DISSERTATION

ECONOMICS AND INTEGRITY: A CRITICAL QUANTITATIVE APPROACH TO PANDEMIC-ERA LAYOFFS IN HIGHER EDUCATION

Submitted by

Erica P. Monnin

School of Education

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Doctoral Committee:

Advisor: Kari Dockendorff

Vincent Basile
Samantha Conroy
Alex C. Lange

ABSTRACT

ECONOMICS AND INTEGRITY: A CRITICAL QUANTITATIVE APPROACH TO PANDEMIC-ERA LAYOFFS IN HIGHER EDUCATION

State-funded public higher education institutions have missions of serving their state and local communities. Their nonprofit status reflects higher education's role as an important social institution and a source of public good. During the COVID-19 pandemic, colleges and universities across the United States faced unprecedented financial challenges as revenue sources threatened to run dry and new expenses added new demands on their operational budgets. To rebalance their budgets, many institutions turned to faculty and staff layoffs as a means of cost-cutting. Layoffs, a common practice in the corporate sector, are incongruent with higher education's mission as a public good. During the pandemic, news sources and press releases cited layoffs in higher education as an inevitable outcome of dire financial challenges, asserting the need for budget cuts and emphasizing the limited options available for higher education to reduce expenses.

My study tests implicit assumptions around the connection between the financial crisis and the necessity of layoffs. I take a critical quantitative approach to interrogating layoffs in higher education from 2020 to 2023 at 146 institutions across five large, centralized state higher education system. I test the relationship between institutional enrollment and financial characteristics and the occurrence of layoffs using quantitative methods. Of the 47 variables tested, I found three variables had statistically significant relationships with layoffs. Out-of-state student enrollment in the 2019-20 academic year, receiving more federal emergency funding per full-time equivalent (FTE) enrolled student, and having a higher percentage of students receiving

Pell Grants in 2019-20 all had statistically significant relationships with layoffs during the timeframe of my study. My findings challenge assumptions about institutions' financial situations that conduct layoffs and complicate broad narratives around institutional financial health and faculty and staff layoffs during the pandemic.

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CHAPTER 1

INTRODUCTION: CHANGING BUDGETARY PRIORITIES IN HIGHER EDUCATION AND THE CHALLENGE OF MISSION ALIGNMENT

When the COVID-19 pandemic reached the United States in March 2020, sudden stay-at-home orders dramatically impacted the workforce, shifting some employees to work-from-home arrangements and rendering others unable to complete their jobs. Corporate America responded quickly, reducing expenditures to protect their businesses (Cox, 2022). A staff report from the House Select Subcommittee on the Coronavirus Crisis found that the 12 largest employers in the US, which included Chevron, Disney, and Walmart, collectively laid off over 100,000 workers during the pandemic (Cox). Chevron Corporation announced it would lay off 10-15% of its workforce due to restructuring in spring 2020 (Khan & Hiller, 2020). By spring 2021, Disney laid off 32,000 of its 203,000 employees, mostly workers in their parks (Whitten, 2020). Meanwhile, Walmart restructured operations and eliminated hundreds of corporate employees while reporting a 74% growth in online sales in early 2020 (Boyle, 2020; Chochrek, 2020). Corporate, profit-driven businesses responded swiftly during the pandemic to realign spending and protect their business interests or take advantage of the favorable environment for organizational change (Boyle, 2020; Chochrek, 2020; Cox, 2022; Khan & Hiller, 2020; Whitten). Layoffs and reorganization are standard narratives in corporate America. Simultaneously, the sudden onset and scale of the COVID-19 pandemic exposed financial vulnerabilities and exacerbated decades of economic challenges in higher education.

Higher Education Institutions as Corporations

Despite its different priorities and values, the not-for-profit higher education sector was not immune to corporate-style cost cuts and layoffs during the pandemic (Lederman, 2021). Employee salaries and benefits comprise a large portion of institutional budgets and can draw attention as institutional leadership seeks areas to reduce expenses (Weisbrod et al., 2010). In 2014, higher education institutions (HEIs) devoted 60-70% of their spending to employee compensation, excluding institutional expenditure on hospitals, auxiliaries, or other independent operations (Desroches & Kirshstein, 2014). In the financial panic from the pandemic, staff and faculty often suffered through layoffs and staffing challenges resulting from cuts to personnel budget lines (Adams-Prassl et al., 2020). The higher education workforce was 3.9% smaller in the fall of 2020 than in the fall of 2019 (Lederman, 2021). Reduced staffing took the form of layoffs, furloughs, early retirement incentives, and freezing positions when individuals left their roles, leaving work to be redistributed to those left behind (Adams-Prassl et al.; Burke, 2020; Westcott, 2020; Whitford, 2020).

Critically, individuals in eliminated roles were often disproportionately women, people of color, or those without college degrees, who often suffer the most significant burden in layoffs (Adams-Prassl, 2020; Burke, 2020; Magolda, 2016). Similarly, layoffs in corporate America disproportionately impacted hourly workers, women, people of color, and older workers (Cox, 2022). Employee reductions opened the door for staff and faculty upheaval, loss of productivity, legal implications, and the betrayal of core institutional values of equity and integrity (Smith, 2019; Vasquez & Mangan, 2019; Weisbrod et al., 2010). While challenging in any industry, the willful termination of employees in times of perceived economic hardship raised moral dissonance in higher education.

The decision to lay off employees at HEIs is a complex and painful step because of the allegedly altruistic mission many institutions promote (Kezar, 2004; Weisbrod et al., 2010). Kezar (2004) emphasized the charter between higher education and the public and reiterated a connection between higher education and the public good, suggesting a mission of service to the larger society. Giroux (2010) pointed to a shift in higher education from serving the public good toward more neoliberal values, which furthered the implementation of corporate practices in higher education. HEIs' neoliberal change justified layoffs as necessary for institutional survival, mimicking standard corporate practices (Giroux). Thus, particularly in a financial crisis, HEIs operate more like for-profit businesses than justice-centered educational institutions (Giroux).

Despite their neoliberal business operations, many HEIs still have missions that reflect a greater good and service toward a more just society. For example, Colorado State University's (CSU) (n.d.) mission proclaims, "Inspired by its land-grant heritage, Colorado State University is committed to excellence, setting the standard for public research universities in teaching, research, service and extension for the benefit of the citizens of Colorado, the United States and the world" (n.p.). Colorado State University leaders worked hard to retain full-time, permanent employees by deploying other cost-cutting measures during the pandemic (Lyell, 2020). CSU's 2020-21 budget included $17 million in budget cuts, primarily managed through hiring freezes and voluntary early retirement incentives (Hooker, 2020). Hooker quoted then-President of CSU Joyce McConnell, who recognized the importance of CSU to the local community, "We're the region's largest employer, so keeping Colorado State University healthy is crucial for Northern Colorado's economic recovery, and this budget is a great collaborative effort that truly supports our students and employees" (n.p.). While not entirely painless, CSU's efforts helped protect the institution's workforce and the region's reliance on CSU as an employer. However, lofty mission

statements contrasted sharply with reality for employees at many other institutions as they faced layoffs or other changes in employment status, compromising their livelihoods and healthcare in a worldwide economic and public health crisis.

My research explores relationships between institutional characteristics and actions often anecdotally taken for granted in news stories and qualitative research regarding layoffs in United States higher education. When a financial crisis is on the horizon, as happened with the COVID-19 pandemic in March 2020, there is often quick speculation about how higher education institutions will react to protect business interests and maintain operations (Westcott, 2020; Whitford, 2020). Westcott (2020) interviewed Robert Zemsky, a professor of higher education at the University of Pennsylvania, about the financial prospects for higher education early in the pandemic. Zemsky proposed that 20% of institutions could be at significant financial risk from lost tuition revenue and delayed payments from the state (Westcott). Zemsky recommended that institutions rethink and rationalize their budgets during the pandemic, explicitly calling out excess academic programs and inflexible employment arrangements with tenured faculty members (Westcott).

Journalists and researchers often report layoffs as an unavoidable business operation, connecting layoffs to institutional factors, such as a low endowment, reliance on state appropriations, or tuition dependence (Archibald & Feldman, 2008; Carlson, 2018; Desroches & Kirshstein, 2014; Jones & Wellman, 2010; Magolda, 2016; Ortagus & Yang, 2018; Powell & Powell Rey, 2015; Romano et al., 2010; Rosinger et al., 2022; Santos & Haycock, 2016). While reviewing the literature, I found ample research on layoffs, furloughs, and reorganizations within higher education. However, I found no quantitative work that drew conclusive relationships between the decision to lay off employees and the various financial factors that allegedly drive

this decision. Schwandt (1997) wrote critical social science bridges theory and practice to shed light on the inconsistencies and contradictions between belief systems and social practices. The imperative to take a critical lens to the practice of layoffs offers the potential to uncover inconsistencies between values and actions and challenges HEIs to move forward with greater values integrity.

The broad assertion made in the literature was that higher education institutions at risk of a financial shortfall would take the step of laying off staff as a last resort to salvage financial solvency (Archibald & Feldman, 2008; Carlson, 2018; Desroches & Kirshstein, 2014; Jones & Wellman, 2010; Magolda, 2016; Ortagus & Yang, 2018; Powell & Powell Rey, 2015; Romano et al., 2010; Rosinger et al., 2022; Santos & Haycock, 2016). I could not identify empirical, quantitative evidence suggesting that layoffs occurred only at institutions on the brink of financial ruin or that they are used as a last resort rather than a routine step in decreasing expenditures. Further, if there is a connection between financially at-risk institutions and layoffs, I was interested in understanding the specific financial factors that most closely predict layoffs. My research clarifies relationships often assumed in discussions of layoffs and identifies financial predictors of layoffs at institutions.

Statement of the Problem: Mission Misalignment in Institutional Crisis Response

Founded initially with varying missions of educating a robust upper class of white male leadership for the new American colonies or assimilating Native Americans, higher education institutions shaped US society in a way the powerful found appealing (Thelin, 2019; Wilder, 2013). Though imperfect since their inception, many colleges and universities shifted to promote equity and social betterment as a part of their mission and goals (Kezar, 2004; Thelin, 2019). As access to higher education improved through the Morrill Land Grant Acts, the Servicemen's

Readjustment Act, the Middle Income Student Assistance Act, and other racial and socioeconomic inequity gaps narrowed. Meanwhile, the US middle class grew stronger through the mid-twentieth century (Thelin, 2019). However, access and equity stalled with the onset of competing financial priorities and decreased public funding for higher education beginning in the 1970s (Slaughter & Leslie, 1997). Decreased resources required institutions to rethink business practices and function more like traditional for-profit businesses (Giroux, 2010). While business operations at HEIs became increasingly corporate, many institutions continued to espouse mission statements highlighting their role in serving their community and preparing students to do the same.

Higher Education as a Public Good

Higher education is different than most corporate, for-profit entities as it makes at least a nominal promise to the betterment of society and to serve the public good (Kezar, 2018). After founding the United States' initial colonial colleges, higher education proliferated in the 1800s as states approved charters for institutions that served their local communities (Thelin, 2019). The Morrill Land Grant Acts represented a collaborative effort between federal and state governments to establish HEIs under the state's oversight and direction, meeting local state needs for higher education (Thelin). Thelin noted the local character of nineteenth-century HEIs, which relied on their community for students and donors and were responsive to the curricular demands of their region. After World War II, public support for higher education expanded, focusing on educating soldiers returning from war and keeping the US at the forefront of scientific innovation and national defense (Thelin).

Institutions' Missions

Through ebbs and flows, public commitment to higher education declined in the 1970s, and institutional operations shifted to meet an increasingly complex set of external priorities (Slaughter & Leslie, 1997). Thelin (2019) lamented conflicting priorities and mission drift in higher education, writing:

> The challenge for higher education in the United States during the twenty-first century is to acknowledge its historical good fortune and accept its role as a mature institution, along with the responsibilities accompanying that maturity. This task is not a matter of money but of rediscovering essential principles and values that have perhaps been obscured in the recent blurring of educational activities and commercial ventures. (p. 362)

Though institutional goals shifted and diverged with changing political and economic landscapes, many institutions maintain a public-facing identity committed to serving their community. As an example of their commitment to service, HEIs commonly use their unique missions, visions, and values statements to proclaim their priorities and reinforce their not-for-profit identity. The five HEI systems sampled in this research — the California State University system, the University System of Georgia, the Kansas Board of Regents system, the Minnesota State system, and the State University of New York system — are no exception.

The five systems' missions spoke to the good they do for students and their state communities. Below, I highlight relevant excerpts of the mission, vision, and value statements from the five systems sampled in my study to provide an example of this proposition of social good.

Table 1.1

Sample of HEI Systems' Missions, Visions, and Values

System	Mission, Vision, and Values
California State University system	Mission includes "...To provide opportunities for individuals to develop intellectually, personally, and professionally…To prepare significant numbers of educated, responsible people to contribute to California's schools, economy, culture, and future…To provide public services that enrich the university and its communities." (California State University, n.d.).
University System of Georgia	System values include "...We value diversity of intellectual thought and expression for all. We are dedicated to continuous improvement. We hold ourselves accountable to the public and one another. We invest in people" (University System of Georgia, n.d.)
Kansas Board of Regents system	Mission includes "...The Board of Regents' purpose is to support this diverse group of public higher education institutions, each of which contributes to the social and economic well-being of Kansas and its citizens, and each of which seeks excellence…The system provides broad and affordable access to higher education, prepares students for the workforce and for life, and benefits the State as a whole through economic growth, research contributions, and advancing other aspirational goals of each institution" (Kansas Board of Regents, n.d.).
Minnesota State system	System mission proclaims, "Minnesota State Colleges and Universities provides accessible high quality, future-oriented education and community service through technical, pre-baccalaureate, baccalaureate, master's, occupational and continuing education programs" (Minnesota State, n.d.).
State University of New York system	System commits to fulfilling its educational mission by, "exercise care to develop and maintain a balance of its human and physical resources that…encourage, support and participate through facility planning and projects, personnel policies and programs with local governments, school districts, businesses and civic sectors of host communities regarding the health of local economies and quality of life" (State University of New York, 2023b).

Table 1.1 illustrates how HEIs' missions, visions, and values represent institutions' roles in bettering the local community. Institutions' references to social good, often found at the end of institutional mission statements, are framed as the goal of all their work and education, including the stable employment they offer in their communities.

Roles in Local Communities

In many regions, higher education institutions play an essential role in the local community and provide steady employment opportunities (Magolda, 2016). For example, the SUNY system proudly proclaimed that 93% of New Yorkers live within 15 miles of a SUNY campus, and, in many regions, SUNY is the largest employer in the community (State University of New York, 2023a). Employment opportunities range from tenured faculty positions to hourly, minimum-wage positions that many in the local community rely upon for stable, convenient employment. In the past, many of these roles, from faculty work to janitorial positions, were viewed as reliable work with good benefits (Andrew, 2020; Magolda, 2016). However, with increasing institutional reliance on a more flexible workforce, even tenured faculty positions are no longer immune to the ebb and flow of institutional labor demands (Andrew, 2020).

Before the COVID-19 pandemic, Magolda (2016) predicted employment challenges in an ethnographic study of custodians working on college campuses. Magolda amplified the voices of custodial workers, highlighting their relationships with their roles and the challenges they face as the lowest-paid staff at higher education institutions. Notably, Magolda outlined reasons custodial positions on campus were desirable to people in those roles and shared that many participants valued the job security that campus custodial positions provided. For participants, even if custodial positions offered lower wages than other work options, the stability, health, and education benefits outweigh the drawbacks of lower hourly wages (Magolda). However, Magolda also spoke with participants who feared changes in the appeal of campus jobs, citing institutional budget cuts that eliminated positions, reduced benefits, and drew job security into question.

Job security concerns foreshadowed changes that occurred in the spring of 2020 when the pandemic accelerated shifts in the labor market that were already underway at the time of Magolda's (2016) research. Outsourcing of hourly employees, pushing out more experienced (and expensive) workers, increasing oversight, and standardized operations resulting in layoffs were concerns noted in Magolda's study. Those concerns came to fruition at many institutions amidst the pandemic. Some HEIs may be financially at risk, but the unique character of HEIs and their values are a point of contention in how institutions implement budget cuts and ensuing layoffs (Michaelson & White, 1996; Weisbrod et al., 2010). For organizations purporting a mission of service to the community, personnel reductions had the potential to sow seeds of distrust within the institution, impact employee morale and productivity, damage institutional reputation, and leave individuals in a vulnerable economic situation (Amundson, 2004; Hohman et al., 2013; Larkey, 1993; Love, 2010; Weisbrod et al., 2010). Giroux (2002) argued that higher education was not designed to function as a corporate entity, which makes corporate business practices at HEIs more misaligned. Equally troubling was the lack of transparency and evidence supporting the need for employee reductions.

Neoliberalism in Higher Education

To critically consider the necessity of layoffs in achieving institutional financial goals, one should first reflect on the nature of higher education, which has increasingly been restructured to align with corporate, capitalist business models (Kezar, 2004). In the late 20th century, many higher education institutions abandoned post-war, mid-century goals of promoting education and democracy in their local community (Giroux, 2010; Kezar, 2004; Slaughter & Leslie, 1997). In the early 1980s, public support for higher education decreased as governments slashed state appropriations and the appetite for public funding for higher education waned

(Slaughter & Leslie, 1997). Higher education institutions sought new revenue streams in response, becoming more financially dependent on diverse external revenue, volatile market whims, and fickle tuition revenue (Pfeffer & Salancik, 2003).

Kezar (2004) summarized higher education's shifting priorities, suggesting that HEIs, are often at the mercy of government and industry and might thus redefine the public good they serve. Kezar further wrote, "Governing powers…have redefined the public good as private advancement and economic attainment, abandoning long-standing missions of social development, social justice, and democratic engagement" (p. 430). Institutions began catering to the demands of ever-shifting industries rather than the needs of local students and communities (Kezar, 2004). Researchers commonly refer to this shift as higher education's realignment toward neoliberal values (Giroux, 2010; Hamer & Lang, 2015; Kezar, 2004; Slaughter & Leslie, 1997; Squire et al., 2018).

Squire et al. (2018) defined neoliberalism as the "marketization and commodification of goods for capitalistic gain" (p. 11). In other words, neoliberalism is the "economic and social philosophy that imposes free-market fundamentalist values on all human interactions," which includes "privatization of public good; the corporate demand for higher profits at the expense of livable working conditions and pay for working- and middle-class people; [and] the rolling back of social welfare protections to render all labor contingent and insecure" (Hamer & Lang, 2015, p. 899). The impact of higher education's neoliberal shift transcended the student experience and educational output to impact all institutional business operations, including labor arrangements. HEIs adapted to neoliberal market demand with changes in staffing that allowed them to quickly increase and decrease labor expenses in response to market fluctuations (Magolda, 2016; Pfeffer & Salancik, 2003). In uncertain times, higher education institutions took cues from the business

world to aggressively cut costs, and personnel expenses are an appealing place for leadership to begin trimming (Weisbrod et al., 2010).

During the pandemic, layoffs at HEIs had inequitable racial and social class outcomes, supporting the arguments of Hamer and Lang (2015) and Squire et al. (2018) around white supremacy and structural violence in higher education employment. Predominantly white institutional leadership decided to maintain or release employees, disproportionately impacting workers of color and those with fewer job protections and financial security (Bischel & McChesney, 2017). When trimming staff expenses, non-exempt workers may have the fewest labor protections and be viewed as the least connected to the institution's core functions (Burke, 2020). 44% of service and maintenance workers at participating HEIs were people of color, incidentally the same labor category that experienced the most considerable reduction in employment from 2020-21, at - 4.1% (Nadel-Hawthorne et al., 2021). When people of color are disproportionately represented in lower-ranking, lesser-paid, and disempowered positions within institutions, they are vulnerable to the employment whims of institutional leadership. As a result, people of color represented more than half of early job losses during the pandemic (Bauman, 2021). Through their neoliberal operations, mimicking for-profit companies' business and labor practices, HEIs send conflicting messages about their ethics and values, touting their not-for-profit status and altruistic missions while treating the workers as disposable when it best suits their business interests (Giroux, 2002; Giroux, 2010; Slaughter & Leslie, 1997). Layoffs are an example of institutions operating more like for-profit businesses than justice-centered educational institutions.

The neoliberal shift of HEIs threatened their core character and values of critical discourse and the public good (Giroux, 2002). Squire et al. (2018) argued that the same logic that

powered colonialism and imperialism now exists within higher education systems. Squire et al. (2018) argued further that neoliberalism reflects modern manifestations of colonial, imperialistic mindsets and represents a reimagination of the slave code. While upper administration in higher education continues to earn competitive, executive-level pay, 737,000 non-academic workers in higher education did not make a living wage in 2012 (Hamer & Lang, 2015). Extreme income disparity is a cause for concern at allegedly justice-focused organizations. Hamer and Lang (2015) cited neoliberalism as the root cause of such structural violence in higher education. Squire et al. (2018) furthered the notion of structural violence; they proposed that modern tools of human resource management in higher education are reminiscent of the slave codes of the nineteenth century, which disempowered Black people and maintained societal power differentials.

Past Economic Challenges in Higher Education

Before the sudden shock of the COVID-19 pandemic, HEIs weathered decades of financial challenge and uncertainty. Literature cited decreased public funding and increased operational expenses as challenges to HEIs outside of any particular event or news cycle (Adams-Prassl et al., 2020; Archibald & Feldman, 2008; Carlson, 2018; Desroches & Kirshstein, 2014; Jones & Wellman, 2010; Magolda, 2016; Ortagus & Yang, 2018; Powell & Powell Rey, 2015; Romano et al., 2010; Rosinger et al., 2022; Santos & Haycock, 2016). Literature on the financial challenges of the Great Recession provided additional context to the pre-COVID economic state of the higher education industry (Barr & Turner, 2013; Brint et al., 2016; Gansemer-Topf et al., 2018; Turner, 2014). The challenges of decreased funding, increased expenses, and a recent financial crisis and recovery created a particularly volatile environment for the onset of the COVID-19 pandemic in higher education.

State appropriations rose and fell through economic booms and downturns in the late 20th century but tracked downward overall (Powell & Powell Rey, 2015). In 2015, state support per full-time enrolled student was down 20% from the rate in 1990, and state appropriations made up an average of 23% of public institutions' budgets, versus 25% made up by student tuition dollars (Santos & Haycock, 2016). State financial support for higher education reflected a shifting national philosophy on who should bear the cost of educating citizens and future leaders. Santos and Haycock (2016) cited decreased government support as a challenge for HEIs; they called for robust, intentional federal-state partnerships to act as a "renewed social compact that reinstates the promise of each generation to pay for the education of the next" (p. 16). Decreased public funding pushed HEIs to cut growing operational expenses, including reducing employee numbers and benefits, while also seeking alternative revenue sources (Ortagus & Yang, 2018; Pfeffer & Salancik, 2003; Romano et al., 2010; Rosinger et al., 2022).

While public funding slowed for higher education, operating costs increased. Concerns of administrative bloat dominate narratives on rising higher education costs (Archibald & Feldman, 2008; Carlson, 2018; Desrochers & Kirshstein, 2014). However, enrollment and staff grew from 2020 to 2024, and enrollment outpaced hiring at some institutions (Desrochers & Kirshstein). Institutions relied more than ever on part-time staff and adjunct faculty (Desrochers & Kirshstein). Desrochers and Kirshstein also acknowledged the growing ranks of administrative positions but cautioned, "whether this administrative growth constitutes unnecessary 'bloat' or was justified as part of the complexities involved in running a modern-day university remains up for debate" (p. 13). Desrochers and Kirshstein claimed that external economic pressures and inter-organizational competition for resources and prestige may be blamed for unchecked personnel expansion. Similarly, Archibald and Feldman (2008) found that service industries, like

higher education, are forced to compete with thriving goods-producing industries for workers, requiring higher wages and driving up expenses for HEIs. Additionally, increasing healthcare and pension costs outstripped salary costs as healthcare premiums grew and individuals lived longer past retirement, which strained institutions' pension budgets (Jones & Wellman, 2010). Many factors, including those detailed above, contributed to HEIs' growing expenses and created precarious conditions for the changes brought on by the Great Recession.

Literature on the impact of the Great Recession in higher education provided a helpful background in understanding HEIs' response to a specific, recent financial crisis. Organizations struggled with decreased public funding and revenue from endowments while student enrollment remained high, and organizations adapted to these new demands and constraints (Barr & Turner, 2013; Turner, 2014). During the Great Recession, measured from 2007 to 2010, HEIs shifted costs to students as enrollment rose and state subsidies decreased (Barr & Turner, 2013). From 2007 to 2010, post-secondary enrollment increased from 18.2 million to 21 million, encompassing students from increasingly diverse socioeconomic backgrounds and ages (Barr & Turner, 2013). At the same time, state appropriations fell from $75.3 billion in 2007 to $73.8 billion in 2010, and institutional endowments faced declining returns and liquidity (Barr & Turner). Increased demand from students interested in higher education during high unemployment and decreased public financial support persisted through several years beyond the Great Recession and put unique pressure on HEIs (Barr & Turner).

The Great Recession is a helpful example of a financial crisis when turning attention to the COVID-19 pandemic. However, researchers must acknowledge the two crises' essential distinctions when drawing parallels. Several researchers noted the cyclical relationship between higher education and the job market in the economy (Barr & Turner, 2013; Brint et al., 2016;

Turner, 2014). The immediate enrollment response to the pandemic differed dramatically from that of the Great Recession, and higher education enrollment decreased by 7.5% from the fall of 2019 to 2022 (Nietzel, 2022). HEI leaders and researchers may look to past economic challenges for lessons on restoring institutional financial stability, with the caveat that crises precipitate varied challenges and institutions bring unique characteristics and resources to their responses.

The COVID-19 Pandemic

When the COVID-19 pandemic shook the world in March 2020, higher education institutions across the United States worked to keep students enrolled while managing unprecedented financial uncertainty and unexpected costs. The industry faced the threat of plummeting enrollment, health and safety compliance-related expenses, and unpredictable government funding (Westcott, 2020). Traditional HEIs are large, rigid structures with fixed costs and expenses that must be equipped for prompt organizational changes. To address anticipated budget shortfalls, institutions' leadership teams looked at staffing structures for areas to reduce costs and manage institutional expenses (Burke, 2020; Westcott, 2020; Whitford, 2020). In the spring of 2020, higher education news sources regularly named a new institution that laid off personnel or was at risk of financial collapse (Burke; Westcott; Whitford). The COVID-19 pandemic exposed institutional financial vulnerabilities and exacerbated decades of economic challenges in higher education. In the fallout from this financial panic, staff and faculty often suffered through layoffs and staffing challenges resulting from cuts to personnel budget lines (Adams-Prassl et al., 2020). Rapid shifts took students off campus and into remote learning environments, and faculty and staff had to shift alongside them (Burke). In March 2020, articles began to share news of personnel cuts at institutions and proclaim the projected closure of hundreds of institutions (Burke, 2020; Westcott, 2020; Whitford, 2020). While most faculty

and full-time administrative staff shifted to remote work, many support staff, food service, and facilities staff faced a less clear future, with many of their day-to-day roles paused indefinitely (Burke).

