figure 5.1**

*Portion of Tennessee Performance-Based Funding Formula from 2017*

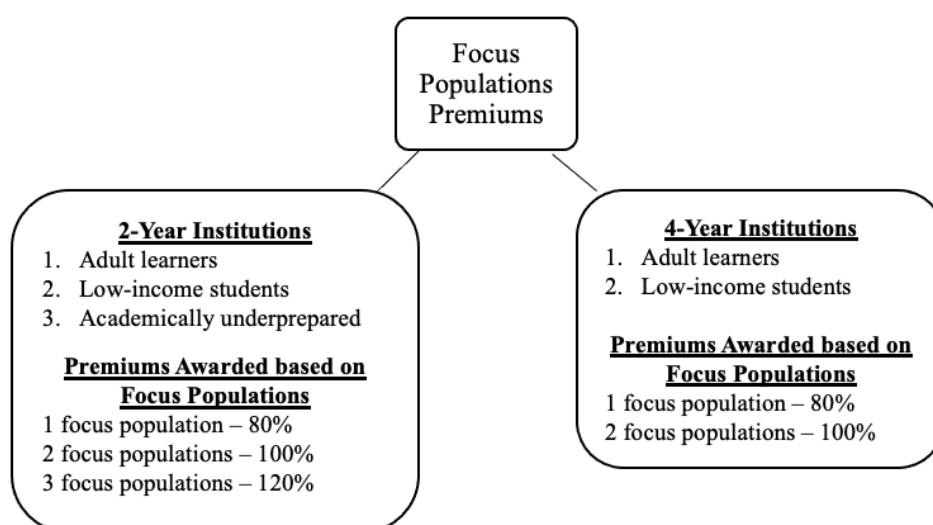


## ***Focus Populations***

Focus population premiums differ between 2- and 4-year institutions in the Tennessee performance-based funding formula, as displayed in Figure 5.2. Community colleges have three focus populations included in the formula, which are adult learners, low-income students, and students who are academically underprepared. Focus populations at 4-year institutions are limited to two groups, which are adult learners and low-income students. Premiums are awarded based on how many categories a student falls into, which are also displayed in Figure 5.2. Students are classified as low-income if they are eligible for the Pell Grant, and those classified as academically underprepared either did not score above a 19 on the ACT in the areas of Math, Reading, or composite, or achieve a score of 18 on Writing. Higher education leaders may focus their efforts on recruiting and enrolling students that fulfill these categories in order to receive premiums through the funding formula; since this is a significant portion of the formula, it may be that student demographics are a stronger predictor of performance-based funding results rather than those pertaining to faculty.

**Figure 5.2**

*Focus Population Premiums for the 2017 Tennessee Performance-Based Funding Formula*



Students from these focus populations typically need a different type and level of support and resources; this issue is further confounded if students fit into more than one category. Since performance-based funding exists in a neoliberal environment, it is safe to assume that these premiums are awarded so that institutions can allocate more funds to these support structures and resources for students who are at risk for failure. Since this study indicates a relationship between at least one success outcome and faculty status, higher education leaders may want to include the professional development of adjunct instructors as part of their support system for students. The available literature established that adjunct instructors typically receive little to no pedagogical support, so they may not be prepared to teach students who are at risk for failing or withdrawing. This issue may be exacerbated at 2-year institutions where premiums are awarded for academically underprepared students; if more students who are not college-ready are being admitted and higher numbers of adjunct instructors are not equipped to teach them, this could certainly impact student persistence and graduation.

### ***Scaled Outcomes***

Some outcomes included in the funding formula over the course of 2010 through 2020 were scaled using the standard deviations of data collected over time, typically a 10-year period. The scales for these outcomes differed; outcomes that historically showed more variation received higher scale values in an attempt to balance any extreme volatility. According to Testa (2017), both the 2010-2015 and 2015-2020 funding formula cycles used graduation rates as the most heavily weighted of the scales. This indicates that in addition to there being a broad range in graduation rates across public higher education institutions in Tennessee, there had also been a great deal of variation over the previous decade in this outcome. This scaling outcome may explain why there was a significant relationship between faculty status and graduation rates, but

not in performance-based points earned. However, since this study did suggest a relationship between these two factors, it may behoove higher education leaders in Tennessee to consider faculty status as a variable in the funding formula. Game theory suggests that all players must consider the moves of their counterparts; if one institution begins to see improvements in their graduation rates while others do not, that institution will see bigger payoffs in the funding formula while others will receive less. Focusing on providing support for part-time instructional faculty may be a way for higher education leaders to get ahead of their counterparts in terms of scaled outcomes.

### ***Weighted Outcomes***

The Tennessee funding formula allows higher education leaders to weight certain outcomes differently based on their institutional mission and focus, as defined by their Basic Carnegie Classification (Testa, 2017). Among others included in the weighted outcomes are rates for students accumulating 30, 60, and 90 hours as well as individual weights for each degree level and overall 6-year graduation rate. This seems to be the area of the formula where a game theory approach would be most beneficial and leaders have the greatest opportunity to manipulate the factors of the formula to receive their desired payoff. Since this study suggests that faculty status is related to graduation rates, providing more resources and pedagogical support for adjunct faculty may result in a positive impact on graduation rates. Since adjunct instructors primarily teach undergraduate courses, this improvement may allow higher education leaders to weight the outcomes pertaining to bachelor's and associate's degrees earned in the funding formula.

Weighted outcomes also allow institutions to focus more of the funding formula on mission-related factors, such as research and service. For example, research is a main focus of

the institutional mission at the University of Tennessee Knoxville. For students to be able to work closely with faculty outside of the classroom on research projects, the institution must employ a large number of full-time faculty rather than depend on contingent instructors. This may explain why they have the lowest percentage of adjunct instructors, with an average of 15% over the nine years examined in this study (NCES, n. d.). Conversely, community colleges are not as mission-focused on research projects or extra- and co-curricular experiences, which may contribute to the higher numbers of adjunct instructors utilized by 2-year institutions, an average of 64% at all community colleges included in this study over a 9-year period (NCES, n. d.).

### **Intended Impacts of Performance-Based Funding**

Another explanation for the lack of significant results in this study may be that performance-based funding is having the desired impact in Tennessee. Advocates of performance-based funding posit that it will force higher education leaders to focus on student success metrics such as retention and graduation rates (Abdul-Alim, 2013). It could be that even with the fluctuating numbers of adjunct faculty across the state of Tennessee, higher education leaders are implementing separate initiatives focused on improving student success metrics. These efforts may counteract any effects of faculty status on retention and graduation rates. It may be that an untapped resource of improving student success outcomes may be to offer more robust support for adjunct instructors, especially considering that there was a relationship found between faculty status and graduation rates.

There is still some area of improvement for retention and graduation rates in Tennessee compared to the national average. Retention rates at public community colleges across the country are 61%, and 65% for undergraduates at 4-year public institutions (NCES, n. d.). In Tennessee, the average retention rates over the 9-year period of this study were 53% for 2-year



community colleges and 72% for 4-year institutions. While the state is above average for 4-year institutions, where adjunct faculty percentages are lower, there is a nearly 10% discrepancy at 2-year institutions, where adjunct percentages are considerably higher.

When considering graduation rates, the national average for students graduating within 150% of normal time at 4-year institutions is approximately 60% (NCES, n. d.), while in Tennessee that percentage among 4-year institutions is 46%. At 2-year institutions, the national average graduation rate is around 30% (NCES, n.d.); in Tennessee, that average is approximately 18% over the nine years of focus for this study. Considering these statistics, it does not appear that an aggressive performance-based funding model has been effective at bringing higher education institutions in Tennessee up to the national average for graduation rates. Since this study indicated a relationship between graduation rates and faculty status, this may be an area of consideration for those interested in improving graduation rates across the state of Tennessee. The ongoing Drive to 55 initiative, first implemented by then-Governor Bill Haslam in 2013, aims to equip 55% of Tennesseans with a postsecondary degree or certificate by 2025. Paired with CCTA, the Drive to 55 initiative focused on educational attainment as workforce preparedness, while also holding higher education institutions accountable for student persistence and completion (Meehan & Kent, 2020). While the Drive to 55 initiative focuses interventions mainly on students, offering scholarships and tuition assistance, leaders may want to consider faculty status as part of this process. If meeting this goal is a priority for higher education leaders and state legislators, it may be beneficial to focus more efforts and resources on pedagogical support for all instructional faculty.