External pressures abound in organizational costs, and during the pandemic, higher education had limited time for internal adaptations to external economic pressure. In a quick step to reduce expenses, many HEIs conducted layoffs (Bauman, 2022; Lederman, 2021). The higher education workforce was 3.9% smaller in the fall of 2020 than in the fall of 2019 (Lederman). Bauman wrote, "December 2020 represented the darkest month of the pandemic for higher ed in terms of cumulative job losses, with an estimated 473,000 fewer workers employed compared to eight months earlier — a reduction of nearly 10 percent" (n.p.). Beyond initial layoffs and staff reductions, higher education struggled to rebound its staff as more normal operations resumed, and the Great Resignation shifted power to employees in 2021 and 2022 (McClure, 2021). McClure highlighted the low morale, uncompetitive pay, and understaffing at colleges and universities as factors influencing individuals to resign or seek employment elsewhere. The ripple effect of reactionary layoffs in 2020 continued to disrupt higher education employment years later, threatening daily operations and risking long-term organizational stability. Damage to trust, reputation, and employee relationships may be complex for institutions to repair, and radical action may be required to prevent future employment crises.

Purpose of the Study and Research Questions

Researchers asserted connections between HEIs' financial situation and severing employees (Butterfield & Wolfe, 1993; Love et al., 2010; Michaelson & White, 1996). Butterfield and Wolfe cited "declining enrollment and subsequent diminished tuition income, elusive state funding or unrenewed research grants" in their recommendations for an equitable

approach to layoffs (p. 23). Love et al. (2010) began their work with the assertion that, “in response to decreased funding, many universities have saved money by laying off employees or implementing hiring freezes” (p. 30). Michaelson and White’s (1996) opening sentence proclaimed, “These are tough economic times for higher education, and many institutions are reacting by reorganizing departments and redeploying personnel. Many, perhaps most, colleges and universities face difficult decisions concerning staffing” (p. 1). The preceding excerpts are examples of the quick assertion of financial hardship that many researchers make at the top of their work before digging deeper into strategies, outcomes, or impacts of employee separations. To understand the issue of financial hardship more clearly, this study interrogates initial assumptions surrounding the economic challenges HEIs face and their connection to employee separation.

Andrew (2020) took a similar critical approach to narratives around layoffs, critiquing faculty's incentivized voluntary redundancy resignations in the name of restructuring, reprioritizing, and cost savings. Faculty in Andrew’s study insinuated that their resignations were not necessary for the institutions, nor were they voluntary amongst faculty, but that institutional leadership dictated the public narrative surrounding faculty resignations. Andrew questioned “how these fabrications, based on the superficial story (the facade), become the official stories” and went further to invoke Foucault’s assertion “official history is fabricated by the legalistic stories of the powerful” (p. 14). Through quantitative inquiry, my study adopts an approach similar to Andrew’s anti-positivist framework to understand organizational action and query familiar narratives surrounding employee separations.

My research identifies explicit relationships between institutional characteristics and layoffs during the COVID-19 financial crisis. Institutional characteristics (e.g., endowment,

revenue received from public funding, tuition rates, enrollment trends) are tested as predictors of layoffs between the 2019-20 and 2021-22 academic years. To that end, this study seeks to answer the following questions:

1. What relationship exists between the identified institutional characteristics and the occurrence of employee layoffs between March 2020 and June 2023?
2. To what extent do institutional characteristics predict the occurrence of layoffs between March 2020 and June 2023?

I use institutional characteristics categorized as enrollment and student demographics, financial characteristics, and employee demographics. My dependent variable for this study is the occurrence of layoffs during the designated period between the 2019-20 and 2021-22 academic years.

Significance of the Study

My research uncovers connections between institutional financial health and layoffs and uses data to challenge assumptions about employee separations. Similarly, Brint et al. (2016) questioned the mainstream press narratives surrounding the Great Recession and higher education. Stories of layoffs catch readers' attention; thus, news sources often prioritize these stories, simplifying and distorting the reality of layoffs in higher education (Brint et al.). With a critical quantitative approach, my research aims to confirm or problematize the belief that institutions in financial peril must look to personnel reductions as a means of budgetary realignment.

Kincheloe and McLaren (1994) noted critical quantitative research's role as social critique, including problematizing the connection between values and facts. By examining the reality of the connection between institutional finances and layoffs, my findings disrupt broader

understandings of layoffs as a necessary evil in the pursuit of balanced books. My research clarifies connections between variables and directs further research to critically examine the human impact of cost-cutting measures in higher education.

Perhaps more importantly, my study urges HEIs to move toward greater values alignment in their business operation. The neoliberal influence in higher education is pervasive but not inevitable. Kezar (2018) asserted, “I know there is a way to focus on academic values, diversity, and quality while maintaining financial solvency and efficiency. However, this necessitates systemic thinking by change agents” (p. 20). Part of a shift in systemic thinking should encompass reimagining the structures and systems that make changes, challenging neoliberalism as the dominant approach to business. To make good on promises of social good, HEIs must embark on transformational change efforts to create equitable labor practices for employees on college campuses.

CHAPTER 2

LITERATURE REVIEW: BUDGETARY THREATS IN HIGHER EDUCATION

Researchers have yet to make convincing, empirical connections between institutions' economic conditions and the decision to complete employee layoffs. My study clarifies the relationships between institutional economic conditions and employee separations during the COVID-19 pandemic. I focus on identifying and analyzing literature that speaks to my research questions and variables to develop a literature review. Specifically, I review research that explores how changes in enrollment, student demographics, institutional financial factors, and faculty and staff demographics might impact financial health and employment security at HEIs. Research on enrollment, financial characteristics, and staff demographics and their relation to HEIs' financial health supports the selection of variables for analysis in my study. Terrell (2016) emphasized that a literature review should present what is already known about a topic. The review presented below provides background on what was written about layoffs and their relation to critical financial indicators at HEIs.

Literature Review Methods and Methodology

The review of the literature focused on personnel reductions in higher education amidst the COVID-19-induced financial crisis, which began in the spring of 2020. The pandemic shifted the focus of my spring 2020 higher education finance course to the crisis unfurling in my professional and scholarly life in real time, which brought new relevance to the course content. My course became a real-team case study of an unprecedented, industry-wide financial crisis, raising questions about institutional response and responsibility. Since the spring of 2020, my research focused on environmental and institutional factors influencing organizations' financial

health and stability. Further, I am interested in how institutional financial health impacts employees. Did the HEIs in the best financial health maintain their employees, while those HEIs struggling financially laid off employees? The scope of this literature review was fine-tuned from 2020 through 2024 to include context on higher education's economic outlook before the pandemic and detail the immediate impacts of the pandemic on HEIs' operations.

In my literature review, I primarily used Academic Search Complete, JSTOR, EBSCOhost, ERIC, PsycINFO, and Google Scholar databases to search for and collect the literature. I searched for the terms:

- financ*, econom*, budget*, financial crisis, economic crisis, budgetary crisis, OR recession
- AND higher education, postsecondary education, college*, OR universit*
- AND staff, layoff, reorganiz*, OR furlough*

Given the nature of the topic and the variations of terms used in studies, the above terms were searched for in various combinations.

My initial search using the terms above yielded 4,343 sources. I removed dissertations, non-peer-reviewed sources, and entries that did not focus on higher education, with select exceptions noted in my review. My refined search produced 68 sources, which I then reviewed manually for relevance, removing sources that did not precisely align with my study variables. I also searched the reference lists of existing literature reviews on personnel reductions in higher education and the reference lists of the studies identified through my search. Finally, I reviewed the literature cited in other projects I completed throughout my graduate studies.

In my completed review, I included qualitative and quantitative studies to provide a complete view of past research. I primarily included work concentrating on higher education

within the United States. I homed in on peer-reviewed literature and limited news sources and reports to those that provided context around the political economy of the US. In the case of COVID-specific research, I was more lenient in including reports and non-peer-reviewed sources due to the recent events and the limited timeframe for publishing peer-reviewed work. My literature collection process resulted in 40 pieces of literature for review and work included for context and clarity around the topic.

Findings

Literature about college and university layoffs, furloughs, and reorganization ebbs and flows, often in response to state and federal funding cuts and national economic recessions. When colleges experience financial stress, literature abounds regarding the high costs and expanding number of college staff and faculty, as well as approaches to financial solvency, budget reductions, and layoffs. I focus on literature that presents changes in higher education funding since the 1980s in the United States, which aligns with my dependent and independent variables. I organized the literature into enrollment and student demographics, institutional financial characteristics, and faculty and staff demographics to align with my three categories of variables. I conclude with a brief overview of methodological considerations from my literature review.

Enrollment and Student Demographics

Enrollment and student demographics comprise a significant portion of my study's independent variables because of their impact on HEIs' financial health and outlook. In 2017, 20% of the total revenue for public HEIs came from net student tuition and fees (Pew Charitable Trusts [Pew], 2019). Meanwhile, 13% of revenue came from federal funding and 21% from state funding sources, making tuition and fees a critical portion of HEI funding, on par with

government support (Pew, 2019). State support, which primarily funds general campus operations, decreased after the Great Recession and has not returned to pre-recession levels, making tuition revenue and other funding sources more critical than ever (Pew, 2019). Continued essential acquisition of tuition revenue depends on the continuous enrollment of tuition-paying students.

During the Great Recession, enrollment demand increased as students sought education and professional development experiences in the face of diminished employment opportunities (Barr & Turner, 2013; Desrochers & Kirshstein, 2014). The immediate enrollment response during the COVID-19 pandemic differed dramatically, with enrollment falling for the third straight year in 2022 (Sforza, 2023). Higher education enrollment decreased by 7.5% from the fall of 2019, equating to a loss of 1.3 million students (Nietzel, 2022; Sforza). Enrollment declines put many HEIs in financial jeopardy, risking a significant portion of their revenue. June (2023) highlighted three common traits of HEIs that have closed since the pandemic: declining enrollment, low admissions yield, and high tuition dependence. At Cazenovia College in upstate New York, an institution highlighted by June (2023), enrollment fell for a decade before the pandemic, making their other financial hardship and the enrollment challenges of the pandemic insurmountable. The literature reviewed in this section is broken into two categories to focus on the risk of institutional tuition dependence and volatile enrollment patterns, which both threaten the financial futures of HEIs and push institutional leadership to engage in cost-cutting measures, which could include employee layoffs.

Increasing Tuition Dependence

Public funding for HEIs decreased beginning in the 1970s, and the cost burden for higher education was increasingly pushed to students and their families (Powell & Powell Rey, 2015).

Faced with weakened or unreliable public support, HEIs became beholden to tuition as an essential source of revenue, creating new challenges and financial vulnerabilities (Powell & Powell Rey, 2015; Weisbrod et al., 2010). The Council of Independent Colleges categorized any institution that receives 60% or more of its revenue from tuition as tuition-dependent (Hernandez, 2010). Weisbrod et al. wrote that tuition for undergraduate education is the largest revenue source for most HEIs. In their research, Santos and Haycock (2016), Leslie et al. (2011), and LeClair (2022) addressed the critical role of tuition in institutional revenue streams.

In their policy report, Santos and Haycock (2016) outlined challenges with affordability and government support for HEIs and their relationship with college completion rates for US students. In 2015, state support per full-time enrolled student was down 20% from 1990, and state appropriations made up an average of 23% of public institutions' budgets, versus 25% by student tuition dollars (Santos & Haycock). Federal means of supporting higher education also shifted and put an increased cost burden on students and families (Santos & Haycock). The Pell Grant, which used to cover about 75% of the cost of attending a four-year college, covered about one-third of the price in 2015 (Santos & Haycock). While the maximum amount students may receive as a Pell Grant has increased, it has not grown quickly enough to stay in step with the rising cost of college attendance (Santos & Haycock). Santos and Haycock cite decreases in government support as a challenge for HEIs and call for robust, intentional federal-state partnerships to act as a "renewed social compact that re-instates the promise of each generation to pay for the education of the next" (p. 16). Santos and Haycock supported their urge for help with data on past government support and recent decreases in available funds. While those authors did not speak directly to the impact of decreased government support on staffing structures, they made relevant arguments connecting decreased public funding with increased

financial stress on HEIs, including increased tuition dependence and its effect on student success.

Leslie et al. (2011) used IPEDS data to test connections between instructional and research revenue and expenditures, two budget lines most closely tied to institutional missions. Whether government appropriations, donations, or tuition dollars, HEIs face increasing scrutiny and accountability for expenses, mainly research and instruction (Leslie et al., 2011). Leslie et al. used panel data rather than a single year to track over a decade of revenue and expenses and looked at public and private institutions. Those authors also diverged from past research on HEI finance by considering higher education as an industry with multiple products, including research, education, and other outputs. They used several theoretical frameworks to understand their results, notably Bowen's (1980) revenue theory of cost, also considered in Archibald and Feldman's (2008) analysis (Leslie et al., 2011). Leslie et al. found that tuition, public appropriations, grants, and contracts impact instructional expenditures, and research expenses are closely connected to grants and contracts. The authors also found that public service expenditures are inversely related to tuition revenue - the more tuition-dependent an institution was, the less it influenced its public service mission (Leslie et al.).

LeClair (2022) applied bankruptcy models using ANOVA to test the difference in institutional financial characteristics between a random sample of institutions and a sample of HEIs that failed in recent years. The paper outlined the squeeze institutions with low endowments, decreasing public support, and a high level of tuition dependence face when working to offer competitive pricing and drive enrollment (LeClair). LeClair found a significant difference between the random institution sample and the sample of failed institutions, identifying specific characteristics that might be warnings of impending bankruptcy. The

variables LeClair (2022) found were consistent among institutions that closed, including smaller schools, those with limited endowments, and low or negative net revenues. LeClair specified "tuition dependence (tuition revenue over total revenue) was not significantly different across the two samples" (p. 68). This finding differed from many preconceived notions around the role of tuition dependence as a factor in economic crisis.

LeClair (2022) spoke to the role of economies of scale, institutional age, and reputation in noting that some variables may not act in intuitive ways. LeClair cited economies of scale as a challenge for smaller institutions that may need more flexibility in adapting organizational structures or face rigid upper limits in enrollment (finite housing capacity, small class sizes). For these reasons, institutional size rather than the degree of tuition dependence might be the standard variable influencing the ability to remain solvent; larger institutions can remain operational, regardless of tuition dependence, if they can maintain enrollment and adapt organizational structures to meet budget constraints (LeClair). Similarly, Brint et al. (2016) found that larger organizations had more internal reorganization and cost-cutting options during the Great Recession, allowing for more effective institutional adaptation.

Weisbrod et al. (2010) framed tuition as a "user fee" that attendees pay for services at a college or university (p. 61). The user fee varies significantly from institution to institution, and many factors influence the cost of attendance, but all institutions charge a user fee and rely on revenues from paying users to supplement other sources of income (Weisbrod et al.). Because tuition plays a critical revenue stream, maintaining or growing enrollment was a significant priority at most institutions. HEIs continued to recruit and retain paying students to sustain this significant source of revenue. The Great Recession and the COVID-19 pandemic disrupted higher education finances and enrollment, and the upcoming "demographic cliff" of 2026-27 will

likely bring further challenges for HEIs (LeClair, 2022, p. 54). Tuition dependence was and remains a concern for many institutions that lie downstream from the more immediate problem of enrollment volatility in maintaining financial stability.

Volatile Enrollment Patterns

After decades of growing higher education enrollments, enrollment was destabilized after the Great Recession, and the COVID pandemic exacerbated volatility (Conley & Massa, 2022; Fields & Brint, 2023). Before the pandemic, growth slowed for community colleges and regional and less competitive institutions (Fields & Brint, 2023). In the 20th century, the dominant logic was that college attendance would continue to increase as the economy demanded more educated and credentialed workers (Fields & Brint). For enrollments to increase, incoming students would have to come from lower socioeconomic backgrounds, as the top tiers of family incomes were already well-represented in college attendance (Fields & Brint). The equity and economic arguments for growing higher education enrollment seemed clear, but a decade and a half of global economic setbacks have challenged this call for continued enrollment growth.

Enrollment declines did not impact all HEIs uniformly, and community colleges and less selective four-year colleges faced more significant declines (Conley & Massa). Simultaneously, elite institutions received many enrolled students (Conley & Massa). Unlike enrollment increases during the Great Recession, "the COVID-19 pandemic altered the usual counter-cyclical enrollment trend where enrollment increases during and in the years immediately following economic recessions" (SHEEO, 2023, p. 12). Conley and Massa (2022) summarized the enrollment challenges stemming from the pandemic, "In fall 2020, 20.7 percent fewer students than in 2019 enrolled directly in college from high school, and more than one in four students enrolled in college in 2019 did not return the following fall" (n.p.). Additionally, Hispanic and

male students are disproportionately represented in the declining enrollment figures, a disappointing outcome as more significant equity in college completion rates was critical to continued economic growth before the pandemic (Conley & Massa, 2022; Fields & Brint, 2023).

The pandemic exacerbated existing enrollment declines for many institutions, challenged the value proposition of colleges, and landed many institutions in a challenging place to tackle the coming enrollment cliff (Campion, 2020; Campion, 2022; Conley & Massa, 2022; Crawford, 2023). To understand current challenges and the enrollment variables considered in my study, I reviewed the literature regarding several aspects of enrollment volatility. Barr and Turner (2013), Gansemer-Topf et al. (2018), and Fields and Brint (2023) researched enrollment changes and institutional responses to the Great Recession. Marshwick (2022) and Ngo and Cho (2022) specifically explored international student enrollment, a critical piece of the enrollment puzzle for many HEIs and an intentional variable in my study. Similarly, González Canché (2017) provided insight on the role of out-of-state student enrollment in institutional finances. Finally, Campion (2020, 2022) advised HEI leadership on approaching the upcoming enrollment cliff, and Crawford et al. (2023) provided an example of one institution's response to enrollment volatility.

Barr and Turner (2013) analyzed enrollment trends during the Great Recession and charted changes in IPEDS enrollment data, with fluctuations in government support for higher education based on data from the Department of Education. Researchers noted the distinct impact of the Great Recession on higher education, "Unlike many goods, the demand for higher education typically increases during economic downturns. In periods of high unemployment or recession, the opportunity cost of time is lower" (Barr & Turner, p. 170). Barr and Turner

suggested the Great Recession, measured from 2007 to 2010, increased cost-shifting for higher education as enrollment rose and state subsidies decreased. From 2007 to 2010, post-secondary enrollment increased from 18.2 million to 21 million, encompassing students from increasingly diverse socioeconomic backgrounds and ages (Barr & Turner, 2013). At the same time, state appropriations fell from $75.3 billion in 2007 to $73.8 billion in 2010, and institutional endowments faced declining returns and liquidity (Barr & Turner). Increased demand from students interested in higher education during high unemployment, paired with decreased public financial support, persisted through several years of the Great Recession and put unique pressure on HEIs (Barr & Turner). Institutions responded with increased tuition, accelerating tuition dependence for many institutions, which outlasted the timeframe of the recession and set HEIs up for further challenges (Barr & Turner).

Gansemer-Topf et al. (2018) similarly used IPEDS data to explore the connection between institutional expenditures, enrollment, staffing patterns, and first-year retention rates during the US's 2007-2009 financial crisis. Gansemer-Topf et al. identified variables, including staffing patterns, and used resource dependency theory as a framework for their analysis. During the Great Recession, many institutions increased expenditures to keep up with enrollment demands; however, most HEIs invested in hiring non-instructional business operations staff (Desrochers & Kirshstein, 2014; Gansemer-Topf et al., 2018). Adjunct faculty numbers also grew in the early 2000s (Desrochers & Kirshstein). Gansemer-Topf et al. noted a higher percentage of part-time and adjunct faculty members is negatively associated with student graduation rates. Though increasing business operations staff and adjunct faculty causes an increase in staff numbers and lowers staff and faculty-to-student ratios, these changes are unlikely to benefit student success (Gansemer-Topf et al.).

Total higher education enrollment declined seven percent from 2010 to 2019, with public higher education decreasing at a lesser rate of three percent during the same timeframe (Fields & Brint, 2023). Fields and Brint used pooled state-level data in between-within models to query public higher education enrollment between 2009 and 2019 and examine differences between states and types of institutions. Fields and Brint found significant variation in enrollment by tiers, which they organized as research universities, regional comprehensive universities, and community colleges. Community colleges saw an enrollment decline of 25% in this period, while public research universities experienced a 14% increase in enrollment (Fields & Brint, 2023). Fields and Brint also found that demographic factors, political climate, and levels of socioeconomic inequality impact enrollment variations between states. Finally, Fields and Brint suggested researchers refer to enrollment "disruptions" rather than declines when referring to period studies, as they offer a more precise means of describing uneven enrollment patterns and disproportionate enrollment declines.

Marshwick's (2022) research brief explored approaches to tuition discounting for international students at three HEI systems in Minnesota and Wisconsin. Marshwick selected 22 regional, four-year institutions across the University of Minnesota, Minnesota State, and University of Wisconsin systems to explore their state policies for international student tuition discounting and its impact on the recruitment and retention of international students. Marshwick used six characteristics of tuition and policy to interrogate each institution, including the type of tuition benefit, the amount, availability, and how students retain this benefit, including whether they need to reapply, how long the renewal lasts, and if there are academic minimums for the benefit. This is particularly relevant to my study's use of the Minnesota State University system as a part of its sample data. International student tuition is an important source of revenue,

particularly for regional HEIs that struggle to recruit domestic students outside their region and are predicted to struggle the most with falling enrollments (Marchwick, 2022).

New international student enrollment is declining nationally (Marshwick, 2022). Declines began in 2016-17 and accelerated with the pandemic, with a 45.6% drop in international student enrollment from 2019-20 to 2020-21 (Marshwick). For institutions struggling to meet enrollment goals, international student tuition discounting policies are critical to recruiting and retaining students (Marshwick). Marshwick further noted how tuition rates differed for non-resident students, including domestic students from other states and international students. Because these student groups typically have a higher sticker price, though they do not necessarily pay a higher rate and their net price could vary drastically based on many factors. Marshwick concluded that the University of Minnesota and Minnesota State systems created more favorable policies to recruit and retain international students. However, Marshwick recommended state systems create transparent, easy-to-understand policies to clarify their processes for students and families navigating the US higher education system. Marshwick also noted the importance of clear tuition pricing strategies to help institutions meet enrollment goals in the coming years.

Ngo and Cho (2022) evaluated the success of changes made by the Minnesota State University system to offer in-state tuition rates to international students as a means of recruitment. They explained the importance of international students in HEIs' enrollment, writing, "Recruiting international students to U.S. higher education institutions is thought to be a means of generating revenue that helps to address fluctuations in state appropriations and student enrollments. Typically, international students are willing to cover tuition and fees and pay for many other goods and services while they study in the United States" (Ngo & Cho, 2022, p. 1). Ngo and Cho used a difference-in-difference design to compare the Minnesota State University

system with nearby systems to test the application of the "treatment," in this case, the change in policy offering in-state tuition rates. Ngo and Cho (2022) found that providing in-state tuition to international students increased international student enrollment while domestic student enrollment stayed the same, suggesting this policy may help increase revenue via tuition. On average, institutions saw an increase of 30 international students per campus in the first year of this policy change (Ngo & Cho). This is an important finding and helps to validate the importance of including specific data on international student enrollment as a variable.

Out-of-state student enrollment was also isolated as a variable in my study. While out-of-state student financial aid and enrollment patterns differed from international students, similar characteristics regarding higher tuition rates and differing net revenue from tuition made this a critical variable to explore. González Canché (2017) applied spatial econometrics to challenge assumptions around heterogeneity within out-of-state student populations. González Canché established the critical role of out-of-state student tuition revenue in balancing HEIs' budgets. González Canché explained, "non-resident or out-of-state students and their families have not paid taxes in the states where they attend college; consequently...these non-resident students [should] pay as close to the full cost of their education as possible" (p. 142-143). Tuition costs assessed to out-of-state students vary, uncapped and following market patterns, and create a substantial source of revenue for HEIs (González Canché, 2017). González Canché questioned the assumption that out-of-state students represent a heterogeneous home-state population with the same financial means to bear the burden of higher tuition costs.

González Canché (2017) posited that out-of-state students come from a diverse range of home states, with varying economic health. González Canché focused on both public and private institutions. My student only includes public institutions, which González Canché noted benefit

more directly from higher enrollment of out-of-state students, as public institutions do not charge different tuition rates to in-state versus out-of-state students. González Canché (2017) presented several notable findings that complicate common understandings of out-of-state student enrollment and tuition revenue. First, González Canché affirmed that enrolling students from wealthier home states provided a greater impact on tuition increases. Additionally, and relevant for my student on public institutions, González Canché found that public institutions attract more out-of-state students than their private counterparts. Meanwhile, students attending private institutions from out-of-state were more likely to travel further from home (González Canché). This resulted in an uneven distribution of out-of-state students from wealthy home states (González Canché). González Canché's findings complicate the narrative around out-of-state student enrollment as a revenue source, posing ethical considerations around the haphazard assumption that out-of-state students can offer revenue to bolster budgets.

The future of enrollment is looming for higher education leaders as predictions for the coming years pose new threats. Higher education leaders are bracing for another dip in enrollment in the 2026-27 academic year. Campion (2020) explained, "Because of the recession, birth rates in the U.S. were lower in 2008; the consequence of that is that there will be fewer college-aged youth adults in 2026" (p. 542). Campion urges institutions to take the impending enrollment cliff seriously and adopt strategic efforts for recruitment to ensure consistent enrollment. Campion warns institutions to get to know their student population and be targeted in recruiting students, particularly for regional institutions predicted to face more significant recruiting challenges. In a follow-up to their original recommendations, Campion questioned the narrative that institutions should prepare for cuts to meet the enrollment cliff and suggested HEIs conduct a needs assessment and invest in services that will improve recruitment and retention.

Crawford et al. (2023) presented data suggesting an impending enrollment decline in Ohio and presented the plan developed by Kent State University (KSU) to facilitate students' transfer from 2-year institutions to the KSU campus to lessen the impact of a shrinking college-age population in the region. KSU created partnerships with three local community colleges to facilitate transfer with enhanced transfer student services and advising, like the recommendations of Campion (2022). Crawford et al. explained the urgency of strong community and local college transfer agreements, "pathway development is paramount for expanding enrollment goals as well as providing students in need with critical options for degree completion" (p. 41). KSU role modeled a timely response to the pressing enrollment concerns facing many institutions, and heeded Campion's urging HEIs to take swift action and invest time and resources in enrollment (Crawford et al.).

Summary of Enrollment and Student Demographics

My literature review's enrollment and student demographics subsection is organized into two sections - increasing tuition dependence and volatile enrollment patterns - to illustrate how these two phenomena create a deeply unstable financial groundwork for many HEIs. Many HEIs increasingly rely on student tuition dollars to maintain basic operational expenses (LeClair, 2022; Leslie et al., 2011; Powell & Powell Rey, 2015; Weisbrod et al., 2010; Santos and Haycock, 2016). Santos and Haycock looked at the causes of tuition dependence and attributed it to decreasing public funding for higher education. Tuition dependence was also found to negatively impact affordability for students, reflecting what researchers referred to as cost shifting as tuition rises for students and HEIs are less capable of offering financial support to students (Santos & Hancock, 2016). LeClair (2022) went one step further to complicate the connection between tuition dependence and HEIs' ability to remain financially solvent during a financial crisis.

LeClair nuanced this connection, attributing other variables, including institutional age and reputation, to HEIs' financial resiliency. Finally, Leslie et al. (2011) examined the impacts of tuition dependence on institutional priorities and concluded that institutions are less committed to public service when they are more tuition-dependent.

While HEIs are increasingly reliant on student tuition dollars, the steady stream of students needed to fulfill this need is unreliable (Barr & Turner, 2013; Campion, 2020; Campion, 2022; Conley & Massa, 2022; Crawford, 2023; Fields & Brint, 2023; Gansemer-Topf et al., 2018). Barr and Turner (2013) plotted the increased demand for higher education during the Great Recession and noted the cost shifting that took place during the Recession as public funding decreased and HEIs relied more heavily on tuition to meet increased student demand. Meanwhile, Fields and Brint (2023) painted a complicated picture of student enrollment during the Great Recession, finding that enrollment did not increase evenly across institution types, and community colleges, particularly, saw a decrease in enrollment. As HEIs adapt to ebbing and flowing enrollment, many work to hire and decrease staff (Gansemer-Topf et al., 2018). Gansemer-Topf et al. found that many HEIs hired adjunct and business operations staff during the Recession to keep up with student demand, but these faculty and staff did little to increase student graduation rates or achieve institutional goals.