The literature review for this study revealed that, with only few exceptions, an increase in adjunct instructors was related to a decrease in student retention and graduation rates (Bettinger

& Long, 2010; Ehrenberg & Zhang, 2005; Kezar et al., 2019; Ran & Sanders, 2020; Xu, 2019). However, this study did not support the previous research, raising the question as to what made this study different from the others. The main difference seems to be that this study was focused on higher education institutions in Tennessee, a state with an aggressive funding formula. Research has also indicated that adjunct instructors are more likely to support initiatives related to performance-based funding due to their tenuous job security and overall institutional disconnect. Since the participants in this study included a greater number of 2-year community colleges, where the average percentage of part-time faculty is considerably higher than at 4-year institutions, this willingness to participate in outcomes-based initiatives may be greater among these instructors. This may provide some explanation for the lack of significant results in this study.

### **Implications for Practice**

The findings of this study introduce several implications for practice. Even with a lack of significant results, the results of this study did suggest a relationship between faculty status and student graduation rates. The literature suggests that adjunct support is not a top priority for most higher education leaders; however, if a relationship does exist between faculty status and graduation rates, it is important for leaders to consider adjunct support as part of a student success initiative. As noted previously, game theory is not only about making strategic decisions to earn the desired payoff. It is also about considering the actions of other players in the “game” and devising strategies to perform better. In the competitive, neoliberal environment of higher education, which is especially present in states with outcomes-based funding, faculty status may be an overlooked factor in the strategic process. The results of this study suggest that higher

education leaders should evaluate their current situation regarding adjunct faculty and examine what impact their support, or lack thereof, may have on student success.

Another important implication for practice that this study presents is the usefulness of a game theory approach to performance-based funding initiatives. The entire outcomes-based funding process is intrinsically influenced by game theory, and it seems that many higher education leaders are using a game theory approach, whether intentionally or not. By being more mindful of the decisions other institutions are making, as well as considering the desired payoffs, higher education leaders in Tennessee and beyond can be strategic and intentional in their outcomes-based initiatives, as well as their approach to weighted and mission-driven outcomes in the funding formula. In the neoliberal, outcomes-driven environment of performance-based funding, higher education leaders can benefit from a more strategic approach to all aspects of planning and decision-making, and game theory lends itself naturally to this context.

### **Implications for Future Research**

Although there are myriad studies on the separate topics of adjuncts and performance-based funding, this study provides a foundation for future studies to connect the topics further. Since Tennessee has a relatively aggressive performance-based funding approach when compared to other states, it may be illuminating to duplicate this study in another location. This study could be replicated in another performance-based funding state with a less aggressive formula, or in a state without an outcomes-based funding process to see if the results differ related to student success outcomes. It may also be interesting to drill down further on institution types and mission focuses to better explore the impact that these features have on outcomes and funding. Furthermore, the effect sizes for graduation rates ( $\eta^2 = .239$ ) was considered large (Cohen, 1988). Even though the ANCOVA results were not significant, a large effect size may

suggest that further research is needed with increased power (Fritz et al., 2011). One method to increase the power of a statistical test is by obtaining a larger sample size; thus, this study may produce different results if conducted using more institutions from other states with funding formulas similar to that of Tennessee.

Another possible avenue for research based on this study is to examine which institutions, if any, within the state of Tennessee have adjunct support measures in place. A qualitative approach to this research would be interesting, not only to determine what supports and resources are offered by institutions, but also how adjuncts perceive the support, or lack thereof. An explanation to the lack of significant results may be that adjunct support initiatives are in place, so it would be interesting to see if that is the case. Furthermore, it would be interesting to gauge adjunct perspectives regarding outcomes-based funding at both 2- and 4-year institutions and note differences and similarities based on faculty status and institution type.

While this study focused solely on institutional data, it would also be interesting to delve further into student demographics at these institutions. Since previous research has suggested that performance-based funding may influence enrollment practices, it may be beneficial to examine student body demographics in relation to faculty status, retention and graduation rates, and performance-based funding points earned. In addition, examining the courses taught by adjuncts may provide further insight into how adjunct instructors are utilized in the state of Tennessee. Specific course information is not available through IPEDS and was thus not considered for this study.