International student and out-of-state enrollment are another volatile part of the enrollment puzzle for many HEIs. Marshwick (2022) noted the importance of stabilizing international student enrollment for long-term financial planning and suggested that HEIs offer clear and upfront pricing information to international students and families to recruit and retain students. Ngo and Cho's (2022) study concluded that offering in-state tuition to international students is an attractive option that helped to increase international student enrollment. Keeping

costs clear, consistent, and accessible for international students can help maintain a consistent enrollment pattern for this key demographic group (Marshwick, 2022; Ngo & Cho, 2022). Meanwhile, out-of-state students have the potential to offer greater revenue via higher tuition rates, but this group of students should be considered in a more nuanced manner, with greater understanding of the impact of home-state wealth on students' ability to bolster revenue (González Canché, 2017).

Tuition dependence and enrollment are critical variables in my study, as they play a significant role in the financial health of HEIs and will continue to for the foreseeable future. The Great Recession and the COVID-19 pandemic are recent examples of external events that can suddenly impact higher education enrollment, and further challenges loom in the coming years. Campion (2022) noted that higher education will continue to face enrollment challenges as fewer young people pursue higher education. Conley and Massa (2022) wrote that fewer students felt that college was a worthwhile use of time and money, and fewer high school students considered attending college and seeking job opportunities instead. The enrollment and demographic factor subsection of my independent variables includes changes in overall enrollment, out-of-state and international student enrollment, and students receiving Pell Grants. I selected these variables to test the connection between changes in tuition revenue, enrollment patterns, and my dependent variable of faculty and staff layoffs.

Further, Campion (2020, 2022) described an impending decrease in student enrollment and challenged HEIs to think creatively about how they can adapt to meet the challenge of a smaller college-going population and thus decrease enrollment and tuition revenue. Projections of future HEI enrollment suggest that enrollment volatility is not an issue of the past and will

continue to impact HEIs in the coming decades, making these variables even more relevant in understanding the potential impacts of enrollment disruptions on faculty and staff.

Financial Characteristics

Financial characteristics are the second set of variables in the methods section of my study, outlined as possible influences on the dependent variable. Financial characteristics included institutional financial holdings and revenue sources, and changes in those sources from the 2019-20 to the 2021-22 academic years. The pandemic was a time of swift changes in both revenue and expenses for HEIs, and this financial shakeup had the power to drive equally swift organizational changes, which sometimes included reorganization and layoffs (State Higher Education Executive Officers Association [SHEEO], 2021). Financial characteristics were consistently highlighted in the literature as a driver of organizational change and a primary influence on institutional priorities (SHEEO). SHEEO predicted:

> If past recessions are any indication, higher education is likely to face several years of increasingly steep cuts to state funding. This means that public systems of higher education would enter a period of cuts from an already historically low base when compared to previous pre-recession figures. In addition, institutions face unique financial pressures moving forward. With declining revenue from both states and students and after a year of increased costs due to the pandemic and the switch to online learning, state support for higher education is crucial for the continued success of our public institutions. (n.p.)

SHEEO (2021) specifically called out decreased revenue and increased expenses as pressures facing HEIs. For those reasons, I review the literature on internal and external economic factors that predicted layoffs in higher education. Within the financial characteristics section of this

literature review, research is grouped into three categories based on common themes that speak to the variables.

First, I present literature confronting the rising costs of operating a college or university. Before the pandemic, HEIs faced intense competition for students and increasing expectations from families and communities, which required steep spending to meet their many expectations (Archibald & Feldman, 2008; McClure & Titus, 2018). During the pandemic, expenses increased further, including new protocols and expectations for student health and safety (Jackson & Saenz, 2021; Miller, 2020). There is no quantitative, centralized account of changing expenses facing individual HEIs, and thus, expenses were not presented as a variable in my study. I explore rising expenses as a financial challenge for HEIs as potential contributors to financial distress, which exacerbates issues of decreasing revenue (Archibald & Feldman, 2008; Hedrick et al., 2009; Jones & Wellman, 2010; McClure & Titus, 2018).

Second, there is ample data on unstable revenue, which is also cited in the literature as a challenge for HEIs (Froelich, 1999; Ortagus & Yang, 2018; Powell & Powell-Rey, 2015; Rosinger et al., 2022; Washburn, 2006). Revenue changes vary widely by institution and thus provide a valuable set of independent variables to examine changes in staffing. Third, the pandemic era was unique in the coordinated response of the federal government to supplement lost funding in higher education. The final category of variables in the financial characteristics section included government aid per FTE during the pandemic, which includes three rounds of Higher Education Emergency Relief Fund (HEERF) disbursements from the federal government. While government aid for HEIs during COVID-19 was critical, HEERF funding generally fell short of the support many HEIs needed (Jackson, 2021; Lowman, 2021; Miller, 2020; Sansone,

2023). I review the literature on the HEERF aid from the government and included those funds as independent variables in my study to consider their influence on the dependent variable.

Unpredictable Expenses

Before considering unstable revenue and revenue-seeking behaviors at HEIs, it was crucial to consider the expenses HEIs face that demand ever-increasing revenue. Specifically, during the timeframe in which my study focused, expenses rose sharply for HEIs managing operations during the pandemic (Friga, 2021; Jackson & Saenz, 2021). Friga (2021) estimated that HEIs faced $24 billion in expenses for COVID-related operating adjustments, including testing and supplies for a safe return to campus. During the same timeframe, inflation increased costs for HEIs (Commonfund Institute, 2023). The Commonfund Institute's Higher Education Price Index (HEPI) is "an inflation index designed specifically for use by institutions of higher education. HEPI measures the average relative level in the price of a fixed market basket of goods and services purchased by colleges and universities each year" (p. 1). The HEPI clarifies inflation and changes in operational costs that pressure all HEIs to maintain or increase revenue to keep up with costs.

The Commonfund Institute (2023) found costs rose 4% in the 2023 fiscal year, down from 5.2% in 2022 but still up from 2.7% in 2021. In 2022, the highest increase on record since 2001, prices rose the greatest in the "supplies and materials" and "utilities" categories, two more unpredictable and difficult-to-control expense categories for HEIs (Commonfund Institute, 2023). In 2021, the cost of utilities rose 15% for HEIs, then 43% in 2022, and it decreased -3.7% in 2023, indicating high volatility for this expense in which HEIs have little control (Commonfund Institute). While institutional leadership may work hard to bring in revenue, some

institutional expenses remain unpredictable and outside of their control, bringing budgetary uncertainty.

For example, the University of Arizona, a public flagship institution in a state with a growing population, described itself as facing a “financial crisis” in June 2023 after under projecting its operating expenses by $155 million (Bauman, 2023, n.p.). The difficulties faced by the University of Arizona suggest it was not just small institutions with declining enrollments that were facing the industry's financial demands. Literature in this section sheds light on the growing financial demands on HEIs. Archibald and Feldman (2008), Hedrick et al. (2009), Desrochers and Kirshstein (2014), Jones and Wellman (2010), and McClure and Titus (2018) all explore demands on HEI budgets, primarily focused on employee expenses, to bring clarity to the increasing expenses driving the need for more significant revenue.

Archibald and Feldman (2008) completed a cross-section of data from the Consumer Price Index to test two theories explaining cost increases in higher education. The two competing theories included “cost disease” and “revenue theory of costs” (Archibald & Feldman, p. 268–269). Cost disease cut across industries and suggested that services performed by highly skilled labor, like much of higher education, face a challenge of growing costs that cannot be tamed by scaling and other production methods (Archibald & Feldman). The revenue theory of costs is specific to higher education and suggests institutions have spent all they can afford, thus constantly pushing for more money and resources (Archibald & Feldman). Archibald and Feldman concluded that higher education functions like other personal service industries and that cost disease is likely the cause of much of the increased cost. Archibald and Feldman (2008) detailed:

> Despite their lagging productivity, personal service industries have to compete for workers with goods-producing industries. Because they are experiencing technological progress, the goods-producing industries will be giving substantial wage increases to their workers. The only way that service industries can compete for workers is by raising wages, and this causes the prices of services to rise much more rapidly than the prices of goods. This is the cost disease process. (p. 273)

Their conclusion landed the problem of higher education costs squarely on the increased external competition for staff and faculty (Archibald & Feldman, 2008). For example, higher education institutions competing for chemistry faculty with the pharmaceutical industry will have to pay a high cost to secure and retain faculty members. Wage competition of this type swells the payroll budget in higher education, making it an even more attractive budget line to trim in financial hardship, resulting in layoffs, hiring freezes, and other attempts to decrease personnel expenditures.

Hedrick et al. (2009) interrogated concerns around the disproportionate administrative growth in higher education as a source of rising institutional expenses. Hedrick et al. challenged past studies on administrative growth, noting that they considered only data from select points in time, creating an incomplete picture of change. Hedrick et al. instead completed a panel-data analysis and concluded that the findings of disproportionate administrative growth have been exaggerated. Hedrick et al. defined administrative expenses as the sum of academic, institutional, and student support expenses, as reported in IPEDS. After relative expense stability in the 1980s, instructional and administrative spending increased in the 1990s (Hedrick et al.). Administrative expenses grew slightly faster in their findings, but Hedrick et al. (2009) concluded these

expenses needed to grow more quickly to support the popular conceptions of out-of-control administrative bloat.

Desrochers and Kirshstein (2014) acknowledged the growing ranks of administrative positions and noted that "whether this administrative growth constitutes unnecessary 'bloat' or is justified as part of the complexities involved in running a modern-day university remains up for debate" (p. 13). Desrochers and Kirshstein compiled a report for the American Institutes for Research to examine the long-term staffing changes on campuses over the past two decades, focusing on faculty numbers, administrative growth, and recessions. Desrochers and Kirshstein suggested that external economic pressures and inter-organizational competition for resources and prestige may be to blame for unchecked personnel expansion. RDT supports this assertion, suggesting that HEIs respond to external pressure with internal changes to meet these demands and remain competitive (Pfeffer & Salancik, 2003).

Data on institutional staffing and hiring patterns indicated staff and faculty increased since the 1990s (Desrochers & Kirshstein, 2014). Between 2000 and 2012, personnel across public and private nonprofit higher education institutions grew by 28%, although this growth was uneven across various institution types (Desrochers & Kirshstein). Even during the Great Recession, increasing student enrollment continued to drive hiring in higher education (Desrochers & Kirshstein). During these years, the sudden demand for higher education continued, albeit more slowly, hiring for most institutions (Desrochers & Kirshstein). Overall, hiring continued during the Great Recession; however, it slowed down dramatically for many institutions, particularly public HEIs (Desrochers & Kirshstein). Public institutions saw more robust growth before the Great Recession, while private institutions continued to grow past the Great Recession and before the COVID-19 pandemic (Desrochers & Kirshstein, 2014).

Over the past twenty years, enrollment and staff have grown; in some institutions, enrollment has outpaced hiring (Desrochers & Kirshstein, 2014). The fastest-growing personnel group in higher education are those who support institutional business operations or provide non-instructional support to students (Desrochers & Kirshstein). Additionally, many institutions grew contingent faculty and graduate assistant roles to cover teaching responsibilities to keep faculty costs low (Desrochers & Kirshstein). Compared with rising enrollments, slower hiring patterns at public institutions, particularly for instructional staff, drove up employee/student ratios, a net negative for student success metrics (Desrochers & Kirshstein).

Jones and Wellman (2010) noted a pattern through the 1990s and 2000s of state funding decreases during economic downturns, resulting in institutional budget cuts, tuition increases, and a brief stabilization before the process would repeat itself. HEIs will continue to course correct as external variables influence revenue and challenge them to adjust their spending in response (Jones & Wellman). Jones and Wellman pointed to the large portion of institutional budgets occupied by personnel costs and the high price of healthcare benefits, making employee benefits a critical area of attention in resolving budgetary costs. Increasing healthcare and pension costs outstripped salary costs as healthcare premiums continue to grow and individuals live longer past retirement, which strains institutions' pension budgets (Jones & Wellman). Prices can be overwhelming, and Jones and Wellman acknowledged that the difficulty in tackling health care goes beyond the scope of higher education’s influence. Jones and Wellman suggested the role that states, institutions, and bargaining units could play in pushing for legislative action to relieve financial pressure on institutional budgets.

Finally, McClure and Titus (2018) explored the relationship between college administrative spending and prestige-seeking behaviors amongst higher education institutions

using a pooled regression model with Driscoll-Kraay standard errors and a first-order autoregressive (AR1) lag. In their study, the dependent variable was administrative costs, derived from IPEDS data around academic support and institutional support costs and adjusted for full-time enrolled students and inflation. The independent variable was whether institutions moved up in Carnegie Classification to a research university position during a defined period. McClure and Titus also included control variables based on findings from the literature. Researchers found that administrative spending did increase with changes in their Carnegie Classification, but this change neutralized over time. McClure and Titus asserted that the empirical evidence of this connection - administrative bloat and rising tuition - is scant.

Declining Revenues

With my study's sample of public institutions, the literature reviewed in this section primarily focuses on the challenges facing public HEIs with wavering state financial support. Public colleges and universities have traditionally relied on robust government funding to maintain operations and expenditures (Ortagus & Yang, 2018; Powell & Powell Rey, 2015; Santos & Haycock, 2016). In the late 1970s, public funding to colleges and universities decreased, and institutions began placing higher college costs on students and families through increased tuition (Powell & Powell Rey, 2015). State appropriations decreased through the 1980s, rebounded slightly in the 1990s with a more robust economy, and then decreased again with the recession beginning in 2001 and during the Great Recession (Powell & Powell Rey). Importantly, SHEEO (2023) pointed out significant variations in state funding, writing "state-specific context is vital when discussing higher education finance trends" (p. 12). The COVID-19 pandemic brought additional economic hardship to the already struggling higher education industry (Friga, 2023).

Friga (2023) found HEIs faced an average 14% decline in revenue in the 2020-21 fiscal year, the first year of the pandemic. Revenue decreases reflect contractions in a range of revenue sources, including a steep enrollment decline, loss of revenue from commercial activities, and reduced state appropriations (SHEEO, 2023). In 2022, state appropriations increased 4.9% beyond inflation; however, this increase reflects a complex set of phenomena at play post-pandemic (SHEEO). For the first time since the Great Recession, "inflation-adjusted education appropriations per FTE were greater than pre-recession funding levels in 2008" (SHEEO, p. 8). The increase in appropriations reflects state commitment to higher education but was also influenced by decreased enrollment and discrete federal stimulus funds that states appropriated for higher education (SHEEO). Overall, the post-pandemic financial outlook was complex, varied significantly by state and institution type, and required an understanding of historical funding patterns. Researchers, including Washburn (2006), Ortagus and Yang (2018), Rosinger et al. (2022), Froelich (1999), and Powell and Powell-Rey (2015) explored changes in revenue and how HEI leaders have engaged in revenue-seeking behaviors to meet financial challenges.

An investigative journalist, Washburn (2006), conducted an extensive review of how higher education's goals have shifted with the influx of corporate funding and interests. Washburn critiqued the corporatization of higher education, blaming specifically the influence of corporate donations on academic and research outputs. Washburn labeled the "introduction of market ideology into the heart of academic life" as the most pressing threat to modern higher education (p. x). Washburn accused HEIs of working to convince politicians of their value to the community, promising to create "engines of economic growth" rather than serving the intellectual development of students and the community (p. xii). Many HEIs have responded to research requests and funding from corporate America with affiliated technology parks, business

incubators, and venture capital funds that "bankroll, promote, and profit from commercially promising academic research" (Washburn, 2006, p. 140). In a recent example, West Virginia University (WVU) President Gordon Gee overhauled WVU's curriculum to align with state industries and eliminated programs that were not profitable or misaligned with vocational opportunities (Powell, 2023).

Ortagus and Yang (2018) explored the relationship between state appropriations for higher education and the prevalence of online education options and asked if public institutions increase their reliance on online education because of decreased state appropriations. Researchers interrogated the relationships between the percentage of students enrolled in online courses, the total number enrolled in online courses (DV), and the institution's total revenue from state appropriations (IV) (Ortagus & Yang, 2018). They also looked at various models of online education, expenditures, scalability for this model, and current knowledge regarding its effectiveness. Using a fixed regression approach and employing IPEDS data, Ortagus and Yang (2018) found a negative relationship between state appropriations and online education at four-year public institutions, particularly doctoral institutions. They concluded that leadership is employing online education as a form of revenue diversification to ensure maintained revenue levels (Ortagus & Yang).

Rosinger et al. (2022) explored state responses to HEI funding cuts, documenting trends and categorizing institutional responses. Researchers conducted a latent profile analysis from publicly available funding data and identified three types of reactions, including low state subsidizing with high tuition and targeted aid, moderate subsidizing and moderate tuition and aid, and broad state subsidization with low tuition (Rosinger et al., 2022). Findings suggested that state funding for higher education was slow to recover post the Great Recession, and states

responded with varying commitments to subsidizing public tuition and balancing need and merit-based aid (Rosinger et al.). Rosinger et al. argued for increased state subsidies in the interest of racial equity, noting that reductions to public funding for HEIs disproportionately impact institutions that serve lower-income student populations. State funding for higher education did not fully rebound from the Great Recession, regardless of the state's response to the recession (Rosinger et al.).

Froelich (1999) evaluated revenue-seeking behavior in non-profit organizations more broadly, with a specific concern around "mission dilution and legitimacy erosion as distractions that emerge from the necessary economic endeavors" (p. 246). Froelich noted that all non-profit organizations struggle with fluctuating government funding, which "has varied over time with changes in political leadership and public policy initiatives" (p. 248). Froelich suggested non-profit organizations should diversify their revenue to enable the management of their dependencies and avoid extreme dependency on limited sources of revenue. Froelich examined three non-profit revenue sources and the constraints typical of each source. Sources included individual contributions, corporate contributions, foundation grants, government funding, and commercial activity (Froelich). Froelich asserted that data did not suggest goal displacement as a "common correlate of commercial revenue" and that "nonprofits seem to use the flexibility responsibly" (p. 259). Based on their findings, Froelich concluded that concerns over commercial activity seem exaggerated, and non-profits benefited from increased revenue and stability.

My theoretical framework selection was influenced by the work of Powell and Powell-Rey (2015), who employed RDT in their study of public colleges and universities. Powell and Powell-Rey (2015) suggested that higher education can leverage RDT to explain three financial

themes: environmental effects on organizations, organizational efforts to manage environmental constraints, and how environmental conditions affect internal organizational dynamics. Powell and Powell Rey recommended that institutions leverage RDT to guide strategy around resource procurement and increase resource capacity. RDT can be understood as an essential organizational strategy to guide decision-making and can also be used by researchers to understand organizational responses to financial crises and increased resource scarcity (Powell & Powell Rey). RDT is a valuable framework and guides how I examine financial decision-making at HEIs during the pandemic.

COVID-Era Federal Support

The third and final subsection of the financial characteristics variables in my research is government aid per FTE. During the COVID-19 pandemic, federal government aid took the form of federal emergency grants for higher education institutions, commonly referred to as the Coronavirus Aid, Relief, and Economic Security (CARES) Act Higher Education Emergency Relief Funds (HEERF). HEERF awards were higher education-specific components of federal COVID aid and were released in three rounds, typically referred to as HEERF I, HEERF II, and HEERF III. HEERF I included $14 billion and was passed by Congress on March 27, 2020, as a part of the CARES Act (U.S. Department of Education, 2023a). The Coronavirus Response and Relief Supplemental Appropriations Act, 2021 (CRRSAA) authorized HEERF II, including $30.75 billion for education, on December 27, 2020 (U.S. Department of Education, 2021). HEERF III was approved as part of the American Rescue Plan (ARP) on March 11, 2021, which granted a final $39.6 billion for higher education (U.S. Department of Education, 2023b). To contextualize the role of federal funding during the pandemic, I reviewed work by Jackson and

Saenz (2021), Miller (2020), Sansone (2022), and Lowman et al. (2021), who discussed the impact and limitations of HEERF grants at HEIs and on students during the pandemic.

Jackson and Saenz (2021) critiqued states for their cuts to higher education funding during the Great Recession that persisted within budgets as many states sought to reduce higher education funding again during the pandemic. Cuts to higher education funding at public HEIs disproportionately impacted access for low-income and students of color, increasing inequity in college attendance and completion (Jackson & Saenz, 2021). Notably, 44% of "current or prospective students from households with incomes below $75,000 reported canceling all plans to take classes during the fall 2020 semester" (Jackson & Saenz, p. 2). Jackson and Saenz noted that the first two rounds of HEERF grants provided necessary but dramatically insufficient funding for HEIs and students. HEERF grants were dispersed with inequitable outcomes, failing to provide funds to the institutions and students that need them most (Jackson & Saenz). In HEERF I and II, 75% of funds were allocated based on the percentage of Pell Grant recipients attending a given institution (Jackson & Saenz). HEERF I disbursed remaining funds based on FTE enrollment, leading to HEIs with more part-time students, often community colleges, receiving less funding (Jackson & Saenz). HEERF II sought to remedy this with a revised formula for disbursement that relied less on FTE enrollment, recognizing that part-time students may have unmet needs and the HEIs that serve them need federal support (Jackson & Saenz).

Miller (2020), in a report published shortly after the passage of HEERF I, similarly critiqued the federal government's funding formula. Miller (2020) also noted that the $14 billion allotted in the first funding round was insufficient to cover anticipated state funding cuts and COVID-related expenses facing HEIs. For example, Miller (2020) cited the University of Arizona, which reported a $66 million loss in early 2020 but only received $16.7 million in

HEERF I funding for operational expenses. Notably, the University of Arizona declared a financial crisis only a few years later (Bauman, 2023). Like Jackson and Saenz (2021), Miller criticized awarding funds based on FTE. Miller succinctly explained the issue with FTE as a proxy for enrollment:

> A part-time student doesn't need to eat any less than a full-time one. If a part-time student's car breaks down on the way to college, they don't only have to fix half of it. It is also likely that as the crisis goes on, the broader effects of the economic disasters caused by the coronavirus will be felt even more deeply by community college students, who are generally lower-income than the typical four-year student. (p. 14)

Miller (2020) made several recommendations to the federal government to guide further support for HEIs, including allowing for broader use of funds by HEIs to cover reduced state appropriations, loss in tuition and auxiliary revenue, using head count instead of FTE in allocations, and funneling federal funds through states to better prioritize public HEIs and create strong federal-state policy partnerships.

Sansone (2023) conducted a comparative case study analysis of CARES Act spending patterns at selected Hispanic Serving Institutions (HSIs) in Texas. Sansone paid particular attention to the funding context of each HSI before the pandemic and sought to understand study results through the lens of RDT. Sansone focused explicitly on the first round of HEERF funding and found that disbursement of HEERF awards disadvantaged public HSIs. Before the pandemic, HSI received less state and federal funding while relying more heavily on public funds (Sansone). Sansone reported the pandemic had a disproportionately negative impact on Latino communities, with more significant job losses and deaths, and Latino students were more likely than their peers to report challenges with the shift to online learning. Sansone (2023) took a

qualitative approach to understanding how HSIs navigated CARES Act funding, noting barriers to access and how institutions overcame barriers. Sansone concluded that CARES Act funding failed to account for historically lower funding at HSIs and greater part-time enrollment at HSIs, which led to inequitable funding outcomes for HSIs. Better accounting for institutional and student context and characteristics would have resulted in more equitable disbursal of funds to support HSIs and the students they serve (Sansone).

Focusing on students and less on institutional impact, Lowman et al. (2021) evaluated the impact of CARES Act disbursement on undergraduate student persistence. Lowman et al. conducted a logistic regression and ordinary least squared regression to answer two research questions: were students in the peer mentoring group more likely to access CARES funding, and were students who accessed funding more likely to persist? Lowman et al. found that direct outreach to students in the peer mentoring program seemed to increase access to CARES funds, though not specifically Pell-eligible students, and access to CARES funds did increase persistence from spring 2020 to fall 2020, regardless of students' involvement in the peer mentoring program. Lowman et al. concluded that peer mentoring programs positively impact student resource access and retention. While Lowman et al.'s (2021) research strayed from other work on emergency funding during the pandemic, it suggested that while public support is critical during times of economic crisis, ensuring robust communication and equitable access to funding opportunities is critical for the success of these initiatives.

Summary of Financial Characteristics

To paint a clearer picture of HEI's financial health, I identified variables that reflect organizations' financial standing and revenue, including the COVID-19 federal emergency aid they received from the government from 2020-2022. While I did not identify variables specific to

HEI expenses, I addressed them in my literature review to contextualize the financial demands facing many HEIs. To understand why revenue is such an important consideration, I outlined the ways in which rising expenses for HEIs put organizations on the defensive, constantly scrambling for revenue to cover expenses that are often out of their control. In particular, I focused on literature that explained the rising and unpredictable costs of HEI faculty and staff to best connect with my dependent variable of layoffs.

Hedrick et al. (2009) used IPEDS data to confirm that administrative expenses at HEIs were stable through the 1980s and began to increase in the 1990s, but the growth was not enough to justify common rhetoric around out-of-control administrative growth and bloat. McClure and Titus (2018) also challenged notions of administrative bloat, finding that HEIs often increased spending on administrative costs to move up in Carnegie Classifications, but over time, spending increases neutralized, suggesting HEIs did not overly swell staffs as a part of prestige-seeking. Archibald and Feldman (2008) tested theories to explain rising expenses at HEIs and found that wage competition for educated labor pits HEIs against corporate employers, and HEIs struggle to offer competitive pay for necessary workers. To compete for necessary faculty and staff, HEIs face swelling payroll costs, which are then the target of reduction efforts when HEIs must cut costs (Archibald & Feldman).

Desrochers and Kirshstein (2014) analyzed long-term staffing changes in higher education, painting a nuanced picture of hiring before, during, and after the Great Recession. They supported the notion that environmental and prestige competition impacted HEI hiring but noted most hiring in the twenty-first century had been uneven across institution types and has primarily included business operations staff and adjunct faculty (Desrochers & Kirshstein, 2014). Jones and Wellman (2010) addressed the rising healthcare costs and benefits HEIs were expected

to cover for employees, writing that benefit costs have increased faster than salary costs. Jones and Wellman also noted that those costs lie outside of HEI's influence, making them a difficult expense to reduce without reducing overall personnel.

The simultaneous challenge of declining revenue exacerbates the problem of HEIs' unpredictable expenses. To best align with the public institutions in my sample, my literature review focused primarily on declines in revenue from state appropriations at public HEIs. Powell and Powell-Rey (2015) outlined decreased state funding for HEIs since the 1980s and suggested that organizations use resource dependency theory to guide their response and grow their diversity of revenue streams. HEIs' revenue-seeking behaviors occasionally catch the scorn and attention of researchers and writers, who question HEIs' ability to manage revenue-generating operations while maintaining a mission of public service (Froelich, 1999; Washburn, 2006). While HEIs sought creative approaches to generating revenue, Washburn (2006) decried the corporate turn of higher education and how HEIs partner with private businesses, accepting money and then responding to corporate interests. However, many other non-profit organizations face similar budgetary concerns. Froelich (1999) studied revenue-seeking behavior in non-profits broadly and found that non-profits generally used commercial activity to subsidize their core operations, refuting claims of mission drift.