### **Conclusions**

This study appears to be one of the first to examine whether faculty status is related to points received through a performance-based funding formula. While the issue of an overreliance

and under-support of adjunct instructors is still very much a prevalent issue in higher education, the results of this study indicated that faculty status does not directly relate to performance-based funding points. The neoliberal environment of higher education, especially in states with outcomes-based funding, causes many leaders to adopt a more strategic and competitive approach to all decision-making; while this study did not show a direct connection between faculty status and performance-based funding outcomes, it provides a foundation for future research and a framework for leaders to use when approaching the issues of adjunct support and outcomes-based initiatives.

## References

- Abdul-Alim, J. (2014). The price of performance: Reports examine the effectiveness of performance-based funding for colleges. *Diverse: Issues in Higher Education*, 29(26), 14–15.
- Alshehri, Y. M. (2016). Performance-based funding: History, origins, outcomes and obstacles. *Journal of Higher Education Theory and Practice*, 16(4), 33–42.
- Bettinger, E. P., & Long, B. T. (2012). Does cheaper mean better? The impact of using adjunct instructors on student outcomes. *The Review of Economics and Statistics*, 92(3), 598–613, [https://doi.org/10.1162/REST\\_a\\_00014](https://doi.org/10.1162/REST_a_00014)
- Buch, K., McCullough, H., & Tamberelli, L. (2017). Understanding and responding to the unique needs and challenges facing adjunct faculty: A longitudinal study. *International Journal of Learning, Teaching and Educational Research*, 16(10), 27–40. <https://doi.org/10.26803/ijlter.16.10.3>
- Callahan, M. K., Meehan, K., Shaw, K. M., Slaughter, A., Kim, D. Y., Hunter, V. R., Lin, J., & Wanstein, L. (2017). *Implementation and impact of outcomes-based funding in Tennessee*. Research for Action. [https://www.tn.gov/content/dam/tn/thec/bureau/fiscal\\_admin/fiscal\\_pol/obff/research/Implementation\\_and\\_Impact\\_of\\_OBF\\_in\\_Tennessee\\_-\\_Research\\_for\\_Action.pdf](https://www.tn.gov/content/dam/tn/thec/bureau/fiscal_admin/fiscal_pol/obff/research/Implementation_and_Impact_of_OBF_in_Tennessee_-_Research_for_Action.pdf)
- Characteristics of Adjunct Faculty Members, 2018. (2019, August 23). *Chronicle of Higher Education*, 65(40), 6.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

- Curtis, J. W., Mahabir, C., & Vitullo, M. W. (2016). Sociology faculty members employed part-time in community colleges: Structural disadvantage, cultural devaluation, and faculty-student relationships. *Teaching Sociology*, 44(4), 270–286.  
<https://doi.org/10.1177/0092055X16654744>
- Deel, K. (2016). Will social critique force the faculty role to evolve? *Higher Education Politics and Economics*, 2(1), 46–55.
- Dolan, D. M., Hall, Ms. S., Karlsson, C. R., & Martinak, M. L. (2013). Five years later: Maryland adjuncts tell us (again) who they are and what they want. *The Journal of Continuing Higher Education*, 61, 35–45. <https://doi.org/10.1080/07377363.2013.758552>
- Dougherty, K. J. (2018). Performance-based funding, higher education in the U.S. *Encyclopedia of International Higher Education Systems and Institutions*, [https://doi.org/10.1007/978-94-017-9553-1\\_63-2](https://doi.org/10.1007/978-94-017-9553-1_63-2)
- Eagan Jr., M. K., Jaeger, A. J., & Grantham, A. (2015). Supporting the academic majority: Policies and practices related to part-time faculty's job satisfaction. *The Journal of Higher Education*, 86(3), 448–480. <https://doi.org/10.1080/00221546.2015.11777371>
- Ehrenberg, R. G., & Zhang, L. (2005). Do tenured and tenure-track faculty matter? *The Journal of Human Resources*, 40(3), 647–659.
- Fagan-Wilen, R., Springer, D. W., Ambrosino, B., & White, B. W. (2006). The support of adjunct faculty: An academic imperative. *Social Work Education*, 25(1), 39–51.  
<https://doi.org/10.1080/02615470500477870>
- Fritz, C. O., Morris, P. E., & Richler, J. J. (2011). Effect size estimates: Current use, calculations, and interpretation. *Journal of Experimental Psychology*, 141(1), 2–18.  
<https://doi.org/10.1037/a0024338>

- Hagood, L. P. (2019). The financial benefits and burdens of performance-based funding in higher education. *Educational Evaluation and Policy Analysis*, 41(2), 189–213, <https://doi.org/10.3102/0162373719837318>
- Hillman, N. W., Fryar, A. H., & Crespín-Trujillo, V. (2018). Evaluating the impact of performance funding in Ohio and Tennessee. *American Educational Research Journal*, 55(1), 144–170. <https://doi.org/10.3102/0002831217732951>
- Hilton III, J., & Plummer, K. (2013). Examining student spiritual outcomes as a result of a general education religion course. *Christian Higher Education*, 12(5), 331–348. <https://doi.org/10.1080/15363759.2013.824352>
- Hu, X. (2019). Efficiency for whom? Varying impact of performance-based funding on community colleges in Louisiana. *Community College Review*, 47(4), 323–359. <https://doi.org/10.1177/0091552119864409>
- Johnson, I. (2011). Contingent instructors and student outcomes: An artifact or a fact? *Research in Higher Education*, 52(8), 761–785, <https://doi.org/10.1007/s11162-011-9219-2>
- Johnson, N. & Yanagiura, T. (2016). Early results of outcomes-based funding in Tennessee. Lumina Foundation. <https://www.luminafoundation.org/files/resources/early-results-tn-0314-1.pdf>
- Kelchen, R., & Stedrak, L. J. (2016). Does performance-based funding affect colleges' financial priorities? *Journal of Education Finance*, 41(3), 302–321. <https://doi.org/10.1353/jef.2016.0006>
- Kezar, A. (2018). A new vision for the professoriate. *Change: The magazine of higher learning*, 50(3/4), 84–87. <https://doi.org/10.1080/00091383.2018.1509616>



- Kezar, A., DePaola, T., & Scott, D. T. (2019). *The gig academy: Mapping labor in the neoliberal university*. Johns Hopkins University Press.
- Lang, D. W. (2016). Incentive funding meets incentive-based budgeting: Can they coexist? *Canadian Journal of Higher Education*, 46(4), 1–22.
- Larocca, R., & Carr, D. (2020). The effects of higher education performance funding on graduation rates. *Journal of Education Finance*, 45(4), 493–526.  
[https://muse.jhu.edu/article/760719/pdf?casa\\_token=T6sI21u3TigAAAAA:aMBWCgJppbndcYBG57fj9DjMtybgX\\_2M57fTriDXQqUNy9obqduaB96tZgjHH5FPK7S-wlS26bI](https://muse.jhu.edu/article/760719/pdf?casa_token=T6sI21u3TigAAAAA:aMBWCgJppbndcYBG57fj9DjMtybgX_2M57fTriDXQqUNy9obqduaB96tZgjHH5FPK7S-wlS26bI)
- Li, A. Y., & Ortagus, J. C. (2019). Raising the stakes: Impacts of the Complete College Tennessee Act on underserved student enrollment and sub-baccalaureate credentials. *The Review of Higher Education*, 43(1), 295–333. <https://doi.org/10.1353/rhe.2019.0097>
- McKinney, L., & Hagedorn, L. S. (2017). Performance-based funding for community colleges: Are colleges disadvantaged by serving the most disadvantaged students? *The Journal of Higher Education*, 88(2), 159–182. <https://doi.org/10.1080/00221546.2016.1243948>
- Meehan, K. & Kent, D. C. (2020). *Developing a statewide college completion agenda: Lessons from Tennessee*. Research for Action. [https://www.researchforaction.org/wp-content/uploads/2021/07/1379.RFA\\_Lessons\\_from\\_Tennessee\\_V6-003.pdf](https://www.researchforaction.org/wp-content/uploads/2021/07/1379.RFA_Lessons_from_Tennessee_V6-003.pdf)
- Meixner, C., Kruck, S. E., & Madden, L. T. (2010). Inclusion of part-time faculty for the benefit of faculty and students. *College Teaching*, 58(4), 141–147.  
<https://doi.org/10.1080/87567555.2010.484032>
- Monks, J. (2009). Who are the part-time faculty? *Academe*, 95(4), 33–37.