Some HEIs sought ways to raise revenue within their educational mission. Ortagus and Yang (2018) investigated the expansion of online education programs as a revenue-seeking behavior in response to decreased state appropriations. Ortagus and Yang (2018) confirmed HEIs with decreased state funding seem to be expanding online programs as a means of generating and diversifying revenue. Rosinger et al. (2022) explored institutional impacts and responses to decreased public funding during the Great Recession, including the ways in which HEIs adjusted

tuition rates and discounts to balance budgets. Rosinger et al. also critiqued the disproportionate impact of public funding cuts on HEIs serving low-income student populations and slow state funding rebounds following the recession.

Finally, I included literature about the federal government's emergency funds distributed to HEIs during the pandemic, broadly called the CARES Act. Tens of billions of dollars were distributed to support HEIs facing sudden and unprecedented budgetary crises. I identified data on institutional awards in my variables to account for how CARES Act funds may have impacted HEIs' responses to the pandemic. Jackson and Saenz (2021) criticized the federal government's strategy for awarding funds, noting that it disproportionately shortchanged HEIs with larger part-time student populations and that the amounts distributed were insufficient to cover losses experienced by HEIs and their students. Miller (2020) concurred that CARES Act funding was insufficient even to cover revenue cuts from state funding and new, unexpected expenses. Miller recommended that the government use student headcount, rather than FTE, to distribute funds and that they broaden allowable uses for funds to help HEIs compensate for other lost revenue sources, including state appropriations.

Sansone (2022) narrowed in on the impact of CARES Act funding on HSIs in Texas. Sansone concluded that a greater reliance on state appropriations and simultaneously lower funding levels and the inequity caused by FTE-based distributions meant that CARES Act funding for HSIs in Texas was not as impactful as promised. Lowman et al. (2021) focused on student access to CARES Act funding and found that institutional communication channels and peer networks supported equitable access to emergency funds for students who needed them. Further, Lowman et al. (2021) focused on student retention due to CARES Act funding, connecting these financial variables to enrollment variables, including overall enrollment and

Pell-eligible student enrollment, specified in the first subgroup of variables. Peer-reviewed research on the impact of the COVID-19 pandemic and emergency funding is likely to continue as data becomes available but the literature reviewed here helps to support my choice to include CARES Act funding as a variable in my research, suggesting these funds may have had an uneven, inequitable distribution with the potential to impact organizational and student outcomes during the pandemic.

Employee Demographics

To address anticipated budget shortfalls during the COVID-19 pandemic, institutions' leadership teams looked at staffing structures for areas to reduce costs and manage institutional expenses (Burke, 2020; Westcott, 2020; Whitford, 2020). Reducing employees is often a quick fix for institutions looking to reduce expenses (Weisbrod et al., 2010). HEIs devote 60-70% of their spending to employee compensation, excluding institutional expenditure on hospitals, auxiliaries, or other independent operations (Desrochers & Kirshstein, 2014). When colleges experience financial stress, literature abounds regarding the high costs and expanding number of college staff and faculty, as well as approaches to financial solvency, budget reductions, and layoffs. Reduced staffing took the form of layoffs, furloughs, early retirement incentives, and freezing positions when individuals left their roles, leaving work to be redistributed to those left behind (Adams-Prassl et al., 2020; Burke, 2020; Westcott, 2020; Whitford, 2020). Critically, individuals in eliminated roles were disproportionately women, people of color, or those without college degrees who suffered the most significant burden in layoffs (Adams-Prassl, 2020; Burke, 2020; Magolda, 2016).

My study considers changes in employee numbers throughout the pandemic, based on IPEDS institutional data and public reporting around layoffs, to quantify employee reductions

during the COVID-induced economic panic. While the pandemic provides a recent example of large-scale layoffs, employee separations were not a new practice in higher education. Institutional leadership should learn valuable lessons from the past decades of economic uncertainty to navigate the current crisis and prepare for the future. Looking at past financial challenges and recessions may offer insight into high-stakes financial threats facing HEIs and how institutions have adapted to mitigate risk. The literature reviewed below is organized to present ways that institutions changed employee structures and numbers in the past to respond to financial challenges. It also reviews pandemic-era literature and data thus far, presenting a picture of COVID-driven layoffs.

Pre-COVID Employee Separations

Literature on employee separations before the COVID era informs my thinking about how institutions may respond to rapid budget reductions and shifts to online operations, particularly early in the pandemic. Westcott (2020) and Whitford (2020) speculated about layoffs and reorganizations that institutions might make to shore up expenses during the unique challenges of the pandemic. To explain the increasing financial hardship for HEIs, some researchers suggested that colleges have become unwieldy and administratively bloated institutions (Carlson, 2018). Carlson named administrative bloat a budgetary concern for many institutions and suggested ways to assess and curtail these costs. Literature on past economic downturns offered insights into how HEIs responded to financial challenges in the preceding decades. RDT suggested that external economic factors impact college and university budgets, and the Great Recession is an illustrative example of this impact (Pfeffer & Salancik, 2003). The Great Recession is a helpful example of a financial crisis when turning attention to the COVID-19 pandemic. Several researchers noted the cyclical relationship between higher education and

the job market in the economy (Barr & Turner, 2013; Brint et al., 2016; Turner, 2014). When the economy slows and jobs become scarce, more people seek out opportunities for higher education to improve their hiring credentials (Brint et al., 2016).

The immediate enrollment response during the pandemic differed dramatically, as higher education enrollment decreased by 7.5% since the fall of 2019 (Nietzel, 2022). Past economic downturns and the pandemic have essential distinctions that researchers must acknowledge when drawing parallels. Unlike many past economic downturns, COVID bucked typical cyclical enrollment trends, exacerbating budgetary shortfalls in higher education (SHEEO, 2023). HEI leaders and researchers may look to past economic challenges for lessons on restoring institutional financial stability, with the caveat that crises may precipitate varied challenges and institutions bring unique characteristics and resources to their responses. For clarity, I presented the literature in this subsection in chronological order of publication to better understand the conversations and research around employee separations in the years before the COVID-19 pandemic. Butterfield and Wolfe (1993), Larkey (1993), Michaelson and White (1996), Love et al. (2010), Hohman et al. (2013), Turner (2014), Brint et al. (2016), and Andrew (2020) discussed the realities of employee separations, presented strategies used by institutions when conducting layoffs, and delved into the human impact of these changes.

Butterfield and Wolfe (1993) presented the challenge facing HEIs of reducing staff and realigning budgets "without cutting back the advances they've made in affirmative action" (p. 23). The standard approach of conducting layoffs in order of reverse seniority and the perception of younger, less senior staff as less critical to the operations of the institution put those staff members, who are more likely to be women and people of color, at risk of layoffs (Butterfield & Wolfe, 1993). Butterfield and Wolfe (1993) addressed the disproportionate impact of downsizing

on minoritized groups and offered suggestions to avoid layoffs or conduct them more equitably. Butterfield and Wolfe (1993) presented a case study of two different approaches to layoffs at Stanford University and suggested that Stanford's approach, using a committee to review all proposed layoffs and their commitment to spare the Multicultural Development Office, helped the institution to avoid allegations of discrimination. Situated in the context of when it was written over thirty years ago, Butterfield and Wolfe's (1993) recommendations in the College and University Professionals Association for Human Resources (CUPA-HR) publication addressed the potential fallout of inequitable layoffs but do not critically address the reality of potential bias in layoffs or challenge the need for personnel reductions.

Larkey (1993) similarly focused on the impact of layoffs on women and people of color and sought clarity around potential discrimination in layoffs. They conducted interviews with a small group to assess perceptions of racial and ethnic discrimination during layoffs (Larkey, 1993). Larkey wondered "Whether layoff decisions are made based on performance, seniority, or business needs, the possibility for adverse impact exists with the usually subjective determinations that are made even with apparently objective criteria" (p. 159). Larkey's concern about the adverse impact on people of color and women in layoff decisions seems to be justified, even almost thirty years later, as women and people of color disproportionately lost jobs during the pandemic (Bauman, 2021; Nadel-Hawthorne et al., 2021). Larkey conducted a case study at a diverse manufacturing plant and interviewed 78 employees to understand their perceptions of the layoff process and ascertain any perceptions they may have of discrimination in the process. Larkey's study found employees, regardless of their job rank or racial/ethnic identity, perceived at some level that there was discrimination in the downsizing process, including favoritism and

inconsistent communication (1993). Larkey said, regardless of the reality around discrimination, perceptions of discrimination matter for managers.

Michaelson and White (1996) wrote that higher education was in recession and HEIs must manage discretionary costs to align with ever-constricting revenues. Michaelson and White focused their work on liability in HEI layoffs and suggested a team approach to decision-making to produce ideal outcomes. Michaelson and White acknowledged the unique character of HEIs and the higher expectations of HEIs as they often serve as the largest employer in their region and are noted for stable, long-term employment opportunities and humane treatment of staff, as they are non-profit organizations. Nevertheless, Michaelson and White offered three suggestions for managing layoffs in the context of higher education, which included making team decisions that involve input from human resources, lawyers, and public relations specialists, putting in place strong personnel policies prior to layoffs to clarify expectations, and addressing personnel problems proactively, before they worsen or the employee in question becomes further entrenched in the institution.

Love et al. (2010) tested a model of stress, interrole conflict, and job satisfaction for those left behind at institutions after a wave of layoffs. Researchers considered workers' experience in the context of demanding work environments and family environments and their negative effect on job satisfaction at HEIs with reduced staffing (Love et al.). Love et al. worked from the premise that those who remain after layoffs are often provided with enhanced responsibilities, which exacerbate any existing stress or uncertainty in their roles and leave less time and energy for family responsibilities outside the office. Researchers mailed surveys to 166 participants that measured word overload, family overload, inter-role conflict, and job satisfaction (Love et al., 2010). As Love et al. predicted, role stress predicted interrole conflict, and interrole conflict

negatively impacted job satisfaction. Love et al. suggested further research examine different levels of impact amongst gender and racial groups and tests on a larger sample. Findings from Love et al.'s work pointed to the negative consequences of layoffs that go beyond the employees who lose their jobs and suggested HEIs create further challenges to morale and community amidst layoffs.

Hohman et al. (2013) highlighted the challenge faced by the California State University System, a state system selected as a part of my study's sample, as the system faced budget cuts from state funding. Faculty and staff were asked to vote on mandatory 18-day furloughs and ten percent pay cuts for all faculty and staff to prevent position eliminations (Hohman et al.). Faculty across the system voted to approve a 10% pay reduction and mandatory 18-day furlough to avoid job losses (Hohman et al.). However, Hohman et al. found that minority faculty reported more significant financial strain, less autonomy, and greater intent to depart their roles following the mandatory pay cut and furloughs. In this example, pay cuts and furloughs were implemented across the board, with all faculty receiving the same outcome (Hohman et al.). The opportunity to vote in this situation was significant. Though some faculty and staff remained unhappy with the outcome, employees could weigh in on this decision and use their voices to impact it (Hohman et al.). While seeking input from those impacted was a positive step, a more nuanced and critical lens could have led to more equitable outcomes.

Turner (2014) focused specifically on the impacts of the Great Recession on the faculty labor market. Turner took a broader look at institutional financing, considering government appropriations, endowment returns, gifts, and net tuition as causes for chronic under-staffing in the years before the Recession and accelerating during that time frame. Additionally, Turner (2014) conducted an informal analysis of hiring freezes via a review of university websites and

student newspapers to map personnel reductions. Turner found decreased hiring after years of budget cuts before the recession and increased enrollment led to increased faculty-student ratios during the Great Recession. The Great Recession widened the stratification between institutions struggling to adapt to external pressures and those more financially secure or organizationally nimble (Turner). Many institutions that struggled to adapt were HEIs serving lower-income populations, threatening success outcomes for disadvantaged populations (Turner).

Brint et al. (2016) questioned the mainstream press narratives surrounding the Great Recession and higher education. Brint et al. suggested that stories about layoffs catch readers' attention; thus, news sources often prioritize these stories, distorting the reality of layoffs in higher education. Researchers reviewed and coded over 300 stories from Lexis-Nexis reporting on the recession and HEIs to identify information on personnel changes beyond data reflected in IPEDS (Brint et al.). Codes were used for several cluster analyses to create four categories describing institutional activity during the recession (Brint et al.). Through the Great Recession, larger and more complex institutions had more options for organizational adjustment, spending reduction, and revenue generation to mitigate the impact of financial hardship (Brint et al.). Brint et al. noted all institutions in the study survived the recession, and many expressed optimism as enrollment rose and leadership adapted to new financial constraints.

Andrew (2020) solicited narratives from faculty who took part in voluntary reductions at their institution and resigned as part of budget reductions. Participants in Andrew's study provide detailed and personal accounts of their experience with "voluntary" reductions and suggest that these changes were often not genuinely voluntary but the result of years of reorganization, resource, and responsibility reallocation, and occasionally even harassment, that led to faculty departures. This study provided an eye-opening insight into how processes that may seem

equitable or inclusive to outsiders still have the potential to be abusive or traumatizing to the individual impacted and can reflect the same power dynamics of top-down organizational change. Andrew (2020) asked faculty participants to provide written responses to a single question regarding their experience with voluntary layoffs. As seasoned writers, the faculty provided gripping accounts of their painful experiences and disenchantment with the institution. While this study was powerful and centered, in painful detail, the human toll of layoffs, it still left me with questions about the systems at play that perpetuate these experiences and how we can modify them to make change.

COVID-Era Layoffs

Research on layoffs in higher education during the COVID-19 pandemic is limited; more will become available in the coming years as the true impact of the pandemic is clear. While robust scholarly research on the impacts of pandemic-driven layoffs is likely forthcoming, initial information painted a bleak picture of layoffs for staff and part-time faculty, particularly for people of color, women, older workers, and workers without a college degree. While workers of color represent just a quarter of higher education's labor force, more than half of the workers who lost jobs have been people of color (Bauman, 2021). Similarly, women accounted for 56% of the workforce in higher education before the pandemic, and they accounted for 58% of job losses (Bauman). Jackson and Saenz (2021) affirmed, "Higher education layoffs were concentrated among office and administrative staff, who earn on average $40,000 a year, followed by cleaning and building services workers and food preparation workers" (p. 21). Additionally, Bauman (2022) cautioned that estimates of layoffs might not reflect the full impact, as Bureau of Labor Statistics data do not include information on employees in third-party contract companies, including those frequently employed in maintenance, housekeeping, and

food services positions. In this subsection, I review initial data on layoffs during the pandemic and the limited scholarly work on the topic. Nadel-Hawthorne et al. (2021) synthesized human resources data in higher education, while Adams-Prassl et al. (2020) presented initial findings on layoffs. Coibion et al. (2020), Montenovo et al. (2022), and Fana et al. (2020) also conducted related research that helped shape initial understandings of this recent phenomenon.

Nadel-Hawthorne et al. (2021) presented extensive data on COVID-era layoffs in a report from the College and University Professionals Association for Human Resources (CUPA-HR). Nadel-Hawthorne et al. found staff positions (primarily non-exempt, hourly workers), which included service/maintenance workers and office/clerical workers, were more likely to be occupied by people of color than administrative and faculty positions. 44% of service and maintenance workers at participating HEIs were people of color, incidentally the same labor category that experienced the most considerable reduction in employment from 2020-21, at 4.1% (Nadel-Hawthorne et al.). Nadel-Hawthorne et al. also found office/clerical workers were reduced by 3.3%. When people of color are disproportionately represented in lower-ranking, lesser-paid, and disempowered positions within institutions, they are vulnerable to the employment whims of institutional leadership.

Men of color occupied 13% of all staff positions, and women of color occupied 20% (Nadel-Hawthorne et al., 2021). Black men were best represented in the service/maintenance sector, where 72% were men and 14.2% were Black men (Nadel-Hawthorne et al.). In service/maintenance roles, 44% of employees were people of color, compared to 34% of HEI employees overall (Nadel-Hawthorne et al., 2021). Meanwhile, Black women were best represented in the office/clerical sector, where 88% were women and 12.6% were Black women (Nadel-Hawthorne et al.). Meanwhile, in other areas of the higher education workforce, 78% of

faculty are white, and 87% of senior administrators are white (Bischel & McChesney, 2017; Pritchard, 2020). This de facto segregation created devastating impacts and disproportionate hardship for people of color when institutions slashed spending in response to the COVID-19 pandemic. Non-exempt staff and non-tenure track faculty members are both disproportionately people of color and women, leading to power imbalances that make these roles vulnerable to decisions made by leadership without their input (CUPA-HR, N.d.; Nadel-Hawthorne).

Adams-Prassl et al. (2020) completed the most comprehensive study I could find on layoffs in higher education during the pandemic. Adams-Prassl et al. conducted real-time surveys to understand the immediate labor market impact of the COVID-19 pandemic in the US, the UK, and Germany. Many differences were noted in labor outcomes, and researchers highlighted differences in healthcare arrangements in the three countries to illuminate the burden of healthcare costs and their impact on organizational decision-making (Adams-Prassl et al.). In the US, institutional personnel costs go beyond just salary, including health insurance and other benefits (Adams-Prassl et al.). In Germany, a robust state-run healthcare system may allow organizations to reduce personnel costs by reducing hours without having to contend with maintaining employee benefits (Adams-Prassl et al.). The high cost of healthcare for HEIs drives up the cost of maintaining staff on payroll, making staff more vulnerable to layoffs during a financial crisis (Adams-Prassl et al.). External pressures abound in this aspect of organizational costs, and higher education has limited options in making internal changes to adapt to this external pressure.

Adams-Prassl et al.'s (2020) findings raised concerns about the disproportionate impact on US employment and the inequitable implications for job security for women and individuals without a college degree. Researchers explored which types of jobs were most likely to suffer

employment losses (Adams-Prassl et al.). By early April 2020, 20% of those employed before the onset of the pandemic had lost their jobs in the US, compared to 17% in the UK and 5% in Germany (Adams-Prassl et al.). In the US, women, those without a college degree, those who could not efficiently complete their jobs remotely, and those with temporary work arrangements were likelier to lose their jobs during the initial weeks of the pandemic (Adams-Prassl et al.). While faculty and full-time administrative staff shifted to remote work in 2020, support staff, food service, and facilities staff faced a less clear future, with many of their day-to-day roles put on pause indefinitely (Burke, 2020).

Coibion et al. (2020) published a working paper as part of the National Bureau of Economic Research, presenting survey results from a household survey as part of the Nielsen Homescan. Coibion et al. looked at broader US employment measures beyond higher education, noting that job loss was more extensive than reported at the time. Cobion et al. calculated labor market changes by examining the employment-to-population ratio, the unemployment rate, and the labor force participation rate to compare pre-pandemic numbers with numbers from April 2020.

Coibion et al. estimated that 20 million people lost jobs between January and April 2020, more than all job losses during the Great Recession, noting that the pandemic presented a labor environment that differed dramatically from past recessions. Notably, the unemployment rate, typically constructed by the Bureau of Labor Statistics, only showed a two-point increase (Coibion et al., 2020). However, the employment-to-population ratio declined from 60% to 52% during the same time (Coibion et al.). Coibion et al. found that the unemployment figures did not reflect the individuals who lost employment, as many respondents indicated they were not immediately job searching, which led them to be classified as out of the labor force rather than

unemployed. Cobion et al. concluded that unemployed workers taking a break from the labor force and those who chose to retire early skewed the real impact of job losses in early 2020.

Montenovo et al. (2022) examined the socioeconomic divide in the initial labor market changes during the pandemic. Montenovo et al. used the Monthly Current Population Survey (CPS) results to document disparities in early pandemic job losses. Hispanic workers, younger workers, single parents, and those with a high school diploma or some college suffered the most significant initial losses (Montenovo et al.). Montenovo et al. completed a multipart study to investigate job losses by social identity factors, job type, industry, education, and the role of caring for dependents.

Using a Blinder–Oaxaca decomposition, researchers also explored how job losses were impacted by the pre-pandemic sorting of individuals into various job types (Montenonvo et al.). Results showed that differences in pre-pandemic job sorting explained a significant portion of labor outcomes for different demographic groups (Montenonvo et al.). However, pre-pandemic sorting did not perfectly explain different outcomes, and Montenovo et al. suggested differences "could possibly reflect disparate treatment by employers" (p. 829). Another finding particularly relevant in higher education was Montenovo et al.'s finding those with college degrees and those without high school degrees were better protected from job losses than workers with a high school degree or some college. Researchers suggested this may reflect college graduates' ability to work remotely and the essential classification of work done by those without a high school diploma (Montenovo et al.).

Finally, Fana et al. (2020) analyzed labor outcomes by job sector in Germany, Spain, and Italy. Limited research in this area, particularly on the equity impacts of COVID-19, made this study appealing for my literature review despite its location outside of the US. Fana et al. (2020)

qualitatively analyzed sector lockdowns in Germany, Spain, and Italy based on government confinement orders and determinations of essential and nonessential work. They then created a quantitative range to assign various job sectors in each country, ranking them from essential (1) to nonessential (0) and assigning values in between for sectors operating in modified conditions (Fana et al.). Fana et al. found an asymmetrical labor outcome among countries and labor sectors within countries. Southern European countries were hit hardest by the pandemic in the early months and rely most heavily on tourism for employment, a largely closed sector with staff unable to work remotely (Fana et al.). Those working in the tourism industry were also more likely to be female, young, and not have a college education (Fana et al.). Fana et al. recommended policy approaches to address the inequitable labor impact of the pandemic which mirror strategies in higher education, including diversifying economic industries (or revenue sources for HEIs) and advocating for social welfare programs (or requesting public support for HEIs) to provide a safety net for those negatively impacted in labor downturns (Fana et al.).

Summary of Employee Demographics

Employee demographics, including numbers and identity breakdown, are the lynchpin of my study. The dependent variable in my study was the occurrence of layoffs during the peak years of the COVID-19 pandemic. I also created a category of independent variables that includes demographic information about faculty and staff to reflect changes in numbers over the years of the pandemic and any fluctuations in the social identity of HEI employees. My literature review asserts that personnel reductions are standard practice in higher education when organizations seek quick ways to cut costs. I organized this section to present a history of personnel reductions in higher education before the pandemic and then present more recent literature on the impact of layoffs during the pandemic.

Reviewing the literature on pre-COVID employee separations frames the financial state of higher education before the onset of the economic crisis of the pandemic. Literature establishes that layoffs and accompanying issues of inequity were standard practices before the pandemic. Butterfield and Wolfe (1993) presented an example of how Stanford University sought input and took intentional steps to avoid allegations of discrimination in layoffs, but did not critically question power dynamics, bias, or the need to layoffs. Larkey (1993) conducted a case study in a factory environment and found that employees often perceived bias or discrimination in layoffs; even if the numbers do not reflect discrimination, employees are wary of favoritism and special treatment. Michaelson and White (1996) made specific reference to the altruistic nature of HEIs and the ways this complicates layoffs, providing guidance on how to conduct layoffs and avoid liability. Andrew (2020) looked at the personal impacts of faculty departures, with many faculty submitting narratives expressing pay and inequity to complicate the voluntary and allegedly fair processes that HEIs espoused. The literature established that concerns around discrimination and disparate impacts of layoffs preceded any personnel reductions during COVID.

Literature about layoffs abounds immediately following economic downturns, and literature from the Great Recession offered the most recent comparison of layoffs in higher education. Turner (2014) examined the impact of the Great Recession on staffing, finding that many HEIs had already reduced personnel prior to the Recession, and then increased enrollment led to higher faculty-student ratios and widened the gap between financially stable and more unstable HEIs. Hohman et al. (2013) presented a case study in which faculty voted on furloughs and pay cuts to preserve positions. However, the majority vote did not consider the implications of pay cuts for those at the lower end of the pay scale, causing inequitable impacts on junior

faculty (Hohman et al., 2013). Brint et al. (2016) also focused on the Great Recession and coded news articles around layoffs at HEIs, finding that larger institutions with more options for cost and revenue redistribution avoided layoffs. Finally, Love et al. (2010) focused on employees remaining after downsizing and found that layoffs negatively impacted those remaining in their roles, adding additional responsibilities and stress. Literature in this section offered examples of layoffs inequitably impacting both individual workers and institutions, widening gaps between the privileged - senior leaders, tenured faculty, those with dominant social identities, or well-resourced HEIs - and the workers and HEIs in positions more vulnerable to the negative effects of economic downturns.

While literature focusing on COVID-era layoffs continues to be published, I collected currently available literature and reports to contextualize my study and variables. Published by the largest professional organization for human resources in higher education, Nadel-Hawthorne et al. (2021) offered an early numerical breakdown of faculty and staff laid off during the pandemic. Their report provides insight into occupational segregation within higher education and the ways that this segregation led to a disparate impact of layoffs (Nadel-Hawthorne et al., 2021).

Adams-Prassl et al. (2020) presented similar early findings, noting that women, those without a college degree, and those with in-person work obligations were more likely to lose their jobs early in the pandemic. Adams-Prassl et al. also noted the impact of high healthcare costs on HEIs' decision to lay off employees, echoing Jones and Wellman's (2010) concerns about rising costs at HEIs. Montenovo et al. (2022) disaggregated data regarding pandemic job losses to shed light on the inequitable impact of job losses. Like others, Montenovo et al. found job losses particularly hurt women, Hispanic workers, and younger workers. Interestingly,

Montenovo et al. (2022) complicated this picture by finding that workers without a high school degree were better protected from job losses than those with high school degrees or some college, pointing to the essential nature of the work performed by this group of employees.

Coibion et al. (2020) focused broadly on the labor force, looking at layoffs during the pandemic and asserting that unemployment numbers did not accurately reflect job losses. Coibion et al. found many took a break from employment after job losses and were not categorized as searching for work, thus they counted in national statistics as being out of the workforce rather than unemployed. Finally, Fana et al. (2020) looked at multiple European countries and made policy recommendations for supporting uneven pandemic layoff outcomes, including diversifying revenue sources and creating a strong social safety net. I include select sources about layoffs outside of higher education to paint a broader picture of the economy and offer insight from other industries facing similar financial constraints.

Methodological Considerations

Despite the many approaches to studying financial crisis in higher education, I designed a study that would take a broad, quantitative approach to clarifying the role of financial factors in personnel reductions at HEIs. Love et al. (2010), Andrew (2020), and Hohman et al. (2013) focused on the specific experiences of individual workers, capturing these experiences through surveys and interviews. Similarly, Butterfield and Wolfe (1993), Larkey (1993), and Sansone (2022) conducted case studies that provided detailed and case-specific findings. To initially clarify the relationship between money and HEI personnel, I take a quantitative approach to confirm relationships between variables influenced by Ortagus and Yang (2018), McClure and Titus (2018), Cragg (2009), and Lynch (2023).

Ortagus and Yang (2018) conducted fixed effects regression to understand the relationship between institutions' implementation of online education programs and declining state appropriations. Ortagus and Yang employed resource dependency theory (RDT) to frame HEIs' reliance on external revenue sources. For Ortagus and Yang (2018), RDT explained how institutions react to decreasing revenue from one source (in this case, public funds) and thus supplement and diversify revenue from new sources. An interesting takeaway from Ortagus and Yang's methods was how they converted variables that were not naturally percentages or dummy indicators using a "natural logarithm" to model a linear relationship, "reduce sensitivity to variations in institutional size, and simplify interpretation" (p. 852). This approach was something I might have considered exploring further had I found any of my variables did not lend to straightforward analysis. Finally, Ortagus and Yang allowed time for changes in state appropriations to impact institutional budgets. Ortagus and Yang thus lagged their data collection by one year for a more accurate impact representation, which I mimicked in my data collection proposal.