- Murray, D. S. (2019). The precarious new faculty majority: Communication and instruction research and contingent labor in higher education. *Communication Education*, 68(2), 235–245. <https://doi.org/10.1080/03634523.2019.1568512>
- Nisar, M. A. (2014). Higher education governance and performance-based funding as an ecology of games. *Higher Education*, 69, 289–302. <https://doi.org/10.1007/s10734-014-9775-4>
- Ortagus, J. C., Kelchen, R., Rosinger, K., & Voorhees, N. (2020). Performance-based funding in American higher education: A systematic synthesis of the intended and unintended consequences. *Educational Evaluation and Policy Analysis*, 42(4), 520–551. <https://doi.org/10.3102/0162373720953128>
- Parker, D. M., Brown, L. T. M., & Holmes, B. D. (2018). Preparing university adjunct faculty to teach. *Journal of Higher Education Theory and Practice*, 18(7), 115–120. <https://doi.org/10.33423/jhetp.v18i7.268>
- Ran, F. X., & Sanders, J. (2020). Instruction quality or working condition? The effects of part-time faculty on student academic outcomes in community college introductory courses. *AERA Open*, 6(1), 1–18. <https://doi.org/10.1177/2332858420901495>
- Reichard, G. W. (2003). The choices before us: An administrator's perspective on faculty staffing and student learning in general education courses. *New Directions for Higher Education*, 123, 61–69. <https://doi.org/10.1002/he.121>
- Ross, D. (2019). Game Theory. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Winter 2019 ed.). Stanford University. <https://plato.stanford.edu/archives/win2019/entries/game-theory/>

- Scott, G., & Danley-Scott, J. (2015). Two loops that need closing: Contingent faculty perceptions of outcomes assessment. *The Journal of General Education*, 64(1), 30–55.  
<https://doi.org/10.1353/jge.2015.0004>
- Shieh, G. (2019). On sample-size calculations for precise contrast analysis in ANCOVA. *The Journal of Experimental Education*, 87(2), 238–259.  
<https://doi.org/10.1080/00220973.2017.1421518>
- Slaughter, S., & Rhoades, G. (2004). *Academic capitalism and the new economy: Markets, state and higher education*. Johns Hopkins University Press.
- Starcher, K., & Mandernach, B. J. (2016). An examination of adjunct faculty characteristics: Comparison between non-profit and for-profit institutions. *Online Journal of Distance Learning Administration*, 19(1), 1–16.
- Tennessee Board of Regents (n.d.). *About the Tennessee Board of Regents*.  
<https://www.tbr.edu/board/tennessee-board-regents>.
- Tennessee Higher Education Commission. (n.d.). *THEC Outcomes-based funding formula*.  
[https://www.tn.gov/content/dam/tn/thec/bureau/fiscal\\_admin/fiscal\\_pol/obff/1 -  
\\_Outcomes Based Funding Formula Overview - One Page.pdf](https://www.tn.gov/content/dam/tn/thec/bureau/fiscal_admin/fiscal_pol/obff/1_-_Outcomes_Based_Funding_Formula_Overview_-_One_Page.pdf)
- Testa, J. (2007). *Funding Tennessee's public colleges and universities: The outcomes-based funding formula*. Tennessee Comptroller of the Treasury.  
[https://comptroller.tn.gov/content/dam/cot/orea/advanced-  
search/2017/2017\\_OREA\\_OutcomesBasedFund.pdf](https://comptroller.tn.gov/content/dam/cot/orea/advanced-search/2017/2017_OREA_OutcomesBasedFund.pdf)
- Tight, M. (2019). The neoliberal turn in higher education. *Higher Education Quarterly* 73(3), 273–284. <https://doi.org/10.1111/hequ.12197>

- Umbach, P. D. (2007). How effective are they? Exploring the impact of contingent faculty on higher education. *The Review of Higher Education*, 30(2), 91–123.  
<https://doi.org/10.1353.rhe.2006.0080>
- Umbricht, M. R., Fernandea, F., & Ortagus, J. C. (2017). An examination of the (un)intended consequences of performance funding in higher education. *Educational Policy*, 31(5), 643–673. <https://doi.org/10.1177/0895904815614398>
- Unintended Impacts of Performance Funding. (2013). *ASHE Higher Education Report*, 39(2), 71–77. <https://doi-org.ezproxy.lib.apsu.edu/10.1002/aehe.20008>
- U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS). (2018). *Compare Institutions* [Data set]. <https://nces.ed.gov/ipeds/datacenter/InstitutionByName.aspx?goToReportId=1>.
- Von Neumann, J., & Morgenstern, O. (1944). *Theory of Games and Economic Behavior*. Princeton: Princeton University Press.
- Watermeyer, R., & Olssen, M. (2016). ‘Excellence’ and exclusion: The individual costs of institutional competitiveness. *Minerva*, 54, 201–218. <https://doi.org/10.1007/s11024-016-9298-5>
- Wayt, L. K., & LaCost, B. Y. (2016). Transitioning to performance-based state funding: Concerns, commitment, and cautious optimism. *Educational Considerations*, 43(2), 1–6.
- Xu, D. (2019). Academic performance in community colleges: The influences of part-time and full-time instructors. *American Educational Research Journal*, 56(2), 368–406.  
<https://doi.org/10.3102/0002831218796131>

Ziskin, M. B., Rabourn, K. E., & Hossler, D. (2016). Performance-based funding of higher education: Analyses of policy discourse across four case studies. *Journal for Critical Education Policy Studies*, 16(2), 164–210.

Zubrow, J. (2012). Engaging adjunct faculty in program assessment. *Journal of Assessment and Institutional Effectiveness*, 2(1), 77–102.

## Appendix A

### Research Matrix

Research Question	Construct (or Variable)	Data Collection Source	Data Collection (timing, frequency)	Data Analysis Method
1. When controlling for institution type, is there a difference in student retention rates based on the percentage of part-time instructors at 2- and 4-year higher education institutions in Tennessee?	IV – institution type (2- or 4-year)	Secondary data, IPEDS	Secondary data, 2010/2011 – 2018/2019 academic years	ANCOVA using SPSS
	DV – student retention rates			
	CV – percentage of adjunct faculty			
	Percentage of adjunct faculty	Secondary data, IPEDS	Secondary data, 2010/2011 – 2018/2019 academic years	Pearson correlation using SPSS
	Student retention rates			
2. When controlling for institution type, is there a difference in student graduation rates at 2- and 4-year higher education institutions in Tennessee?	IV – institution type (2- or 4-year)	Secondary data, IPEDS	Secondary data, 2010/2011 – 2018/2019 academic years	ANCOVA using SPSS
	DV – student graduation rates			
	CV – percentage of adjunct faculty			
3. When controlling for institution type, is there a difference in performance-based funding points earned based on the percentage of part-time instructors at 2- and 4-year higher education institutions in the Tennessee performance-based funding formula?	IV – institution type (2- or 4-year)	Secondary data, IPEDS and THEC	Secondary Data and existing data reports, 2010/2011 – 2018/2019 academic years	ANCOVA using SPSS
	DV – number of points received on performance-based funding formula			
	CV – percentage of adjunct faculty			

## Appendix B

### IRB Approval



Date: 10/06/2021

Re 21-042: TITLE OF PROJECT: Save Now, Pay Later? The Effects of Adjunct Instructors on Performance-Based Funding

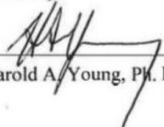
Dear Dr. McConnell and Ms. Michael,

We appreciate your cooperation with the human research review process. This letter is to inform you that study 21-042 the application has been reviewed on an expedited level. It is my pleasure to tell you that your application is approved.

This approval is subject to APSU Policies and Procedures governing human subject research. The IRB reserves the right to withdraw approval if unresolved issues are raised during the review period. Any changes or deviations from the approved protocol must be submitted in writing to the IRB for further review and approval before continuing.

This approval is for one calendar year and a closed study report or request for continuing review is required on or before the expiration date, 10/05/2022. If you have any questions or require further information, you can contact me by phone (931-221-7059) or email ([young@apsu.edu](mailto:young@apsu.edu)).

Sincerely,



Harold A. Young, Ph. D. Chair, APIRB