McClure and Titus (2018) used IPEDS data to compile dependent variables from academic support and institutional support cost categories. Like many researchers, McClure and Titus adjusted for full-time enrolled (FTE) students and adjusted for inflation using the Consumer Price Index. Inflation is a particularly relevant adjustment in the data due to the timeframe around which my research is based. 2021, one of the years covered in my study, saw a 7% increase in the prices of consumer goods, the highest recorded since 1981 (U.S. Bureau of Labor Statistics, 2022). McClure and Titus also used the literature to identify control variables, which I considered when I finalized my independent variables. McClure and Titus explained, "We also included a squared term of FTE enrollment to capture possible

(dis)economies of scale" (p. 972). Economies of scale play an essential role in HEI staffing, causing staff layoffs at smaller HEIs to have more significant impacts on the workload of remaining staff and limiting the options for reorganization and distribution of responsibilities (Brint et al., 2016; LeClair, 2022). McClure and Titus (2018) offer a way to capture how the impact of economies of scale might not be fully reflected in IPEDS data and offer a methodological approach to more fully encompassing the nuances of diverse institutions.

To better understand logistic regression in higher education research, I referred to Cragg (2009), who examined the relationship between student and institutional variables that influence the likelihood of student graduation. Specifically, Cragg (2009) used a matching model to determine how far students deviated from institutional means of academic performance (average SAT score) and affordability (amount of outstanding financial need). A logistic regression used four categories of independent variables to conclude a negative relationship between graduation rates and students' deviation from the institution's average SAT score, and a negative relationship between graduation rates and students' outstanding financial need. Cragg concluded that students who deviated too far from HEIs' average SAT score or socioeconomic status face increased challenges to graduation.

Cragg's (2009) discussion of findings considered the role of institutional action and acknowledged the problem of HEIs only admitting students who align with their averages as counterproductive to diversity, equity, and inclusion goals. In the literature review, Cragg reviewed other works that used a matching model to understand student graduation and success and, citing one study, noted, "the authors conclude from their findings that students can increase their probability for graduation by attending a college that matches, or is close to, their academic ability" (Cragg, p. 396). In this case, even seemingly critical work does not question the

assumptions and limitations of applying the matching model to student success. Park (2018) spent extensive time discussing the role of undermatch and mismatch in issues of access and equity but also neglected to interrogate this framework's elitist and deficit-centered nature. For quantitative research, particularly critical quantitative work, theoretical assumptions and models used in research provide a basis that influences the entire study. Cragg (2009) presented the notion of matching as a valuable tool in understanding student success and spoke to the ways it has been empirically validated, but did not challenge the way this model could frame students' success, or lack thereof, as an issue of mismatch, rather than an institutional failing. This is undoubtedly a caution for me as I consider the assumptions inherent in the theories employed in my work.

Finally, Lynch (2023) provided a helpful example of logistic regression in higher education research. Lynch sought to understand the prevalence of secondary trauma symptoms amongst student affairs professionals and the factors that may predict self-reported symptoms. Lynch asked approximately 600 participants to complete a survey reporting their symptoms based on an established scale of secondary trauma symptoms. Lynch's dependent variable included whether participants met the criteria for all four symptom groups. While the focus of Lynch's study varied from the focus of my study, I took away a valuable approach to organizing multiple continuous and categorical independent variables to assess their impact on one categorical dependent variable. I was also influenced by Lynch's thoughtful use of the literature to include relevant personal identity factors as independent variables. Lynch noted the literature suggested that specific personal characteristics might predict greater secondary trauma, including gender identity, seniority within the organization, race, and sexual orientation. Lynch's inclusion of social identity as an independent variable offered a strong example of shaping a logistic

regression encompassing human impact, emotions, and a critical approach to a quantitative study.

Conclusion

The literature reviewed in this chapter influenced my selection and understanding of variables and will help readers contextualize the economic situation facing HEIs. By organizing my literature review to mimic the categories of institutional characteristics considered in my study, the literature review offers details that shape each subsection of variables, including enrollment and student demographics, financial characteristics, and employee demographics. First, enrollment and student demographics focused on challenges facing HEIs, including increasing tuition dependence and volatile enrollment patterns that destabilize the revenue that HEIs rely upon in the form of tuition dollars. In the second section, financial characteristics included the unpredictable expenses facing HEIs for basic operations, declining revenues, particularly in the form of state appropriations, and the influence of COVID-era federal support, a critical lifeline for many HEIs during the pandemic. Third, employee demographics included a review of pre-COVID employee separations, focusing on past economic downturns and a brief review of the research thus far around COVID-era layoffs. The past research on related topics provides a strong foundation for forming my research questions and variables.

In addition to providing context on the variable selection for my study, the literature reviewed here offers guidance on my research methods. Ortagus and Yang (2018), Powell and Powell Rey (2015), Santos and Haycock (2016), Jackson and Saenz (2021), and Sansone (2023) all speak to the unique economic situation of public higher education institutions. I focus my research on public HEIs to best understand the critical role of state appropriations in financial stability for HEIs, particularly during financial uncertainty. LeClair (2022) wrote “it is

inconceivable that state governments would allow public universities to fail" despite the many challenges they may face in the coming years (p. 55). This may be true; however, state governments may require drastic measures from HEI leadership to ensure institutions do not fail, which could include steps detrimental to the well-being of some stakeholders or directly conflict with an institution's mission and role in the community. Jackson and Saenz (2021) found "state education jobs, which are primarily in higher education, declined by 14 percent or 353,000 jobs from February to December 2020" (p. 21). The volatile role of state appropriations made public institutions an appealing area upon which to focus to gain clarity around the role of public funds in furthering the success of public HEIs, as they offer the most robust reflection of changes to funding during the recent pandemic.

Finally, methodological considerations arose from my review of the literature that shapes variables and the methods of my study. Reviewing data and literature on layoffs, quantifying layoffs would likely be challenging and inaccurate. Thus, I chose to shape layoffs as a binary variable, leading to the logistic regression design. To ascertain whether HEIs conducted layoffs, I was influenced by the approach of Brint et al. (2016), who sought stories from Lexis-Nexis to identify sites of layoffs beyond simple changes in employee numbers reported in IPEDS. Cragg (2009) and Lynch (2023) provided logistic regression examples in higher education and offered examples of how institutional characteristics will be analyzed as possible predictors of layoffs during the pandemic.

CHAPTER 3

METHODOLOGY

As described in Chapter One, my study identifies relationships between institutional characteristics (e.g., endowment, revenue received from public funding, tuition rates, enrollment trends) and layoffs during the COVID-19 pandemic and ensuing financial crisis. My literature review provides a foundation of knowledge around the economics of higher education in recent decades and its implications for staffing. Chapter Two also provided detailed descriptions of essential influences on HEIs' financial health, including fluctuating sources of revenue and expenses. Finally, the literature review helps to draw connections between institutional financial health and staffing models, employment stability, and layoffs. My study considers institutional descriptors and contextual factors to understand the relationship between the decision to conduct layoffs at colleges and universities in four large, centralized state higher education systems. While much of the literature on layoffs focused on workers' experiences - either those laid off, the decision-makers, or those left behind after downsizing - my study intentionally focuses on the institutions themselves. Aydarova (2019) suggested the value of studying powerful systems to query the root of problems within research rather than just the outcomes. By studying the institutions and their connections to layoffs rather than the individuals impacted, I aim to expose connections between institutional factors and layoffs.

I am interested in understanding the power dynamics, priorities, and financial realities that guide decision-making on an organizational level. DuBois (1898) encouraged the critical examination of power structures to reveal the truths of oppression. Studying up, in this case, looking at descriptive factors and financial data for higher education institutions, can "reverse the

gaze" of research and problematize the disease rather than the symptoms (Patel, 2016, p. 15). My study sheds light on institutional decision-making and economics by quantitatively interrogating institutional finances and employment outcomes. My work is rooted in a deep concern about the approaches institutions choose to achieve financial solvency and the damage they can do to institutional integrity and the welfare of individual employees.

My study uses a non-experimental, critical quantitative design to determine institutional characteristics that present a statistically significant relationship with layoffs at the sampled institutions (Stage, 2007). The sample group includes 173 institutions from the California State University System, the Kansas Board of Regents-governed system, the Minnesota State system, and the State University of New York system. Enrollment, financial, and employment data, collectively called institutional characteristics, highlight economic and staffing changes during the COVID-19 pandemic. My research uses institutional characteristics that predict employee layoffs from 2019-20 to the 2021-22 academic year. My professional experiences, positionality, epistemological viewpoint, and a conceptual framework designed to account for dissonant power structures that enable layoffs all help to shape my approach to studying this topic. In this chapter, I review my position on layoffs during the pandemic, the research paradigm, and the conceptual framework I bring to the topic. I also present my methodological approach, including research questions, sample, variables, and approach to analysis.

Positionality

My interest and perspective on this topic are inseparable from my personal and professional history. My childhood love of school, my career on campuses, and my working-class, small-town upbringing shape my positionality as a researcher. I left my hometown for college after high school and have spent the past 18 years on a college campus. College opened

my mind to worlds I did not know existed, validating beliefs and values that were devalued in my childhood. I am a first-generation graduate student from a place where educational pursuits are primarily vocational. Intellectual exploration for knowledge generation was seen as a waste of resources that could be dedicated to more *productive* paths. In college, I found values that spoke to my underdeveloped beliefs in the greater good, community, and the value of intellectual curiosity and personal growth beyond profits and production. However, I was troubled by the incongruence between academia's stated values and their actions, particularly toward staff and faculty on campus.

Much of my professional experience challenged my initial idealistic views and brought business interests to the forefront of my understanding of institutions' functions. Many of my most formative and life-changing career experiences stemmed from financial and organizational decisions to conduct layoffs in the name of reorganization and financial solvency. Most recently, I took a new job in early March of 2020. By mid-March, everything seemed to come crashing down. In May 202, without my input, institutional leadership laid off both staff members in my department. I was on the call with human resources when we broke this news to my two Black male staff members, just one week after the brutal, public murder of George Floyd and amid a once-in-a-lifetime pandemic. I witnessed the intense and life-altering impact the decision to terminate positions can have on individuals.

In a prior role, I experienced a layoff amidst a reorganization that eliminated my position. While literature and rhetoric frame layoffs as a business decision, it is a deeply personal experience (Weisbrod et al., 2010). Further, higher education's unique mission and character point to higher moral standards in decision-making, drawing this decision into a complex ethical dissonance (Kezar, 2014). The dissonance of my idyllic undergraduate experience and my

professional experience on campus drove my intellectual interest in higher education business operations.

Research Paradigm

My study examines the actual or perceived connection between employee layoffs and organizations' financial solvency. News sources often paint layoffs as an inevitability of financial upset (Westcott, 2020; Whitford, 2020). Brint et al. (2016) questioned the mainstream press narratives surrounding the Great Recession and higher education. Brint et al. suggested that stories about layoffs catch readers' attention; thus, news sources often prioritize these stories, distorting the reality of layoffs in higher education. Inspired by this questioning of shared assumptions, I shaped my research questions with a critical framework applied to quantitative inquiry. Stage (2007) proposed that a researcher's reframing of traditional questions makes them a quantitative criticalist. Through quantitative methods, I pursue a critical line of inquiry by questioning familiar narratives around layoffs, including their necessity and connection to financial factors at HEIs. Stage (2007) identified the goals of critical quantitative researchers, including "use data to represent educational processes and outcomes on a large scale to reveal inequities and to identify social or institutional perpetuation of systematic inequities in such processes and outcomes" (p. 10). Through a critical quantitative approach, I reframe data in a way that nuances assumed truths and thus paves the way for further social change.

As the researcher, I also ground this study within the context of my axiological, epistemological, and ontological viewpoints. My personal experience in higher education—both as a student and professional—influences my axiological view that higher education was transformational and has the potential to impact individual and collective lives positively. Education can liberate, inspire creativity and innovation, and usher in new possibilities for those

it touches. While imperfect, higher education can empower individuals and build more equitable societies for its students, employees, and the communities it touches. Everyone interested in pursuing their education should have the opportunity to do so, and we have a social imperative to ensure that access and success in higher education are attainable. Therefore, I was deeply concerned when I saw higher education institutions (HEIs) falling short of their stated values and potential for positive impact.

In my epistemological view of myself as a quantitative researcher, I collect and synthesize data to uncover connections between variables. I am directly involved in selecting what variables to use for analysis based on the literature and my own lived experience and judgment. While I do not influence or change the data, I determine the methods of data analysis and what conclusions the research draws. I guide the direction of the research, select the lens through which I interpret findings, and propose an ensuing inquiry. When I decided to study the relationship between institutional characteristics and layoffs, I structured my inquiry as a quantitative approach with a critical lens, based on my own positionality. Finally, my ontological view is that knowledge is socially constructed, approved by those in power to be broadly disseminated and adopted, and then embraced as truth by individuals and communities. Lather (1992) challenged the notion of facts as neutral, highlighting the role of power structures in creating truth, and Lather's perspective shapes my view on truth and fact. When news reporting and research suggest layoffs are an inevitable outcome of a financial crisis in higher education, I question this broad assertion and crave the data to validate, dismiss, or nuance this claim.

My study is a first step to understanding how various environmental and institutional traits impact institutions' lay-off decisions. I wrote research questions with the framework of constructionism at the forefront — to question assumptions and propose interpretations of new

social phenomena (Jones et al., 2014). With my critical quantitative approach, I identify statistically significant relationships between higher education and the layoff process to suggest new interpretations and meanings for this experience. The theoretical frameworks that comprise my conceptual framework provide a lens through which I frame my research project design and analysis.

Conceptual Framework

In the US economy, HEIs manage competing demands between their need for resources to operate and their staff's need for financial security in wages. HEIs also serve an essential role in society, educating citizens, employing thousands, and helping to serve their local communities (Kezar, 2014). Thus, to best frame this study on the actions of HEIs as organizations, my conceptual framework considers forces impacting both the internal HEI practices and the external pressures on organizational operations. On the internal level, Ray's (2019) theory of racialized organizations and Monin and Miller's (2001) theory of moral credentials explain internal bureaucratic logics shaping internal decision making. Meanwhile, academic capitalism, resource dependency theory, and wage dependency explained the external pressures on HEIs and the relationship between organizations and labor (Perrow, 1991; Pfeffer & Salancik, 2003; Slaughter & Leslie, 1997).

Internally, it is essential to acknowledge the role of humans in all organizational decision-making. Tierney and Rhoads (1993) outlined several aspects of critical theory, including recognizing the role of power and hierarchy in human subjectivity and putting theory into action through research. I frame my research to critically examine the role of power structures in influencing human decision-making and how leaders do or do not challenge status quo dynamics. To divorce the human aspect of organizational operations is to ignore the potential of

bias in outcomes. While organizational theory may help explain the various pressures impacting HEIs' operations, humans decide how to respond to organizational challenges in ways that align with the pressures they face. When a crisis occurs, there are multiple ways decision-makers can lead the organization, and humans in these positions choose the path forward.

However, Ray (2019) explained leaders often follow familiar paths in decision-making and writing: "When people act creatively in the face of new problems, they may generate novel mechanisms. However, this creativity is not entirely random: it is often constrained by habitually enacted schemas that are transposable or easily applied to new circumstances" (p. 34). Context, systems, and social conditioning influence human beings, shaping organizational change outcomes. Theories of racialized organizations and moral credentials illuminate deeply engrained racial schemas that are embedded in bureaucratic processes and shape human decision-making and outcomes (Ray, 2019; Monin & Miller, 2001).

Externally, organizations face pressures that guide their response to any demands for change. RDT suggested that HEIs depend on their environment for income and resources (Pfeffer & Salancik, 2003). Simultaneously, wage dependency means workers rely on organizations for resources through wages and benefits (Perrow, 1991). Workers' revenue stability is thus downstream of the revenue pipeline for organizations. In the ideal capitalistic outcome, organizations successfully procure resources and can pass some of those resources down to their workers as wages and benefits (Slaughter & Leslie, 1997). Throughout their lifetime, organizations must adjust, and course correct for changes in revenue (Pfeffer & Salancik, 2003). A subtle ebb and flow of resources at the organizational level does not often have the significant effect of causing large-scale disruption to employment stability for workers and is tolerated as an aspect of day-to-day business operations. RDT suggests organizations will

respond to constrictions in revenue by seeking new revenue sources, trimming expenses, or combining both approaches, and the scale of institutional responses varies based on the scale of sudden resource restriction (Pfeffer & Salancik, 2003). When HEIs face a sudden, severe constriction of resources, they will respond more aggressively to cut costs, causing extensive disruptions for students, employees, and their communities. The relationships between theories are illustrated in Figure 3.1 below.

Figure 3.1

Shifting the Burden of Financial Crisis

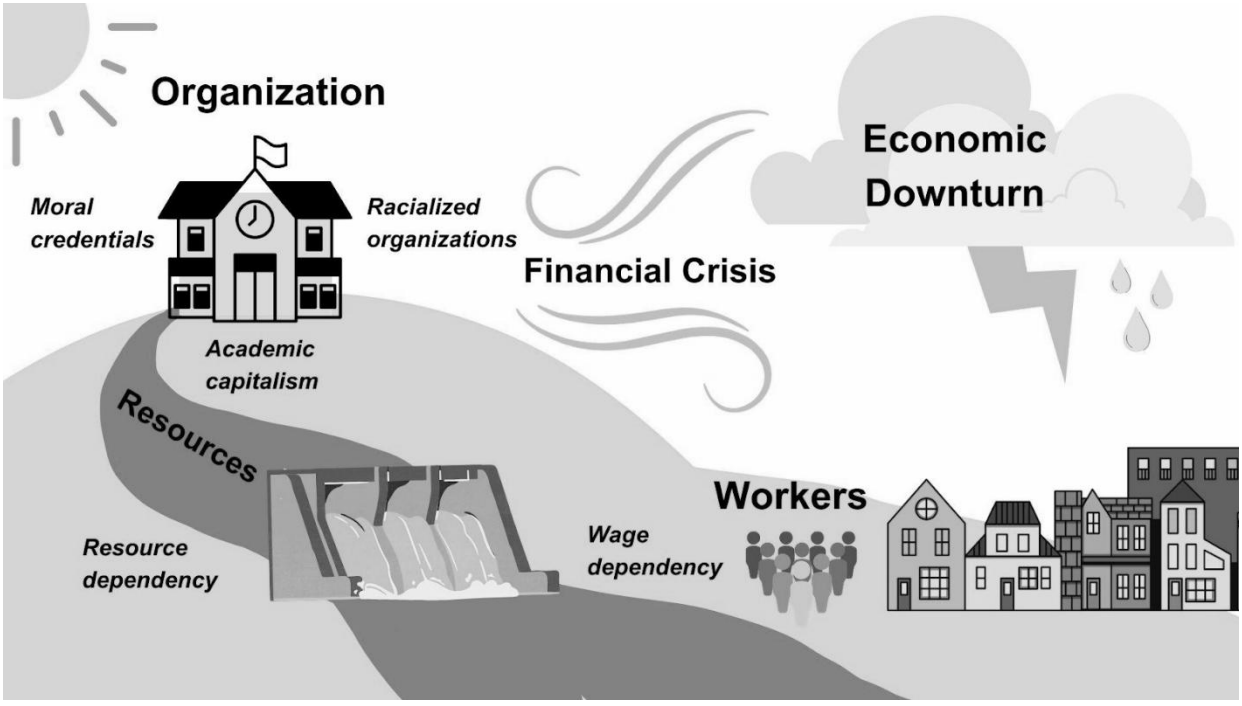

Figure 3.1 represents organizations, in this case HEIs, as the proverbial "ivory tower," standing on higher ground above the local community and workers. A stream runs from the top of the hill, reflecting the resources that trickle down from HEIs to their local community, supporting workers and local businesses. Academic capitalism forms the hill upon which the

organization stands and the basis of its operational motivations, bolstering its power over the workers (Slaughter & Leslie, 1997). Academic capitalism plays a central role in distributing power, reflecting changes in the market (Slaughter & Leslie, 1997). Academic capitalism enables an unequal power distribution, which supports organizations' economic privilege within this conceptual framework during financial straits.

Academic capitalism grants preferential authority to organizations to make budgetary decisions in response to constriction, a manifestation of their position at the top of the hill in Figure 3.1. Exposed to the open market, organizations operate in ways that prioritize their financial interest with the interest of their community and the greater social good as an afterthought (Pfeffer & Salancik, 2003; Slaughter & Leslie, 1997). With power imbalance, HEIs have the first opportunity to restrict the flow of resources, and can make decisions that protect their interest, often at the expense of their workers. Meanwhile, moral credentials and the theory of racialized organizations shape the interpersonal power dynamics within the organization (Monin & Miller, 2001; Ray, 2019). Institutions, emboldened and protected by their credentials as morally righteous organizations, enable the same racialized operational practices that animate their corporate peers (Monin & Miller, 2001). Ray (2019) emphasized the inseparable nature of race and organizational operations, "Ultimately, racial inequity is not merely 'in' organizations but 'of' them, as racial processes are foundational to organizational formation and continuity" (p. 48). HEIs proclaim their good intent from upon the hill in Figure 3.1, only to mimic corporate practices in times of trouble.

Figure 3.1 depicts a dam in the stream, which organizations can use to slow the stream of resources and protect themselves when a financial crisis approaches. Resource dependency theory and wage dependency sit on either side of the dam, reflecting the tension in resource

distribution, with organizations dependent upon resources for continued survival. Organizations protect resources when they sense scarcity, damming up the stream and decreasing resources available for workers, who depend on the steady downstream flow of resources for survival. With the ability to protect their own resources or dam up the stream, HEIs operate guided by the organizational theory of RDT. When a sudden financial upset impacts an entire industry, more significant than the usual ebb and flow of resources, academic capitalism and the operational principles of RDT dictate that organizations will seek new routes to resources and decrease expenses to avoid financial ruin (Pfeffer & Salancik, 2003; Slaughter & Leslie, 1997). RDT illuminates the external financial pressures institutions face and how they respond.

A broader economic crisis could make new resources exceptionally scarce, putting more pressure on organizations to decrease expenses rather than immediately seeking external resources (Pfeffer & Salancik, 2003). Trimming expenses is an area where HEIs can exercise quicker control to correct a financial imbalance in revenue and expenses (Pfeffer & Salancik). For HEIs, where employee salary and benefits often comprise over 60% of institutional budgets, personnel expenses are an extensive budget line where leadership might seek quick reductions in spending (Weisbrod et al., 2010). HEI leaders may trim expenses in this budget line with furloughs, layoffs, incentivized retirements, or other labor-reduction strategies (Weisbrod et al.). Cutting personnel expenses passes the crunch of a financial crisis and resource scarcity from organizations to individual workers and families, as outlined in Figure 3.1. In the following sections, I further detail the five theories married together in the conceptual framework presented in Figure 3.1.

Racialized Organizations

Ray's (2019) theory of racialized organizations provides a natural and necessary component of my conceptual framework to establish how organizations operate under the guise of objectivity to uphold racial hierarchies. Ray (2019) established the theory of racialized organizations as broadly applicable to many types of organizations and their relationship with individuals. I applied it directly to human resources practices at HEIs. Ray introduced the theory of racialized organizations by asserting that most organizational theory treats organizational structures and processes as race-neutral and thus ignores the critical role that organizations play in shaping racial schemes. Rather than considering race as a personal characteristic and racism as an individual mindset, Ray's theory of racialized organizations places prejudice and racial bias at an organizational level, capable of impacting organizational resource allocation and, thus, creating racialized outcomes. Racialized outcomes, visible in higher education layoffs during the pandemic, can be understood through Ray's framework and its four tenets.

Ray's Four Tenets of Radicalized Organizations

Ray (2019) posited four tenets that explain the process through which racialized organizations tether resources with racial super- and subordination. In the first tenet, racialized organizations are the arbiters of agency within them. HEIs limit agency for people of color and occupational "segregation or the incorporation into the lower tiers of organizational hierarchies diminishes one's ability to influence organizational procedures and the larger institutional environment" (p. 36). The first tenet establishes the racial hierarchies built into higher education staffing that enable the conditions born out in ensuing tenets.

In the second tenet, the normalization of occupational segregation legitimizes its many implications, including lower pay, reduced access to healthcare, limited workplace flexibility, and minimal influence in organizational decision-making (Ray, 2019). In the third tenet, Ray

wrote Whiteness is a credential that provides access to opportunity, hierarchical legitimacy, and for white or white-passing individuals. While credentialing is largely understood as an objective, bureaucratic process, Ray (2019) suggested race is similarly constructed through bureaucratic and legal processes and is malleable to organizational whims.

Finally, in the fourth tenet, Ray (2019) proposed that organizations often decouple diversity, equity, and inclusion (DEI) goals and priorities from the supposedly objective bureaucratic processes that perpetuate racial discrimination. Ray argued that racialized decoupling enables organizations to deny responsibility for inequitable racial outcomes. Organizations may separate policies that support DEI goals from day-to-day practices, with few enforcement or accountability measures (Ray).

Ray's four tenets unite to shape inequitable racial outcomes within organizations while protecting organizations' leaders and reputations from allegations of racism or discrimination. For example, when HEI layoffs disproportionately impacted staff of color, HEIs were able to defer to bureaucratic processes without critically addressing racial disparities in layoffs. The theory of racialized organizations suggests HEIs can launder their operational practices through a filter of bureaucratic objectivity that enables them to present operational outcomes, such as hiring and layoffs, as racially neutral, regardless of the empirical evidence.

Moral Credentials

With Ray's (2019) theory of racialized organizations challenging the objectivity of organizational operations, Monin and Miller's (2001) theory of moral credentials further debunks the notion of race-neutral organizations. Monin and Miller's theory of moral credentials, based on studies of individual bias, can be applied to organizations and those who lead them to understand the ways in which individuals, and thus organizations, create outcomes that directly

contradict their stated values. Monin and Miller conducted three studies to test the theory that individuals are more likely to exhibit prejudiced behavior when past credentials have established them as nonprejudiced. Researchers cited many individuals' deep anxiety about being perceived as prejudiced, which might motivate them to publicly express nonprejudiced views (Monin & Miller). Researchers found that deeply embedded moral credentials embolden individuals to avoid the prejudice mitigation steps they might take if they were concerned about being perceived as prejudiced (Monin & Miller).

Monin and Miller (2001) also found that moral credentials make individuals appear less prejudiced to others and affirm individuals' confidence in their nonprejudiced behavior and judgment. In more familiar terms, Monin and Miller summarized the impact of moral credentials on decision-making, saying, "Decision makers seem disposed to treat what is at most a molehill's worth of goodwill as though it demonstrates a mountain's worth of virtue" (p. 40). While organizational theory describes the behavior of organizations, including HEIs, individuals lead all organizations and ultimately guide their trajectory. For this reason, I applied the theory of moral credentials to consider individuals' decision-making at the helm of HEIs within the context of organizational theory. Through moral credentialing, HEIs can proclaim DEI values that further obscure racialized schemes guiding their operations.

To apply the theory of moral credentials to HEIs, I sought examples of organizational mission statements to review to reflect an HEI's moral credentials. Erie Community College (SUNY Erie), a part of the SUNY system, published the following mission statement: "SUNY Erie meets the needs of a diverse student body and contributes to regional economic vitality by providing high-quality, flexible, affordable, and accessible educational programs committed to student success" (SUNY Erie, 2021, n.p.). One of SUNY Erie's stated core values is "Diversity

and Belonging," which states, "We believe diversity is the foundation of who SUNY Erie is; it is who we are and who we serve. The college is committed to developing a sense of belonging that embraces the various life experiences of all members of SUNY Erie Community College" (SUNY Erie, 2021). Despite these aspirational statements, SUNY Erie laid off 90 employees in the summer of 2022 after a consulting agency advised the institution on steps to streamline operations (Joly, 2022). Joly noted SUNY Erie charged President Dr. David Balkin with making final decisions around layoffs. After considering institutional needs and outside input, the value judgment and prioritization required for layoffs lay primarily with one individual, who brought their prejudices and opinions to their decision-making process. President Balkin operated as a representative of the moral credentials espoused by SUNY Erie. President Balkin brought his moral credentials to any decision-making, making the human influence on layoffs inevitable.

Academic Capitalism

Academic capitalism is a broad means of understanding organizational action, designed explicitly to describe public research institutions' "neoliberal tendencies to treat higher education policy as a subset of economic policy" (Slaughter & Leslie, 2001, p. 154). Slaughter and Leslie described the evolution of capitalist principles and their pervasive spread into academia. Much like other professional occupations, the higher education labor market was relatively insulated from shifts in the market (Slaughter & Leslie). Faculty positioned themselves as "guided by the ideals of service and altruism…not seek[ing] to maximize profits; [professionals] claimed to put the interests of clients and community first" (Slaughter & Leslie, p. 4). Institutions were primarily guided by student and community needs, focused on teaching and research, and operated outside volatile market shifts (Slaughter & Leslie). Slaughter and Leslie detailed economic change in the late twentieth century, fueled by globalization, international competition,

and industry demands, wherein higher education began to operate more akin to for-profit businesses.

Beginning after World War II and accelerating through the 1980s, higher education business models evolved. Somers et al. (2018) specifically noted the role of the Reagan Administration's neoliberal policies in the 1980s, favoring large organizations and wealthy individuals, as advancing the pursuit of revenue-generating activities in higher education. Neoliberal policies simultaneously accelerated the power shift to organizations, widening the power imbalance between organizations and workers and mimicking post-industrial labor arrangements (Slaughter & Leslie, 1997). Faculty's work product was commodified as faculty employment arrangements were destabilized, tenured roles decreased, and more staff were hired to support student needs, business operations, and revenue-generating activities (Somers et al., 2018). Since the 1990s, enrollment in higher education has increased overall, and staff and faculty numbers have increased to support institutional needs (Desrochers & Kirshstein, 2014). Despite ebbs and flows across economic downturns, staff and faculty numbers remain higher than 30 years ago (Desrochers & Kirshstein). Changes in staffing patterns in higher education accelerated the changing nature of academic labor and exposed this sector to outside market pressures (Slaughter & Leslie).

Resource Dependency Theory

While academic capitalism serves as the hill upon which the power of HEIs rests, RDT explains organizations' actions from this position, with the ability to manage the flow of resources downstream Figure 3.1. RDT also offers the benefit of being more adaptable in considering a wide range of institution types — public and private — not fully accounted for in academic capitalism (Pfeffer & Salancik, 2003; Slaughter & Leslie, 1997). RDT purported

organizations must maintain revenue and resources, explaining how HEIs may adapt to external demands to accomplish this goal (Tolbert, 1985). While academic capitalism specifically described the actions of public colleges and universities, RDT explained how all institutions adapt to function in market-responsive ways. Tolbert (1985) applied resource dependency alongside the theory of institutionalization to examine how these forces influenced administrative structural differentiation in higher education. Tolbert suggested RDT and institutionalization explain how different organizations might react similarly to financial challenges.

As demonstrated in Figure 3.1, academic capitalism defers power and advantage to organizations in how they first respond to economic crises. Organizations then operate through the framework of RDT to respond to and distribute the financial burden of an economic crisis. All organizations operate within RDT's framework but may react differently depending on their unique financial situation and priorities. While most HEIs respond similarly to shore up financial losses, the degree to which they restrict resources and pass the financial burden on to their workers, as illustrated in Figure 3.1, may vary depending on the nuances of their financial situation and institutional priorities.

RDT suggested that the actions of organizational members can be understood mainly in the context of external pressures (Pfeffer & Salancik, 2003). While this is a helpful consideration in understanding organizational behavior, RDT does not account for the differences and human biases in organizational behavior. Pfeffer and Salancik acknowledge critiques of RDT, specifically that RDT does not account for all influences on organizational behavior and its lack of attention to social class. Individual beings are never entirely rational, and their biases drive decision-making even in more quantitative, business-minded operations. In my personal

experience, when my employer conducted layoffs during the COVID-19 pandemic, value judgments and decisions around personnel were undoubtedly subjective. Layoffs reflected relationships, institutional history, and the perceptions of those in leadership. Many with longer tenures at the institution, and thus larger paychecks, remained employed, while newer staff with less institutional history and weaker personal relationships were severely affected. Using RDT as a lens, with the caveat that it is incomplete in considering individual biases and the possibility of irrational decision-making, remains a helpful guide to understanding how organizations operate within the powerful position they hold in this conceptual framework. Institutional leaders are given the upper hand in decision-making and can thus pass on financial burdens as it suits them.

Wage Dependency

It is reasonable to think that organizations would protect their financial stability and interests, as proposed by RDT (Pfeffer & Salancik, 2003). What complicates this behavior is the power institutions hold over the livelihood of those they employ, and the disregard practiced toward their staff. Wage dependency is a phenomenon that occurs when much of the population has no other economic opportunity but to rely on an employer for wages, thus handing economic power to organizations (Perrow, 1991). Figure 3.1 reflects the power organizations held at the top of the hill, controlling the dam, enabled by academic capitalism, and the tension created in this framework by wage dependency.

Before industrialization in the United States, many individuals lived in self-sustaining family units or small communities (Lockhart, 1989). When factories emerged and required abundant, cheap, and disposable labor, the arrangement of hourly employment spread quickly, developing urban areas to support these labor demands (Perrow, 1991). Lockhart summarized this dramatic shift from economic self-reliance to economic dependence, noting that “an intrinsic

characteristic of advanced industrial societies is that families are no longer independent economic units" (p. 15). The social shift to permanent wage dependency cut alternative options for financial security. It cemented individual and community reliance on large employers for stability and built unstable power dynamics between organizations and workers (Perrow, 1991). The shift to wage dependency enabled the power dynamic presented in Figure 3.1, which places workers downstream of organizations with few income alternatives in the event of financial instability.

The growth of wage dependency in the past two centuries also led to larger, more powerful, and impersonal organizations (Perrow, 1991). Subsequently, the nature of labor relations became more transactional and less relational, making layoffs more commonly implemented as a business strategy (Perrow). Workers face greater resource insecurity when organizations cut spending or downsize to protect their resources during economic downturns, as they always exist downhill from organizational power, as reflected in Figure 3.1 (Perrow). Wage dependency provides limited power and autonomy for workers and minimizes employers' obligations to their employees (Perrow). For organizations, wage dependency reduced "reciprocal obligations" from employer to employee, creating a transactional approach to labor and skewing power dynamics to favor employers and their business interests (Perrow, p. 732). Wage dependency created the conditions for wage vulnerability, wherein conditions that could terminate employment, and thus worker revenue, lay outside the employee's control (Lockhart, 1989). Wage vulnerability places workers at the whims of their employers and the broader market downhill in receiving resources (Lockhart).

Wage dependency covers much ground to establish the framework of worker and employer relationships and power dynamics. There are two areas, however, where it could better

address the nuances of employer and employee relationships. First, it must address social identity beyond class in history and current reality of wage dependency. In their historical review, both Perrow (1991) and Lockhart (1989) describe the individual shift from labor independence to dependence. However, neither researcher noted this narrative excluded enslaved populations, indentured servants, or other non-landholding and non-white people. Ray (2019) addressed Perrow and asserted this work overlooked the role of slavery as an organization that developed exploitative labor practices later adapted for factories.

The implication that all individuals and families were self-sufficient before the Industrial Revolution speaks to the experiences of white, land-owning families in the US. Millions of individuals at the time were in forced labor arrangements in which they worked for free and lived on the rations provided to them by their enslavers (Wilder, 2013). For many, their livelihood shifted from the forced work arrangement of slavery to the wage dependence of industrialization. Wage dependence also fails to acknowledge the disproportionate impact that financial insecurity has on women, people of color, and children in the US. Lockhart (1989) referred to the weakening of family communities and how this often leaves women with weaker support systems in providing for children. However, little is written about the nuances of this phenomenon across racial groups and the enduring impact this has on economic prospects.

Second, as the name implies, wage dependency speaks to employees' dependence on organizations for monetary wages. It does not delve into other forms of resource dependence, most notably organizations' role as gatekeepers to private health insurance. While wages are a critical aspect of the employer/employee relationship, robust benefits options, including health insurance and access to tuition remission, paid time off, and other benefits, are also a consideration for employees in their labor arrangements (Magolda, 2016). Magolda noted that

many janitorial staff on college campuses recognized robust health insurance and tuition remission benefits in higher education and valued these benefits over slightly higher wages. Some employees noted selecting lower-wage jobs in exchange for more appealing benefits, prioritizing access to these benefits over the extra wage they might make in another position (Magolda, 2016). Employee reliance on organizations goes beyond just wages. It extends to other essential benefits their employment offers, making job insecurity especially precarious for workers and framing the urgency of my research.

Summary of the Conceptual Framework

Within my conceptual framework, theories of racialized organizations and academic capitalism set the groundwork for the power imbalance between HEIs and the workers they employ (Ray, 2019; Slaughter & Leslie, 1997). HEIs face the same economic demands as for-profit businesses, and though HEIs often lay off staff as a means of reducing expenses just as corporations do, HEIs operate under the pretense of serving the social good with a set of moral credentials that enable them to deny accusations of bias (Monin & Miller, 2001).

Figure 3.1 represents academic capitalism as the literal higher ground upon which HEIs stand (Slaughter & Leslie). Upon the hill, the theory of moral credentials builds a picturesque façade for campus buildings, while the theory of racialized organizations conveys more complex inner workings beyond that façade (Monin & Miller; Ray). With a firmly ingrained power imbalance between HEIs and workers, HEIs protect and seek revenue streams while taking steps to reduce expenses, as articulated by RDT (Pfeffer & Salancik, 2003). In Figure 3.1, the damn that sits across the river is controlled by HEIs, who control the flow of resources based on the framework of resource dependency theory (Pfeffer & Salancik). Finally, workers exist on the other end of the power imbalance with HEIs, downstream and on the other side of the dam.

Workers rely on wages for their day-to-day survival and work mainly at the mercy of HEIs, who can eliminate jobs, or close the damn in Figure 3.1, to suit their financial goals (Perrow, 1991). My conceptual framework scaffolds how I understand the actions and power wielded by HEIs and guides my methodological choices to answer my research questions.

Methods

My non-experimental, critical quantitative study identifies significant relationships between institutional characteristics and layoffs during the COVID-19 pandemic and financial uncertainty. After establishing whether a relationship exists between variables, the study identifies which institutional characteristics predict the occurrence of employee lay-offs between March 2020 and June 2023. To that end, my study answers the following questions:

1. What relationship exists between the identified institutional characteristics and the occurrence of employee layoffs between March 2020 and June 2023?
2. To what extent do institutional characteristics predict the occurrence of layoffs between March 2020 and June 2023?

The dependent variable in my study is the occurrence of layoffs for full-time faculty and staff between March 2020 and June 2023. The independent variables include basic institutional descriptors, enrollment and student demographics, financial characteristics, and employee demographics. Many financial characteristics are represented as per full-time equivalent (FTE) enrollment, consistent with the National Center for Education Statistics' (NCES) data publication practices in the Integrated Postsecondary Education Data System (IPEDS). FTE students were calculated for public institutions as the fall semester headcount of full-time students plus the addition of part-time enrollment multiplied by .403543 for four-year institutions, .335737 for two-year institutions, and .361702 for graduate enrollment (National Center for Education

Statistics [NCES], n.d.) The dependent variable of layoffs at institutions is measured as a binary categorical variable during the study period, March 2020 through June 2023. I examine layoffs in the context of enrollment and financial factors from 2019-20, 2020-21, and 2021-22. Data from these years could be examined for changes in enrollment and financial standing to test the relationship between these factors and the occurrence of layoffs at sample institutions. Further information about data collection and a complete list of variables is detailed in this chapter.

Sample

I selected five state higher education systems with large, centralized, diverse institution types for my sample. I included the California State University (CSU) system, the University System of Georgia (USG), the Kansas Board of Regents (KBR) system, the Minnesota State (MS) system, and the State University of New York (SUNY) system. The five systems bring together a sample of 173 institutions. I chose these state systems for their geographic diversity and the range of institutions they represent. Specifically, I am interested in sampling systems that include regional public institutions, minority-serving institutions (MSIs), community colleges, and technical colleges. I want to ensure the sample represents a wide range of public institutions, not simply large, elite institutions, and reflects different state and local funding models. Each system organizes institutions differently, with most having several categories of institution types, as outlined in Table 3.1 below.

Table 3.1

Institutions by Type and State System

Type of institution	CSU	USG	KBR	MS	SUNY	Total
Community and Technical College				25		25
Community College			19		30	49
Comprehensive College					13	13
Doctoral Institution/Other Doctoral					5	5
Doctoral Institution/Research Center					4	4
Municipal University			1			1
Regional Comprehensive University		4				4
Research University		4				4
State College		9				9
State University	23	9	6	7		45
Technical College			7		7	14
Total	**23**	**26**	**33**	**32**	**59**	**173**

Note. Total state institutions n=173

While the five systems included in this study comprised 173 institutions, not all could confirm layoff data. Through the data collection process, I confirmed the occurrence of layoffs, or the lack thereof, at 146 institutions for inclusion in my final sample. Table 3.2 outlines the number of institutions from each system included in my final sample. My process for confirming the occurrence of layoffs is further detailed in the data collection section of this chapter.

Table 3.2

Verified Layoff Data for Inclusion in Final Sample

State system	Freq.	Percent
CSU	20	13.7%
USG	22	15.07%
KBR	26	17.81%
MS	32	21.92%
SUNY	46	31.51%
Total	**146**	**100%**

Note. Sample size n=146

Only institutions with confirmed information about layoffs are included in the analysis to ensure the accuracy of the data used in this study, making the final sample size n=146. I included an overview of each system and a list of the institutions in the final sample to further illuminate the diversity of institutional types and student demographics within my sample.

California State University System

Located on the West Coast of the United States, California is home to the largest population in the United States, with over 39 million residents (United States Census Bureau [USBD], n.d.). The California State University (CSU) system is the most extensive four-year public university system in the United States, with 23 campuses, seven off-campus centers, and almost 460,000 students (The California State University [CSU], n.d.). I focused on the 23 traditional campus centers in the CSU system and did not include the seven off-campus centers. Of the 23 campuses, 20 provided verified data on layoffs for inclusion in the sample. CSU operates a centralized university system with a 25-member Board of Trustees, a Chancellor who oversees all 23 campuses, and unique institutional Presidents on each campus (CSU). Unlike other state systems in the sample, CSU did not have specific categories of institutions, though

institutions vary and offer a range of academic programs. In Table 3.3, all institutions in the CSU system, without including categories, are listed.

I selected the CSU system as part of my sample because of its size, diversity, and prominence in California. CSU awards almost half of the bachelor's degrees awarded in California (CSU, n.d.). In addition to the sheer number of students it enrolls, it enrolls an exceptionally diverse student body, with 47% of undergraduate students identifying as Hispanic or Latinx and almost half of undergraduates receiving Pell Grants (CSU, n.d.). I selected the CSU system as opposed to other systems in California because of its higher student acceptance rates and lower tuition, making it a more accessible choice for many Californians and a better proxy for institutions in a typical financial situation (CSU, n.d.). I selected the CSU system over the University of California system, which includes more exclusive institutions like the University of California, Los Angeles and the University of California, Berkeley (CSU, n.d.). I also chose to include the CSU system rather than the California Community Colleges system (CCCS), which includes 116 community colleges in the state. While I sought to include community colleges in this study, the size of the CCCS would have significantly grown my overall sample size. I included other state systems that included community colleges, so I chose to rely on those and instead focus on the CSU system within California. CSU institutions that were able to verify layoff data for inclusion in my final sample are listed in Table 3.3 below.

Table 3.3

CSU Institutions Included in Sample

Category	Institution Name	*n*
State Universities	CSU Bakersfield	20
	CSU Channel Islands	
	CSU Chico	
	CSU Dominguez Hills	
	CSU East Bay	
	CSU Fresno	
	CSU Fullerton	
	Cal Poly State University Humboldt	
	CSU Long Beach	
	CSU Maritime Academy	
	CSU Monterey Bay	
	CSU Northridge	
	Cal Poly State University Pomona	
	CSU Sacramento	
	CSU San Bernardino	
	San Diego State University	
	San Francisco State University	
	San Jose State University	
	CSU San Marcos	
	Sonoma State University	

Note. California sample size n=20

The list above in Table 3.3 includes both CSU Maritime and Cal Poly State University Humboldt (Cal Poly). In November 2024, the President of the Cal Poly announced that CSU Maritime Academy would be integrated with Cal Poly to strengthen their financial future by combining resources (Armstrong, 2024). Data for my study was collected during the fall of 2024, after the integration was announced. However, the data included in my sample predate the institutional integration. Thus, CSU Maritime and Cal Poly are treated as separate entities in my work.

University System of Georgia

Located in the southeast United States, Georgia's population falls in the middle of the five states included in this study, with 10.9 million residents (USBD, n.d.). Georgia had, by far, the largest Black or African American population in the states included in the sample, with 33.1% of Georgia residents identifying as Black or African American (USBD). In selecting states and systems to include, I intentionally sought geographic diversity that would lend itself to racial and ethnic diversity within the state's population and the system's enrollment. A 19-member Board of Regents governs the USG system, and each institution operates under the leadership of a unique president (USG, 2023). The USG system included 26 institutions across the state, which the system categorizes as research universities, comprehensive universities, state universities, and state colleges (University System of Georgia [USG], 2023). These 26 institutions, including George's public flagship institution, enrolled 340,638 students in the fall of 2021(USG, 2023). I included 22 of the 26 institutions with verified layoff data in my final sample.

The USG system includes institutions that grant associate degrees as part of their academic offerings and three Historically Black Colleges and Universities (HBCUs) (USG, 2023). Georgia operates a separate community college system outside the USG system, the Technical College System of Georgia, which was not included in this sample (McGuinness, 2014). The USG system includes two institutions listed in the US News 2021 Top 20 Public National Universities, including Georgia Tech and the University of Georgia (USG, 2023). Georgia's diversity of institution types, in conjunction with the population diversity within Georgia, contributes significantly to this study's overall sample diversity. The 22 institutions in the USG system with verified layoff data are listed and categorized by institution type in Table 3.4 below.

Table 3.4

USG Institutions Included in Sample

Category	Institution Name	*n*
Research University	Georgia Institute of Technology	2
	Georgia State University	
Regional Comprehensive University	Kennesaw State University	4
	Georgia Southern University	
	University of West Georgia	
	Valdosta State University	
State University	Albany State University	9
	Clayton State University	
	Columbus State University	
	Fort Valley State University	
	Georgia College & State University	
	Georgia Southwestern State University	
	Middle Georgia State University	
	Savannah State University	
	University of North Georgia	
State College	Abraham Baldwin Agricultural College	7
	College of Coastal Georgia	
	Dalton State College	
	East Georgia State College	
	Georgia Gwinnett College	
	Georgia Highlands College	
	South Georgia State College	

Note. Georgia sample size *n*=22

Kansas Board of Regents System

Kansas is a largely rural state in the southern Midwest United States. Kansas has the smallest population of any state sampled in this study, with 2.9 million residents (USBD, n.d.). Within the sample, Kansas had the highest percentage of individuals identifying as white at 85.9%, with the lowest median household income at $64,521 (USBD, n.d.). It was, by far, the least populous per square mile at 35.9 individuals per square mile (USBD, n.d.). Kansas's

characteristics make it an excellent addition to the sample, balancing more urban states like California and New York.

Additionally, I chose the 33 institutions governed by the Kansas Board of Regents because of its higher education system's diverse and centralized nature. The nine-member Kansas Board of Regents "governs the state universities, supervises the community colleges, technical colleges, and Washburn University, and coordinates all postsecondary education in Kansas" (Kansas Board of Regents, n.d.). The centralized nature of the Kansas Board of Regents system, including community and technical colleges, allows for a diverse sample of institutions and allows me to include a broad range of community and technical colleges. The Kansas Board of Regents does not govern community colleges but coordinates their operations in conjunction with local governance (McGuinness, 2014). Kansas's operational model was like the SUNY system of centralized oversight, which made both systems appealing to include in the sample. The 26 Kansas Board of Regents system institutions with verified layoff data for inclusion in my sample are categorized and listed in Table 3.5 below.

Table 3.5

Kansas Board of Regents Institutions Included in Sample

Category	Institution Name	*n*
State Universities	Emporia State University	6
	Fort Hays State University	
	Kansas State University	
	Pittsburg State University	
	University of Kansas	
	Wichita State University	
Community Colleges	Allen Community College	16
	Barton Community College	
	Butler Community College	
	Cloud County Community College	
	Coffeyville Community College	
	Colby Community College	
	Cowley Community College	
	Dodge City Community College	
	Fort Scott Community College	
	Garden City Community College	
	Highland Community College	
	Johnson County Community College	
	Kansas City Kansas Community College	
	Neosho Community College	
	Pratt Community College	
	Seward Community College	
Technical Colleges	Flint Hills Technical College	3
	Manhattan Area Technical College	
	North Central Kansas Technical College	
Municipal University	Washburn University	1

Note. Kansas sample size *n*=26

It was announced in June 2024 that three institutions in Kansas would create an affiliation to build a stronger resource base for the three schools (Fort Hayes State University, n.d). Fort Hays State University, North Central Kansas Technical College, and Northwest Kansas Technical College would bring together resources and the two presidents of the technical colleges would report to the President of Fort Hayes State University, but institutions would each maintain their

own Federal ID, which made this situation different from the merge occurring between Caly Poly and CSU Maritime (Fort Hayes State University, n.d). This affiliation was notable in its timing and relevance to my study's inquiry into the financial health of institutions, but data collected predated the affiliation and did not impact those data, and institutions remained separate in my study.

Minnesota State System

In the northern Midwest, Minnesota was the fourth most populous state in the sample, ahead of only Kansas, with 5.7 million residents (USCB, n.d.). Minnesota was less racially diverse than all states but Kansas, with 82.6% of residents identifying as white (USCB). While Minnesota does not bring significant racial or ethnic diversity to the sample, it brought a unique educational and socioeconomic diversity. Minnesota had the lowest poverty rate of the entire sample, with 9.6% of residents living in poverty, and had the highest percentage of owner-occupied homes at 72.3%, well above the national average of 64.6% (USCB). Minnesota also had the highest percentage of the population over age 25 that held a high school diploma (93.2%), and the highest percentage of civilians over 16 years old in the labor force (69.1%) (USCB, n.d.). These statistics made Minnesota a critical addition to the sample and influenced the student population in attendance in the state's higher education system, as 63% of Minnesota resident students pursuing a degree attended a Minnesota State institution (Minnesota State)

Minnesota State, formerly Minnesota State Colleges and Universities, includes seven four-year universities and 32 state community and technical colleges with 300,000 students (Minnesota State). Unlike other states, the Minnesota System was not governed by a Board of Regents but instead had a central Chancellor and a 15-member volunteer Board of Trustees appointed by the governor (Minnesota State, n.d.). The Minnesota State system was unique in

this sample for the number of community and technical colleges, including many with multiple regional campuses. The system also included the state's flagship institution, Minnesota State University, Mankato (Minnesota State).

For my study, I omitted data from six community colleges in the Minnesota State system that merged in May 2022. Hibbing Community College, Itasca Community College, Mesabi Range College (with two separate campuses in Eveleth and Virginia, Minnesota), Rainy River Community College, and Vermilion Community College merged under the name Minnesota North College, operating six unique but united campuses (Whitford, 2022). When evaluating initial data for these six campuses, it was clear that the data from these institutions would not accurately reflect their individual situations during the years sampled. For example, Minnesota North College - Itasca, Grand Rapids (formerly Itasca Community College), reported an FYE undergraduate enrollment of 821 in 2019-20, 740 in 2020-21, and zero in 2021-22 when the merger took place. Meanwhile, Minnesota North College - Hibbing, the institution that Minnesota North College data merged within the IPEDS data system, reported an FYE undergraduate enrollment of 806 in 2019-20, 693 in 2020-21, 2,635 in 2021-22 when the merger took place, and all enrollment data centralized in one single report. Including data from these six institutions risked creating misleading conclusions; thus, I omitted these six institutions from my sample.

It was notable that the merging of these institutions was underway prior to the COVID-19 pandemic, which was announced publicly in February 2020. Minnesota North College President Michael Raich explained that enrollment declines from 2011-2020 and continued demographic changes in the region informed the decision to streamline operations, a task undertaken during

the pandemic but not initiated by it. The Minnesota State system was able to verify layoff data for all institutions included in my sample, reflected in Table 3.6 below.

Table 3.6

Minnesota State Institutions Included in Sample

Category	Institution Name	*n*
State Universities	Bemidji State University	7
	Metropolitan State University	
	Minnesota State University, Mankato	
	Minnesota State University Moorhead	
	Southwest Minnesota State University	
	St. Cloud State University	
	Winona State University	
Community and Technical Colleges	Alexandria Technical and Community College	25
	Anoka Technical College	
	Anoka-Ramsey Community College - Cambridge	
	Central Lakes College - Brainerd	
	Century College - White Bear Lakes	
	Dakota County Technical College - Rosemount	
	Fond du Lac Tribal and Community College - Cloquet	
	Hennepin Technical College - Brooklyn Park	
	Inver Hills Community College - Inver Grove Heights	
	Lake Superior College - Duluth	
	Minnesota State Community and Technical College - Fergus Falls	
	Minnesota State College Southeast - Winona	
	Minneapolis Community and Technical College	
	Minnesota West Community and Technical College - Granite Falls	
	Normandale Community College - Bloomington	
	North Hennepin Community College - Brooklyn Park	
	Northland Community & Technical College - Thief River Falls	
	Northwest Technical College - Bemidji	
	Pine Technical and Community College - Pine City	
	Ridgewater College - Willmar	
	Riverland Community College - Austin	
	Rochester Community and Technical College	
	St. Cloud Technical Community College	
	Saint Paul College	
	South Central College - North Mankato	

Note. Minnesota sample size n=32

State University of New York System

New York, in the northeast United States, was the second most populous state included in this sample, with 19.6 million residents (USCB, n.d.). New York had a diverse population, with racial demographics most closely mirroring national averages amongst the states sampled in this work (USCB). New York included both the largest city in the United States and a substantial rural region. SUNY institutions serve many areas of New York state, catering to the demands of large urban areas and remote, rural counties. New York also had the highest poverty level of the states sampled, with 14.3% of people living below the poverty line (USCB). These demographics are relevant for understanding the SUNY system as it served a large portion of the college-going population in the state, with one of every three New York high school students choosing a SUNY school (State University of New York [SUNY], n.d.).

As a public system in a large, diverse state, the SUNY system represented the most extensive comprehensive university system in the United States (SUNY, n.d.). The SUNY system includes "64 schools, a mix of 29 state-operated campuses and five statutory colleges—including research universities, liberal arts colleges, specialized and technical colleges, health science centers, land-grant colleges—and 30 community colleges" which educate 400,000 students annually (SUNY). SUNY divided its 64 campuses into four primary groups: doctoral institutions, comprehensive colleges, technical colleges, and community colleges (SUNY). It had two subgroups within doctoral institutions, including research centers and other doctoral institutions (SUNY).

While the SUNY system cites 64 campuses, the four statutory colleges it shared with Cornell University are included in Cornell University's IPEDS data. Similarly, the New York State College of Ceramics is included as part of Alfred University, a private institution. I

excluded these institutions from my sample so as not to include private HEIs that might have skewed results. Table 3.7 outlines the 46 institutions from the SUNY system included in the final sample with verified layoff data.

Table 3.7

SUNY Institutions Included in Sample

Category	Institution Name	*n*
Doctoral Institution/Research Center	University at Albany	3
	University at Buffalo	
	Stony Brook University	
Doctoral Institution/Other Doctoral	Downstate Medical Center	4
	Environmental Science and Forestry	
	College of Optometry	
	SUNY Polytechnic Institute	
Comprehensive College	SUNY Brockport	12
	Buffalo State University	
	SUNY Cortland	
	SUNY Fredonia	
	SUNY Geneseo	
	SUNY New Paltz	
	The College at Old Westbury	
	SUNY Oneonta	
	SUNY Oswego	
	SUNY Plattsburgh	
	SUNY Potsdam	
	Purchase College	
Technical College	Alfred State College	4
	SUNY Cobleskill	
	Maritime College	
	Morrisville State College	
Community College	Adirondack Community College	23
	Broome Community College	
	Columbia-Greene Community College	
	Corning Community College	
	Erie Community College	
	Fashion Institute of Technology	
	Fulton-Montgomery Community College	
	Herkimer County Community College	
	Hudson Valley Community College	
	Jamestown Community College	
	Jefferson Community College	
	Mohawk Valley Community College	
	Monroe Community College	
	Niagara County Community College	
	North Country Community College	
	Onondaga Community College	
	Orange County Community College	
	Rockland Community College	
	Schenectady County Community College	
	Suffolk County Community College	
	Sullivan County Community College	
	Tompkins Cortland Community College	
	Westchester Community College	

Note. New York sample size n=46

Variables

With my sample identified, I defined independent and dependent variables to collect for statistical analysis. Guided by my literature review in Chapter Two and my conceptual framework in Chapter Three, I sought variables that aligned with the three categories in which I presented my literature findings, including enrollment, financial, and personnel data for the institutions in my sample. My literature review findings suggest the critical role that student enrollment fluctuations and challenges can have on the financial health of HEIs (Barr & Turner, 2013; Desrochers & Kirshstein, 2014; June, 2023; Nietzel, 2022; Pew, 2019; Sforza, 2023). Similarly, financial characteristics at HEIs, including operational expenses and revenue generation, create pre-existing conditions that can impact HEI survival during financial crises (SHEEO, 2021). Finally, HEI staffing was a theme in my literature review that presented challenges and opportunities during financial crises. HEI personnel contribute to a large portion of institutional budgets but are also prime targets for budget cuts when institutions choose to reduce expenses (Desrochers & Kirshstein, 2014; Weisbrod et al., 2010). Considering these three categories, I reviewed available IPEDS and Department of Education datasets to select independent variables for analysis.

My initial collection included 253 independent variables, listed in Appendix A. Data collection is further described and broken down by the three categories in the ensuing sections. After reviewing the initial 253 independent variables, I streamlined this list for efficient statistical analysis. The independent variables listed in Table 3.8 were selected after the logistic regressions were conducted in Stata with an ensuing test for multicollinearity within the variables (Acock, 2018). Testing for multicollinearity was an iterative process. I removed variables that offered redundant information or presented information closely connected with

other variables. For example, my initial variable list included the percentage of in-state and out-of-state students at an institution. Because these categories are mutually exclusive, I only included the variable reflecting out-of-state students. I removed variables and conducted logistic regressions until I was satisfied with the variety of variables, and the VIF for all variables was reduced to <10. The final independent variables in my analysis are listed in Table 3.8 below and denoted with a star (*) in Appendix A.

Table 3.8

Independent Variable List

Category	Variable
Enrollment Variables 2019-20, 2020-21, 2021-22	Total FTE enrollment
	Percentage of students in fall cohort who are paying in-district tuition rates
	Percentage of students in fall cohort who are paying out-of-state tuition rates
	Percentage of students in fall cohort whose residence/ tuition rate is unknown
	Percent of undergraduate students awarded Pell grants
Financial Variables 2019-20, 2020-21, 2021-22	Endowment per FTE enrolled student
	Sales and services of auxiliary enterprises
	Federal appropriations
	State appropriations
	Local appropriations education district taxes and similar support
	Gifts including contributions from affiliated organizations
	Investment income
	Are intercollegiate athletic revenues included with sales and services of educational activities
	Are intercollegiate athletic revenues included with sales and services of auxiliary enterprises
	Are intercollegiate athletic revenues included with a source other than educational activities or auxiliary enterprises
CARES Funding	Total federal emergency funding
	Total emergency funding/FTE enrollment 1920

Table 3.8 above notably does not include any variables in the personnel category, which includes numbers and demographic breakdowns of faculty and staff, listed in Appendix A. I do

not include faculty and staff variables as a part of my independent variables in Table 3.8 because of frequent issues with multicollinearity. In my logistic regressions, I could not keep the VIF of personnel variables <10; thus, they were excluded from my models.

The dependent variable in my study is a binary, categorical variable that indicates whether HEIs conducted layoffs from March 2020 through June 2023. The data collection process for independent and dependent variables is detailed in the following sections. Within the data collection overview, I also present descriptive statistics for the independent variables in Table 3.8, for personnel data that was not included in the independent variables, and for the dependent variable.

Data Collection

Data was collected to create a complete picture of institutions' enrollment, financial health, and staffing patterns. Enrollment, financial, and employment data were collected from IPEDS for all institutions and compiled into one document for analysis in Stata. Additionally, data were collected from the U.S. Department of Education to include institutional allocations from three rounds of emergency relief funding awarded during the pandemic, referred to colloquially as CARES, HEERF II, and HEERF III funding. To track staffing changes, I included IPEDS data on faculty and staff numbers during the study's timeframe. Though IPEDS does not track layoffs, fluctuations in faculty and staff numbers during the pandemic provide relevant context for institutional changes occurring during the pandemic. For a more accurate collection of layoff data, data regarding layoffs were collected manually in a multipart process for each institution, which included a thorough database search for layoff information and outreach to human resource and public records officers.

After collecting and organizing variables, I had 288 variables that I collected from secondary sources and 19 variables that I generated from the 288 variables. Forty-seven independent variables were used consistently in statistical analysis, listed in Table 3.8. Variables in Table 3.8 provided a broad overview of independent variables, including enrollment and funding, and were selected to eliminate instances of multicollinearity in statistical tests. In the ensuing sections, I detail data collection and descriptive statistics for each subgroup of data, including enrollment and student demographics, financial characteristics, and staff and faculty demographics.

Enrollment and Student Demographics

The first data section includes information about institutional enrollment and student demographics. Enrollment is an essential factor because of its connection to tuition revenue and the general financial health of the institution (Weisbrod et al., 2010). For this study, I tracked enrollments across the years of the study, beginning with the 2019-20 academic year and going to the 2020-21 and 2021-22. With data available in IPEDS, I tracked overall enrollment for full-time equivalent students, including undergraduate and graduate students. I looked at various student demographic groups whose enrollment could impact the overall financial health of the institution. Groups included students who often pay differing tuition rates, including undergraduate versus graduate students and in-state versus out-of-state students. I also included students receiving Pell Grants as a part of their financial aid package in the data to indicate student financial need. Oliveros (2023) noted that students receiving Pell Grants often still struggle to afford college, and their higher financial need may put institutions in the position of trying to support students in attendance.

Before the onset of the pandemic, enrollment rose overall across higher education institutions (Desrochers & Kirshstein, 2014). Enrollment trends changed after the pandemic, with Nietzel (2022) noting that enrollment was down overall from the fall of 2019 by 7.5% in the fall of 2022. The sudden reversal of enrollment trends suggested the enrollment impact of the pandemic might be long-term, and institutions might take years to adapt operations to smaller student populations. Looking across three years allows for a more complete picture of the impact of the COVID-19 pandemic on enrollment. To provide an overview of three years of enrollment data, I compiled FTE enrollment for undergraduates, graduates, and doctor of professional practice. I combined them into one variable per academic year for each institution in the sample. Table 3.9 presents the mean, standard deviation, minimum, and maximum enrollments, skew, and kurtosis for each of the three years studied.

Table 3.9

Total FTE Student Enrollment

Variable	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
2019-20	7559.97	8704.09	410	35273	1.87	5.52
2020-21	7428.03	8953.43	403	35814	1.94	5.80
2021-22	7095.38	8833.90	403	36920	2.02	6.12

The descriptive statistics in Table 3.9 show mean enrollment from 2019-20 through 2022-22 dropped by 6.1%. The overall decrease in enrollment was not evenly dispersed across institutions, with high skew and kurtosis indicating large numbers of outliers in the data. I compiled FTE enrollment in Table 3.9 to understand overall enrollment trends, and then isolated several specific enrollment variables, including the residency statuses of in-district, out-of-state, and unknown, and the percentage of students receiving Pell Grants, to better understand enrollment fluctuations of students paying disparate tuition rates.

During the timeframe of my study, from March 2020 through June 2023, data on students paying different tuition rates were available for the 2019-20, 2020-21, and 2021-22 academic years. Table 3.10 shows descriptive statistics for the percentage of enrolled students with various residency statuses and the percentage of students receiving Pell Grants each year.

Table 3.10

Students reflecting various residency statuses and % receiving Pell Grants

Variable	Year	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
% in district	2019-20	6.986	21.192	0	100	3.302	12.85
	2020-21	7.322	21.12	0	100	3.2	12.329
	2021-22	7.29	21.251	0	100	3.227	12.45
% out of state	2019-20	8.34	11.45	0	48	1.83	5.64
	2020-21	7.59	11.15	0	59	2.17	7.59
	2021-22	7.99	11.41	0	50	1.94	6.14
% unknown	2019-20	2.637	7.316	0	52	3.911	20.7
	2020-21	2.562	6.704	0	43	3.443	16.12
	2021-22	2.61	7.232	0	46	3.832	19.521
% receiving Pell Grants	2019-20	35.91	12.84	0	75	.38	3.13
	2020-21	33.97	12.79	0	76	.49	3.24
	2021-22	33.34	12.79	0	73	.42	3.01

The enrollment trends in Table 3.10 preview the data available surrounding enrollment trends from the 2019-20 through 2021-22 and are consistent with enrollment trends in the reviewed literature. Table 3.11 reflects an overall decrease in the mean percent of enrolled out-of-state students from 2019-20 through 2021-22, though the mean decreased most from 2019-20 to 2020-21, rebounding slightly but not reaching pre-COVID levels in 2021-22. The percentage of students receiving Pell Grants decreased during the same time frame, from a mean of 35.91% of enrolled students receiving Pell Grants in 2019-20 to a mean of 33.34% of enrolled students receiving Pell Grants in 2021-22.

Financial Characteristics

The second group of variables considered in this study was institutional financial characteristics. Financial data included endowment information from system and institutional data sources, and financial indicators from IPEDS. IPEDS includes data on sources of core revenues per FTE, including tuition and fees as well as public and private funding. I sampled financial data for the academic years 2019-20, 2020-21, and 2021-22 to understand the financial characteristics of each institution and how they may have changed throughout the pandemic. The only financial data for the 2022-23 academic year available from IPEDS was endowment per FTE. Thus, I omitted the 2022-23 academic year from my independent variables. Table 3.11 presents all financial variables included in the independent variable set in Table 3.8.

Table 3.11

Financial Independent Variables

Variable	Year	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
Endowment per FTE enrolled student	2019-20	5025.452	9662.642	0	73198	5.148	34.075
	2020-21	5217.096	9494.021	0	71600	4.99	32.462
	2021-22	6762.863	12445.716	0	96893	5.081	33.422
Auxiliary income	2019-20	13800000	25200000	0	186000000	3.839	21.46
	2020-21	10500000	21000000	0	152800000	3.917	21.311
	2021-22	16100000	30600000	0	205600000	3.537	17.484
Federal appropriations	2019-20	80071.993	574000	0	6505892	9.966	109.516
	2020-21	352000	2410000	0	26202037	9.146	94.304
	2021-22	392000	2590000	0	28638333	9.387	99.685
State appropriations	2019-20	4690000	13900000	0	108800000	5.29	35.212
	2020-21	4740000	14100000	0	115500000	5.396	37.098
	2021-22	5030000	15400000	0	119900000	5.533	37.915
Local appropriations	2019-20	64000000	90400000	2389912	523900000	2.441	9.565
	2020-21	58800000	81500000	2407947	467500000	2.611	11.044
	2021-22	68000000	96600000	2462551	514100000	2.325	8.565
Gifts	2019-20	1960000	6170000	0	65327100	8.183	79.976
	2020-21	2040000	6170000	0	61870560	7.312	65.679
	2021-22	2080000	6750000	0	71323935	8.112	79.168
Investment income	2019-20	1380000	3130000	-3201157	28777713	5.292	42.317
	2020-21	2680000	6960000	-820626	43540353	3.723	18.179
	2021-22	-1830000	5480000	-30331377	5689891	-3.294	14.264
Athletic revenues with educational activities	2019-20	0.158	0.366	0	1	1.88	4.535
	2020-21	0.164	0.372	0	1	1.811	4.28
	2021-22	-0.322	1.01	-2	1	-0.735	2.328
Athletic revenues w auxiliary enterprises	2019-20	0.575	0.496	0	1	-0.305	1.093
	2020-21	0.548	0.499	0	1	-0.193	1.037
	2021-22	0.048	1.222	-2	1	-0.887	2.112
Athletic revenue w other sources	2019-20	0.158	0.366	0	1	1.88	4.535
	2020-21	0.082	0.276	0	1	3.042	10.256
	2021-22	-0.329	1.004	-2	1	-0.742	2.34

The mean for the variable Endowment per FTE enrolled student gave a positive impression of endowment during the study's timeframe, indicating that it increased on average. However, standard deviation, skewness, and kurtosis suggest these data are highly dispersed. The standard deviation is high relative to the mean, suggesting the endowment per FTE has many outliers. The high positive skewness and high kurtosis reflect a heavy tail to the right, suggesting several outliers of institutions with high endowments per FTE (Acock, 2018). In context, endowment is a highly inequitable financial characteristic for HEIs, and choosing a diverse range of institutions to sample highlights the diversity of endowments and institutional financial health. In 2019-20, 13 institutions in the sample had zero endowment per FTE, dropping to 12 for the 2020-21 academic year. Like the Endowment per FTE enrolled student variable, many other financial variables display high positive skewness and kurtosis, reflecting significant outliers in public funding, gifts, and other sources of income during the pandemic. This wide dispersion reflected the different financial situations of the 146 institutions in my study.

Financial data also included information on federal government-provided funding issued as part of relief efforts during the COVID-19 pandemic. During the pandemic, the federal government provided multiple funding rounds for institutions to support student needs and operational expenses. Often referred to broadly as the Coronavirus Aid, Relief, and Economic Security (CARES) Act funding, government support was distributed in three rounds, and the higher education-specific funding was referred to as Higher Education Emergency Relief Fund (HEERF) funding (US Department of Education, 2023). This data from the US Department of Education was included to provide a complete picture of the financial resources available to institutions in the sample during the pandemic from 2020 to 2021.

The federal relief data span nine variables to reflect the multiple rounds of funding and funding devised for specific institution types. To summarize the nine variables, I generated one single variable for each institution, adding up all nine funding categories to create a single variable encompassing all federal funding. Table 3.12 below summarizes the generated variable encompassing all federal funding.

Table 3.12

Total federal emergency relief funding by institution

Variable	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Total federal emergency relief funding	45318467	55771861	550100	2.87	2.3	8.27

Like many other financial variables, federal emergency relief funding during the pandemic was widely dispersed, with a standard deviation higher than the mean amount of funding, and strong skew and kurtosis, reflecting the presence of high outliers.

Employee Demographics

Human resource data and employee demographics are available via IPEDS datasets and are broadly categorized as staff, with separate categories for instructional staff (faculty) and non-instructional staff. I pulled together a total number of instructional staff and non-instructional staff across the academic years of 2019-20, 2020-21, and 2021-22 to track changes in these numbers during the years of the COVID-19 pandemic. From IPEDS data, I compiled statistics on instructional and non-instructional staff to contextualize data on layoffs. While relevant to this study, IPEDS data for faculty and staff does not necessarily reflect layoffs. To gather layoff data, I completed a multistep process to ensure that the data was accurate and not misrepresented by resignations or other changes in faculty and staff.

Capturing the actual number of layoffs, rather than anecdotal or concurrent changes in faculty and staff numbers, involved compiling data outside the IPEDS dataset. To obtain a reliable record of layoffs, I took a multistep approach to determine a binary yes/no response to whether layoffs occurred at each campus in my sample from March 10, 2020 through June 30, 2023. For each institution in the study, I completed three steps to determine whether layoffs occurred:

1. Searched for news of layoffs at each institution in the sample via multiple news sources, including Inside Higher Ed, the American Association of University Professors, Nexis Uni, and Google News.
2. Emailed campus public records officers and Human Resource departments directly to inquire whether layoffs, reductions in force, or the elimination of filled positions occurred from March 10, 2020 and June 30, 2023.
3. Searched state-wide WARN databases for layoffs at institutions in my sample, including layoffs within affiliated third-party organizations that operate within the institution.

The steps outlined above were informed by research conducted by Turner (2014), who informally reviewed student newspapers and institutional websites for information regarding layoffs at HEIs. Turner's (2014) approach instructed my data collection on layoffs. I searched news sources for information on layoffs at each institution and documented confirmation of layoffs that I found during my designated timeframe.

Additionally, I searched the Worker Adjustment and Retraining Notification (WARN) Act reports for each state. The WARN Act requires that employers conducting layoffs that meet specific criteria, which vary by state, publish notifications of layoffs (US Department of Labor,

n.d.). Each state maintained a database of searchable WARN Act notifications that might provide information for institutions whose layoffs meet the appropriate state threshold for notifications.

When working through these steps, I documented which institutions had layoffs and the source of that information. For the 146 institutions for which I verified this information, Table 3.13 presents the frequency of layoffs at sample institutions.

Table 3.13

Occurrence of Layoffs at Sample Institutions

Did institution conduct layoffs	Freq.	Percent
No	57	39.04
Yes	89	60.96
Total	146	100

Within the total sample of 173 institutions, 146 were able to verify whether layoffs occurred. Of those 146 institutions, 39.04% confirmed no layoffs occurred from March 2020 through June 2023, while 60.96% either confirmed layoffs via my outreach or review of news sources, press releases, and public data. The institutions that did not respond to my inquiry and follow-ups, and for whom no news was available via my search process, were omitted from my sample. After omitting institutions with unverifiable information, my sample included 146 of the original 173 institutions.

The final subset of variables I collected included the number of faculty and staff at institutions. Table 3.14 indicates that the mean number of faculty decreased by 10 during the four years captured, a decrease of 3.7%. Table 3.14 reflects a decrease of 64.84 in the mean number of staff, or 5.3%, slightly larger than the percentage decrease in faculty over the same timeframe. A notable difference between changes in faculty and staff numbers during this time is visible in

the minimum and maximum columns. For faculty in Table 3.14, the minimum number of faculty across all institutions in the sample increased from 19 to 21, while the maximum decreased by two, from 1306 to 1304, suggesting the top and bottom of the range did not experience sharp changes.

Table 3.14

Faculty and Staff Numbers

Category	Year	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Faculty	2019-20	272.16	301.92	19	1306	1.83	5.50
	2020-21	268.44	303.01	21	1274	1.85	5.57
	2021-22	265.52	305.54	21	1294	1.89	5.74
Staff	2019-20	1212.82	1456.81	84	8918	2.70	11.72
	2020-21	1162.43	1454.40	73	8941	2.85	12.85
	2021-22	1147.88	1460.01	75	9067	2.94	13.62

Conversely, the staff changes reflected in Table 3.14 show a growth in extremes, while the minimum number of staff reported by an institution dropped from 84 to 75, and the maximum number of staff grew from 8918 to 9067. The data described in the faculty and staff categories of independent variables reflected changes in personnel throughout the pandemic but does not necessarily reflect layoffs. Increases or decreases could reflect layoffs or could also be attributed to natural attrition and hiring practices.

The descriptive statistics presented in this chapter were not all-inclusive of variables but provided an overview of the variables I used in my statistical analysis. All 253 initial variables I collected are listed in Appendix A, while variables selected for statistical analysis and described in this chapter are listed in Table 3.8. Descriptive statistics provide context for variables described further in statistical analysis findings outlined in the section below.

Statistical Analyses

The data in my study was analyzed using multiple approaches in Stata software to answer both research questions. First, I measured descriptive statistics to present the range of enrollment, financial, and staffing variations amongst sample institutions. I then conducted a Pearson correlation to identify and report on significant relationships between variables (Acock, 2018). The Pearson correlation illuminated relationships between the independent and binary dependent variable, providing valuable insight into which institutional characteristics are related to layoffs and the strength of that relationship (Varma, n.d.). The Pearson correlation identified the strength and direction of the relationship between binary dependent variables and continuous independent variables (Varma). The correlation data will answer the first research question to establish any significant relationship between variables before moving on to identifying predictive factors.

To answer my second question, I conducted a logistic regression to produce an odds ratio and determine the effect of independent variables in predicting layoffs at the sample institutions (Acock, 2018). Logistic regression demonstrates whether IVs "explain a statistically significant amount of variance" in the DV (Kim, 2016, n.p.). Logistic regression is the most appropriate statistical analysis for the dichotomous dependent variable of layoffs (0 = no layoffs occurred, 1 = layoffs occurred) (Acock, 2018). I conducted a multiple logistic regression analysis, checked for multicollinearity, determined whether the models are significant at $p>.05$, and determined to what degree variables predict layoffs (Acock, 2018). Finally, I conducted t-tests to further test variables that predicted layoffs to answer my second research question (Acock, 2018).

Mitigating Type I and Type II Error

An important consideration to address in my research is the possibility of Type I and Type II errors. Type I errors imply a false positive result, that the null hypothesis was rejected in error (Gliner et al., 2017). The more analyses conducted can increase the likelihood of a Type I

error due to chance. To decrease the possibility of a Type I error, I set the $p < .05$, a standard level for social science research (Daniel & Onwuegbuzie, 2000). Daniel and Onwuegbuzie (2000) suggested that anywhere from .01 to .05 is an acceptable alpha; looking at my results, I set alpha at .05 but no variables would have been significant at $p < .01$. This higher threshold increases the possibility of a Type I error. To minimize the risk of a Type I error "researchers are admonished to develop their hypotheses from a sound theoretical framework that is based on the extant literature" n, p. 10). Similarly, Cohen (1982) recommended letting theory guide research design and not "fishing" for variables. The conceptual framework, developed from my literature review and research on the topic of layoffs in higher education, sets a strong foundation for the selection of my sample and variables.

In setting lower alpha to mitigate the chance of Type I errors, researchers must balance the risk this creates in increasing the chance of Type II errors. (Cohen, 1982; Daniel & Onwuegbuzie, 2000). Type II errors occur when researchers falsely fail to reject a null hypothesis (Daniel & Onwuegbuzie, 2000). One way to decrease the likelihood of a Type II error is to increase the sample size (Cohen, 1982; Knudson, 2025). Within the parameters of my study, I strived to create a sample that was sufficiently large and diverse, while maintaining a workable dataset for analysis. Knudson (2025) recommended samples no smaller than 100 for correlation studies, and my final sample number was 146. I am interested in growing my sample in the future, but for my preliminary work on this topic 146 institutions met Knudson's recommendation. Additionally, Cohen (1982) recommended removing any extraneous sources of variability from data to reduce the chances of Type II error. By collecting data from centralized datasets like IPEDS and the US Department of Education, I was able to compile data across all sample institutions from the same source ensuring greater consistency.

Validity

The monumental nature of the financial upheaval during the COVID-19 pandemic represented an extreme situation and, thus, impacted the external validity of this study. Best framed as an issue of ecological validity, the situation examined in my study was unusual (Kihlstrom, 2021). Ecological validity refers to the practicality of research outcomes outside the study's confines (Kihlstrom). While no recent pandemics offer a comparable context, relatively recent economic recessions can offer a source of external validity. In the literature review, my study considers the impact of the Great Recession on HEI finances and outcomes. Like the COVID-19 pandemic, the Great Recession was a unique historical context for studying HEI finance. Literature on the Great Recession could not be generalized to all economic crises, but it provides valuable lessons in how institutions may react to a particular set of challenges.

My study considers the Great Recession's outcomes as a comparable economic upset. However, the literature notes differences between the context of the Great Recession and the COVID-19 pandemic (Barr & Turner, 2013; Brint et al., 2016; Turner, 2014). While enrollment boomed during the Great Recession, that was not the case during the pandemic (Barr & Turner, 2013; Brint et al., 2016; Nietzel, 2022; Turner, 2014). The pandemic era studied in my research is unique in recent memory, and my study was designed as field research; circumstances were not artificially constructed or applied, and they could recur in a similar form. For this reason, it is worth studying HEI business operations in the context of an economic crisis to uncover findings generalizable to future crises.

Limitations

Limitations with data exist in my study that must be carefully considered and strategically addressed. IPEDS data, the primary data source for my independent variable data, is

helpful in its timely, consistent, and easily accessible nature. However, limitations exist in that the data reported via IPEDS relies on accurate record-keeping and representation from HEIs, and some HEIs may misinterpret or misreport data, whether knowingly or not. Employment data reported via IPEDS could also be challenging to interpret as it solely reflects changes in the numbers of employees but does not nuance changes to reflect voluntary departures, layoffs, or hiring freezes, among the many reasons employment numbers may vary. Finally, IPEDS employment data does not reflect institutional contractors or third-party employees, some of the most vulnerable employees during layoffs (Bauman, 2022). WARN data could supplement IPEDS data critically to reflect layoffs for institutional employees and third-party staff.

The primary data source for my dependent variable similarly relies on accurate institutional record-keeping and reporting. Institutions largely self-reported their instances of layoffs. I manually collected layoff data for the 173 institutions in my sample, and the ease of accessing this data varied greatly by institution and state system. I only collected binary yes/no responses to layoffs for simplicity and consistency across my sample. Some institutions may have been willing and able to provide more detailed information about layoffs. However, some would not have been able to provide this information, so I limited what I collected to ensure the data was consistent across my sample. The binary dependent variable worked to answer my research questions, but additional details around the number of layoffs and identities of laid-off staff would provide valuable information for a more robust and nuanced inquiry.

In selecting institutions for my sample, I intentionally sought to include diverse public institutions. I focus on creating a cohesive set of institutions that reflect a wide range of student populations across the US. I include public institutions because of the greater transparency of information and data. While I think this was the correct choice for my study, it excluded

consideration of the impact of the pandemic on staffing at private institutions, which also presented a range of enrollment and financial health situations. Further studies should include private institutions to explore connections between the economic conditions of the pandemic and staff and faculty layoffs at institutions that receive extremely limited public funding.

Additionally, my study takes a quantitative approach to understanding the relationship between institutional characteristics and layoffs and could open the door to future investigation. Brint et al. (2016) identified further research directions, including case studies, interviews, and document reviews, to better understand institutional logic around budgetary decisions. Brint et al.'s recommendation can be applied to identifying specific institutions, with researchers taking a case study approach to take a narrower look at institutional characteristics and layoffs. Future researchers should choose an institutional case study in which layoffs occurred or did not occur and inquire about the economic conditions at that organization and the decision-making that enabled institutional outcomes. While my work seeks to illuminate connections between institutional characteristics and personnel changes, further work should look more deeply at specific institutions to dig deeper into specific variables and strategies for economic survival.

Finally, while I explore the equity implications of layoffs in my literature review and, to a limited extent, discuss equity as a factor in analyzing my findings, I could not fully unearth the nuances of equity related to layoffs in this study. The layoff data I was able to collect was a binary yes/no as to whether institutions collected layoffs. In further work, I recommend exploring whether layoffs were conducted and *who* was impacted directly. Further work should examine which positions were eliminated and learn more about the individuals who filled those roles to analyze the impact of layoffs from a lens of equity.

Limitations in my study included factors outside of my control as a researcher and my choices in how I structured my study to create an achievable and streamlined line of inquiry. Outside of my control, I relied on self-reported data from HEIs with the potential for intentional or unintentional human errors in reporting. I chose to limit the number and types of institutions in my sample, focusing on specific large, centralized public institutions within an intentionally selected group of states. I also chose to focus on quantitative inquiry, limiting my study's focus and potential findings. And finally, I was not able to fully explore the equity implications of my findings without more nuanced data around layoffs, including demographic data and more detailed data from HEIs on layoffs that they conducted.

CHAPTER 4

RESEARCH FINDINGS AND RESULTS

Upon completing data collection and analysis, I reviewed my findings and organized them around my two research questions to best answer them. This chapter presents data analysis results organized around my research questions, providing results of my statistical analysis and answers to my inquiry. Question one inquires about the existence of a relationship between the independent variables identified in Chapter Three and the occurrence of layoffs. I used Pearson correlations and Chi-square tests to address and uncover relationships between variables. Question two inquires what, if any, of the independent variables identified in Chapter Three predict layoffs, which I answered with logistic regression and t-test analysis. In the following sections, I present my questions, the results of my statistical analysis, and the findings of my data analysis to answer the questions.

Answering the Research Questions

Research Question One: Relationship between Institutional Characteristics and Layoffs

The first question I answer from my data is: what relationship exists between the identified institutional characteristics and the occurrence of employee layoffs between March 2020 and June 2023? To answer my first research question, I conducted a Pearson correlation for all 253 variables, listed in Appendix A. A correlation is intended to measure the strength and direction of a relationship between two variables, making it an ideal test to determine the relationship between the dependent variable and the many independent variables I started with for analysis (Acock, 2018).

I conducted a bivariate correlation for all independent variables in Appendix A to determine the relationships between enrollment, financial, and human resources characteristics and the occurrence of layoffs at 146 higher education institutions in my sample. To streamline the presentation of data, the results in Tables 4.1 – 4.4 below reflect the independent variables listed in Table 3.8. Notably, the 47 variables included in Table 3.8 also encapsulated all variables that were significant in the Pearson correlation.

Table 4.1

Pearson Correlation Findings, 2019-20 Variables

	dv	Total FTE enrollment	% in-district	% out-of-state	% unknown	% Pell	Endowment per FTE	Auxiliary income	Federal appropriations	State appropriations	Local appropriations	Gifts	Investment income	Athletics w/ed activities	Athletics w/ auxiliary	Athletics w/other
Total FTE enrollment	0.070 0.402															
% in-district	-0.097 0.246	-0.088 0.290														
% out-of-state	-0.180 0.030*	0.056 0.500	0.087 0.296													
% unknown	0.189 0.022*	-0.193 0.020*	-0.091 0.273	-0.234 0.004*												
% Pell	0.147 0.077	0.231 0.005*	-0.150 0.071	-0.171 0.039*	-0.247 0.003*											
Endowment per FTE	0.008 0.921	0.326 0.000*	-0.113 0.173	0.422 0.000*	-0.133 0.111	-0.219 0.008*										
Auxiliary income	0.067 0.424	0.681 0.000*	-0.158 0.057	0.310 0.000*	-0.159 0.055	-0.038 0.646	0.686 0.000*									
Federal appropriations	0.057 0.492	-0.074 0.374	0.014 0.865	0.000 0.996	-0.050 0.545	0.227 0.006*	-0.045 0.589	-0.035 0.678								
State appropriations	0.032 0.701	0.894 0.000*	-0.165 0.046*	0.088 0.290	-0.186 0.024*	0.207 0.012*	0.416 0.000*	0.691 0.000*	-0.070 0.403							
Local appropriations	-0.025 0.760	-0.016 0.846	0.461 0.000*	0.230 0.005*	-0.098 0.238	-0.179 0.030*	0.003 0.968	-0.091 0.275	-0.009 0.913	-0.132 0.112						
Gifts	0.051 0.541	0.435 0.000*	-0.102 0.222	0.233 0.005*	-0.076 0.364	-0.051 0.542	0.635 0.000*	0.659 0.000*	-0.029 0.733	0.459 0.000*	-0.016 0.846					
Investment income	0.074 0.378	0.741 0.000*	-0.106 0.203	0.220 0.008*	-0.126 0.131	0.048 0.566	0.567 0.000*	0.602 0.000*	-0.060 0.475	0.811 0.000*	-0.084 0.312	0.305 0.000*				
Athletics w/ed activities	-0.155 0.062	0.290 0.000*	-0.019 0.818	0.065 0.438	-0.151 0.069	0.171 0.040*	0.010 0.909	0.009 0.911	-0.061 0.468	0.282 0.001*	0.080 0.335	0.084 0.313	0.235 0.004*			
Athletics w/ auxiliary	0.108 0.195	-0.078 0.349	-0.132 0.112	-0.048 0.568	0.092 0.270	0.006 0.943	0.054 0.514	0.174 0.036*	0.026 0.751	-0.055 0.513	-0.148 0.075	0.043 0.606	-0.169 0.041*	-0.389 0.000*		
Athletics w/other	-0.039 0.637	0.377 0.000*	0.046 0.585	0.127 0.126	-0.107 0.198	0.091 0.274	0.117 0.158	0.102 0.221	-0.061 0.468	0.323 0.000*	-0.007 0.930	0.079 0.345	0.421 0.000*	0.277 0.001*	-0.389 0.000*	

Note. * p <. 05

Table 4.2

Pearson Correlation Findings, 2020-21 Variables

	dv	Total FTE enrollment	% in-district	% out-of-state	% unknown	% Pell	Endowment per FTE	Auxiliary income	Federal appropriations	State appropriations	Local appropriations	Gifts	Investment income	Athletics w/ed activities	Athletics w/ auxiliary	Athletics w/other
Total FTE enrollment	0.071 0.398															
% in-district	-0.106 0.202	-0.107 0.197														
% out-of-state	-0.092 0.272	0.057 0.496	0.086 0.304													
% unknown	0.170 0.040*	-0.207 0.012*	-0.071 0.394	-0.156 0.061												
% Pell	0.093 0.264	0.269 0.001*	-0.140 0.091	-0.087 0.295	-0.252 0.002*											
Endowment per FTE	0.009 0.910	0.326 0.000*	-0.112 0.178	0.393 0.000*	-0.126 0.131	-0.193 0.020*										
Auxiliary income	0.061 0.465	0.565 0.000*	-0.151 0.070	0.344 0.000*	-0.148 0.075	-0.048 0.566	0.704 0.000*									
Federal appropriations	0.055 0.512	-0.031 0.707	0.049 0.557	-0.036 0.662	-0.056 0.502	0.111 0.181	-0.055 0.512	-0.061 0.467								
State appropriations	0.041 0.626	0.868 0.000*	-0.175 0.035*	0.073 0.379	-0.198 0.017*	0.220 0.008*	0.445 0.000*	0.596 0.000*	-0.065 0.434							
Local appropriations	-0.025 0.763	-0.031 0.706	0.484 0.000*	0.206 0.013*	-0.090 0.278	-0.168 0.043*	0.011 0.898	-0.072 0.391	0.112 0.178	-0.126 0.129						
Gifts	0.044 0.596	0.449 0.000*	-0.113 0.175	0.204 0.014*	-0.090 0.278	-0.025 0.766	0.636 0.000*	0.639 0.000*	-0.047 0.574	0.535 0.000*	-0.008 0.919					
Investment income	0.049 0.556	0.724 0.000*	-0.127 0.127	0.213 0.010*	-0.141 0.090	0.133 0.110	0.595 0.000*	0.495 0.000*	-0.056 0.498	0.656 0.000*	-0.069 0.411	0.593 0.000*				
Athletics w/ed activities	-0.100 0.231	0.350 0.000*	-0.051 0.545	0.026 0.752	-0.131 0.115	0.218 0.008*	0.008 0.921	-0.110 0.185	-0.065 0.436	0.277 0.001*	0.073 0.383	0.110 0.188	0.408 0.000*			
Athletics w/ auxiliary	0.119 0.151	-0.081 0.330	-0.060 0.473	-0.017 0.834	0.119 0.151	0.025 0.764	0.078 0.347	0.263 0.001*	0.036 0.670	-0.011 0.900	-0.143 0.084	0.061 0.466	-0.257 0.002*	-0.414 0.000*		
Athletics w/other	-0.067 0.420	0.153 0.066	0.134 0.108	0.260 0.002*	-0.114 0.169	-0.029 0.731	0.180 0.030*	0.031 0.706	-0.044 0.599	0.119 0.154	0.073 0.384	-0.025 0.769	0.208 0.012*	-0.065 0.433	-0.279 0.001*	

Note. * p <. 05

Table 4.3

Pearson Correlation Findings, 2021-22 Variables

	dv	Total FTE enrollment	% in-district	% out-of-state	% unknown	% Pell	Endowment per FTE	Auxiliary income	Federal appropriations	State appropriations	Local appropriations	Gifts	Investment income	Athletics w/ed activities	Athletics w/ auxiliary	Athletics w/other
Total FTE enrollment	0.071 0.391															
% in-district	-0.116 0.164	-0.108 0.196														
% out-of-state	-0.147 0.076	0.115 0.167	0.080 0.337													
% unknown	0.176 0.033*	-0.190 0.022*	-0.090 0.281	-0.197 0.017*												
% Pell	0.111 0.183	0.280 0.001*	-0.164 0.049*	-0.091 0.275	-0.262 0.001*											
Endowment per FTE	0.009 0.910	0.340 0.000*	-0.109 0.192	0.406 0.000*	-0.122 0.141	-0.189 0.022*										
Auxiliary income	0.049 0.555	0.731 0.000*	-0.168 0.044*	0.343 0.000*	-0.157 0.059	0.013 0.878	0.713 0.000*									
Federal appropriations	0.072 0.387	-0.041 0.622	0.027 0.750	-0.042 0.612	-0.043 0.604	0.104 0.212	-0.053 0.523	-0.079 0.341								
State appropriations	0.041 0.626	0.898 0.000*	-0.176 0.034*	0.107 0.199	-0.191 0.021*	0.284 0.001*	0.418 0.000*	0.724 0.000*	-0.073 0.381							
Local appropriations	-0.015 0.854	-0.030 0.719	0.457 0.000*	0.255 0.002*	-0.089 0.287	-0.153 0.065*	0.016 0.851	-0.088 0.292	0.101 0.223	-0.131 0.115						
Gifts	0.057 0.493	0.433 0.000*	-0.104 0.214	0.245 0.003*	-0.068 0.413	-0.023 0.784	0.632 0.000*	0.654 0.000*	-0.047 0.576	0.438 0.000*	-0.007 0.936					
Investment income	-0.014 0.868	-0.646 0.000*	0.110 0.186	-0.007 0.929	0.124 0.135	-0.291 0.000*	-0.136 0.102	-0.324 0.000*	0.054 0.518	-0.559 0.000*	0.061 0.464	-0.400 0.000*				
Athletics w/ed activities	-0.019 0.822	0.376 0.000*	-0.015 0.859	0.151 0.068	-0.063 0.447	0.338 0.000*	0.150 0.072	0.251 0.002*	-0.011 0.896	0.364 0.000*	-0.049 0.559	0.167 0.043*	-0.363 0.000*			
Athletics w/ auxiliary	0.066 0.428	0.175 0.035*	-0.058 0.489	0.121 0.145	0.046 0.584	0.253 0.002*	0.152 0.066	0.244 0.003*	0.027 0.747	0.162 0.050	-0.135 0.105	0.140 0.092	0.010 0.907	0.806 0.000*		
	-0.024 0.770	0.367 0.000*	0.039 0.638	0.227 0.006*	-0.072 0.390	0.287 0.000*	0.186 0.024*	0.267 0.001*	0.012 0.885	0.341 0.000*	-0.074 0.372	0.157 0.058	-0.299 0.000*	0.908 0.000*	0.805 0.000*	-0.024 0.770

Note. * p <. 05

Table 4.4

Pearson Correlation Findings, Federal Funding Variables

	dv	Total federal emergency funding	Total federal emergency funding/FTE enrollment 1920
Total federal emergency funding	0.076 0.361		
Total federal emergency funding/FTE enrollment 1920	0.164 0.048*	0.229 0.005*	

Note. * p <. 05

The Pearson correlation revealed a weak, negative relationship between the percentage of students enrolled from out-of-state in the 2019-20 fall cohort and the occurrence of layoffs between March 2020 and June 2023 ($r = -0.180$, $p < .05$). This finding suggested that out-of-state student enrollment in the 2019-20 academic year could be used as a weak indicator of layoffs; institutions with fewer out-of-state students were more likely to have also conducted layoffs. The correlation between the percentage of out-of-state students was only significant for the variable reflecting the 2019-20 academic year. The correlation result for this variable reflected a relationship between the percentage of out-of-state students institutions enrolled, who thus pay a higher tuition rate, suggesting there is a relationship between having more out-of-state students and conducting fewer layoffs.

The Pearson correlation also indicated a weak, positive relationship between the total amount of federal emergency funding allocated to an institution during the COVID-19 pandemic per FTE enrolled student and the occurrence of layoffs between March 2020 and June 2023 ($r = 0.164$, $p < .05$). This finding means the receipt of more federal emergency funding per FTE

enrolled student can be used as a weak indicator of layoffs; institutions that received more funding were also more likely to have also conducted layoffs. I created the significant variable in this correlation by combining all nine variables that describe federal emergency funding and dividing them by FTE enrollment, to create a new variable that controlled for varying institutional enrollments. The finding in the Pearson correlation suggests the relationship between emergency funding per FTE enrolled student and layoffs, and institutions that conducted layoffs received more federal emergency funding per FTE enrolled students.

Beyond the significant variables described above, three additional variables were significant, but contextual factors excluded them from consideration in the findings. The additional significant variables included the percent of students whose residency was listed as "unknown" in 2019-20, 2020-21, and 2021-22. The "unknown" residence variable is defined by IPEDS as "the percentage of full-time first-time degree/certificate-seeking undergraduates…whose residence/tuition rate status is unknown" (U.S. Department of Education, n.d.). IPEDS further defined unknown residence as a "status used when the reporting institution is unable to determine from existing records the home state or residence of the student" (U.S. Department of Education). While the "unknown" residency variable was identified as significant in the test findings, upon further review, this variable was inconsistently reported amongst institutions, creating unreliable data and possibly misleading outcomes.

Of the 146 institutions included in the Pearson correlation, only 31 (in 2019-2020) or 32 (in 2020-2021) institutions had data for the "unknown residency" variable. The percentage of students with unknown residency ranged from 1% - 52%, an extremely wide range for the small numbers of institutions reporting anything in that particular category. The 31/32 institutions which shared data for this variable were disproportionately concentrated in Minnesota. This

variable was unreliable because of the low number of institutions reporting numbers for the "unknown residency" variable and the disproportionate state representation. It thus will not be presented here as having a relationship with the dependent variable.

Another set of variables whose results were later excluded from consideration in the Pearson correlation findings were the three variables from 2019-20, 2020-21, and 2021-22, which referred to athletic revenues. These variables included "Are intercollegiate athletic revenues included with sales and services of educational activities?" and "Are intercollegiate athletic revenues co-included with sales and services of auxiliary enterprises?" When I examined athletic revenue variables more closely, I learned these variables were not continuous but rather were categorical variables, thus requiring a chi-square test for further testing. Reporting for this variable was coded with numbers ranging from -2 to 1, described in Table 4.5, below.

Table 4.5

Variable Categories for Athletic Review Variables

Value	Label
1	Yes, included with sales and services of educational activities/ sales and services of auxiliary enterprises/ sources other than sales and services
0	Not included with sales and services of educational activities/ sales and services of auxiliary enterprises/ sources other than sales and services
-1	Not reported
-2	Not applicable

The results for the chi-squared tests are presented below in Tables 4.6 – 4.14. The first row has in each table lists frequencies and the second row shows percentages of responses for each of the values listed in Table 4.5 above.

Table 4.6

Chi-Squared Test Results, Athletic Revenues with Educational Activities 2019-20

Dependent Variable	Athletic revenues with educational activities 2019-20		
	No	**Yes**	**Total**
No	44	13	57
	77.19	22.81	100.00
Yes	79	10	89
	88.76	11.24	100.00
Total	123	23	146
	84.25	15.75	100.00

Note. Pearson Chi2 = 3.51, Prob = 0.0612

Table 4.7

Chi-Squared Test Results, Athletic Revenues with Auxiliary Enterprises 2019-20

Dependent Variable	Athletic revenues with auxiliary enterprises 2019-20		
	No	**Yes**	**Total**
No	28	29	57
	49.12	50.88	100.00
Yes	34	55	89
	38.20	61.80	100.00
Total	62	84	146
	42.47	57.53	100.00

Note. Pearson Chi2 = 1.70, Prob = 0.1928

Table 4.8

Chi-Squared Test Results, Athletic Revenues with Other Source 2019-20

Dependent Variable	Athletic Revenues with Other Source 2019-20		
	No	Yes	Total
No	47	10	57
	82.46	17.54	100.00
Yes	76	13	89
	85.39	14.61	100.00
Total	123	23	146
	84.25	15.75	100.00

Note. Pearson Chi2 = 0.23, Prob = 0.6346

Table 4.9

Chi-Squared Test Results, Athletic Revenues With Educational Activities 2020-21

Dependent Variable	Athletic Revenues with Educational Activities 2020-21		
	No	Yes	Total
No	45	12	57
	78.95	21.05	100.00
Yes	77	12	89
	86.52	13.48	100.00
Total	122	24	146
	83.56	16.44	100.00

Note. Pearson Chi2 = 1.45, Prob = 0.2286

Table 4.10

Chi-Squared Test Results, Athletic Revenues with Auxiliary Enterprises 2020-21

Dependent Variable	Athletic Revenues with Auxiliary Enterprises 2020-21		
	No	Yes	Total
No	30	27	57
	52.63	47.37	100.00
Yes	36	53	89
	40.45	59.55	100.00
Total	66	80	146
	45.21	54.79	100.00

Note. Pearson Chi2 = 2.08, Prob = 0.1491

Table 4.11

Chi-Squared Test Results, Athletic Revenues with Other Source 2020-21

Dependent Variable	Athletic Revenues with Other Source 2020-21		
	No	Yes	Total
No	51	6	57
	89.47	10.53	100.00
Yes	83	6	89
	93.26	6.74	100.00
Total	134	12	146
	91.78	8.22	100.00

Note. Pearson Chi2 = 0.66, Prob = 0.4166

Table 4.12

Chi-squared test results, athletic revenues with educational activities 2021-22

Dependent Variable	Athletic revenues with educational activities 2021-22			
	N/A	No	Yes	Total
No	14	32	11	57
	24.56	56.14	19.30	100.00
Yes	21	56	12	89
	23.60	62.92	13.48	100.00
Total	35	88	23	146
	23.97	60.27	15.75	100.00

Note. Pearson Chi2 = 1.02, Prob = 0.5992

Table 4.13

Chi-Squared Test Results, Athletic Revenues with Auxiliary Enterprises 2021-22

Dependent Variable	Athletic revenues with auxiliary enterprises 2021-22			
	N/A	No	Yes	Total
No	14	18	25	57
	24.56	31.58	43.86	100.00
Yes	21	16	52	89
	23.60	17.98	58.43	100.00
Total	35	34	77	146
	23.97	23.29	52.74	100.00

Note. Pearson Chi2 = 4.17, Prob = 0.1242

Table 4.14

Chi-Squared Test Results, Athletic Revenues with Other Source 2021-22

Dependent Variable	Athletic revenues with other source 2021-22			
	N/A	No	Yes	Total
No	14	32	11	57
	24.56	56.14	19.30	100.00
Yes	21	57	11	89
	23.60	64.04	12.36	100.00
Total	35	89	22	146
	23.97	60.96	15.07	100.00

Note. Pearson Chi2 = 1.48, Prob = 0.4771

I conducted nine Pearson's Chi-square tests, results described in Tables 4.6 – 4.14, to determine if there was a significant relationship between the variables listed in each table and the dependent variable of institutional layoffs. The Pearson's Chi-square test results were insignificant in any of the nine tests, with $p > .05$ for all tests. The Pearson's Chi-square tests provided valuable insight into my data's only categorical independent variables to ensure they were properly tested during analysis.

Research Question One Summary

My research question addressed in this section was: what relationship exists between the identified institutional characteristics and the occurrence of employee layoffs between March 2020 and June 2023? To summarize findings for question one, results from the Pearson correlation suggested that only two variables of the 253 total bear a relationship with the occurrence of layoffs at the sampled HEIs between March 2020 and June 2023. Findings suggested that very little relationship exists between the independent variables and the dependent variables, with two variables presenting a significant ($p <. 05$) relationship to the occurrence of layoffs. Out-of-state student enrollment in the 2019-20 is a weak indicator of layoffs; institutions

with fewer out-of-state students were also more likely to have conducted layoffs. And the receipt of more federal emergency funding per FTE enrolled student was also a weak indicator of layoffs; institutions that received more funding were also more likely to have conducted layoffs. Chi-square tests for categorical variables found no significant relationship between variables. Chapter Five will further discuss the two variables with significant relationships to the dependent variable.

Research Question Two: Predicting Institutional Layoffs

The second question I answer in this study is: to what extent do institutional characteristics predict the occurrence of layoffs between March 2020 and June 2023? To answer this question, I conducted logistic regression tests to seek significant predictors of layoffs at the 146 institutions verified within my sample. Variables included in my preliminary logistic regression models, grouped by year, except for the federal emergency funding variables compiled across years, are listed in Table 3.8.

With the independent variables described in Chapter Three in Table 3.8, I conducted a binary logistic regression to determine what predicts the odds of an institution conducting layoffs. To conduct logistic regression, I grouped variables in Table 3.8 by year. I conducted one test for each set of academic year variables and one for the federal funding variables, with results shared in Tables 4.15 and 4.16.

Table 4.15

Logistic Regression Test Findings by Year with "Unknown Residency" Variable Included

Variable	2019-20			2020-21			2021-22		
	Coef.	Std. Error	p-value	Coef.	Std. Error	p-value	Coef.	Std. Error	p-value
Total FTE enrollment	1	0	0.907	1	0	0.616	1	0	0.29
Percent in-district	0.993	0.009	0.49	0.99	0.01	0.287	0.991	0.01	0.377
Percent out-of-state	0.96	0.021	0.061	0.985	0.02	0.448	0.973	0.02	0.182
Percent unknown	1.097	0.053	0.058	1.09	0.047	0.048*	1.1	0.051	0.039*
Percent Pell	1.052	0.021	0.01*	1.025	0.018	0.155	1.038	0.02	0.051
Endowment per FTE	1	0	0.909	1	0	0.958	1	0	0.498
Auxiliary	1	0	0.314	1	0	0.976	1	0	0.886
Federal appropriations	1	0	0.765	1	0	0.624	1	0	0.445
State appropriations	1	0	0.081	1	0	0.606	1	0	0.308
Local appropriations	1	0	0.148	1	0	0.3	1	0	0.296
Gifts	1	0	0.323	1	0	0.96	1	0	0.788
Investment income	1	0	0.096	1	0	0.479	1	0	0.916
Athletic revenues w educational activities	0.333	0.222	0.099	0.399	0.267	0.169	0.629	0.343	0.396
Athletic revenues w auxiliary enterprises	1.267	0.594	0.613	1.346	0.629	0.524	1.5	0.548	0.267
Athletic revenue w other source	0.75	0.49	0.66	0.78	0.605	0.749	0.913	0.453	0.855

Note. * p <. 05

Table 4.16

Logistic Regression Findings for Emergency Funding Variables

Variable	Coef.	Std. Error	p-value
Total federal emergency funding	1	0	0.713
Total emergency funding/FTE enrollment 1920	1	0	0.077

In Tables 4.15 and 4.16, three variables were significant with $p < .05$, including the percentage of students receiving Pell Grants in 2019-20, the percentage of students whose residency was unknown in 2020-21, and the percentage of students whose residency was unknown in 2021-22. Like the findings described for the Pearson correlation, the "Percent Unknown" variable, referring to students whose residency was reported as unknown, was inconsistently reported amongst institutions and, thus, removed from the consideration of significant variables. After disqualifying the "Percent Unknown" variables (the percentage of students that HEIs reporting as having an "unknown" residency) for 2019-20, 2020-21, and 2021-22, the sole variable across all years that was significant was the percentage of students at an institution who received Pell Grants for the 2019-20 academic year, with very minor predictive ability. For the 2019-20 academic year variables, the overall model was significant (χ^2 (15, N = 146) = 29.73, $p < .05$). Institutions with a higher percentage of students receiving Pell Grants in 2019-20 had a 5.2% increase in odds of conducting layoffs from March 2020 through June 2023.

With the findings highlighted in Table 4.15 and 4.16, I sought additional ways to conduct logistic regression for significant findings and removed the disqualified "residency unknown" variable. I conducted a second set of logistic regression models where I removed the "unknown residency" variable and conducted the tests as described for the first logistic regression, with the

same variables listed in Table 4.15 except for the “unknown residency” variable for each year. Findings for the second logistic regression test are presented in Table 4.17, below.

Table 4.17

Logistic Regression Test Findings by Year Without "Unknown Residency" Variable Included

Variable	2019-20			2020-21			2021-22		
	Coef.	Std. Error	p-value	Coef.	Std. Error	p-value	Coef.	Std. Error	p-value
Total FTE enrollment	1	0	0.839	1	0	0.666	1	0	0.303
Percent in-district	0.991	0.009	0.315	0.988	0.01	0.206	0.988	0.01	0.222
Percent out-of-state	0.95	0.02	0.018*	0.982	0.019	0.358	0.966	0.02	0.091
Percent Pell	1.04	0.019	0.036*	1.014	0.016	0.39	1.022	0.018	0.206
Endowment per FTE	1	0	0.654	1	0	0.857	1	0	0.645
Auxiliary	1	0	0.335	1	0	0.916	1	0	0.992
Federal appropriations	1	0	0.838	1	0	0.684	1	0	0.5
State appropriations	1	0	0.061	1	0	0.55	1	0	0.335
Local appropriations	1	0	0.166	1	0	0.347	1	0	0.317
Gifts	1	0	0.239	1	0	0.921	1	0	0.717
Investment income	1	0	0.071	1	0	0.339	1	0	0.981
Athletic revenues w educational activities	0.302	0.2	0.071	0.376	0.246	0.135	0.597	0.323	0.341
Athletic revenues w auxiliary enterprises	1.351	0.612	0.506	1.54	0.693	0.337	1.697	0.608	0.14
Athletic revenue w other source	0.734	0.472	0.631	0.723	0.555	0.673	0.874	0.431	0.785

Note. * p <. 05

In Table 4.17, two variables were significant with p <. 05: Percent Out-of-State 1920 and Percent Pell 1920. For the 2019-20 academic year variables, the overall model was significant (χ^2 (14, N = 146) = 24.12, p < .05). Running logistic regression tests a second time without the "unknown" residency variable introduced one new significant variable with the percentage of out-of-state students in the 2019-20 academic year presenting as a significant variable, p <. 05. Institutions with a higher percentage of students attending from out-of-state in 2019-20 had a 5% decrease in odds of conducting layoffs from March 2020 through June 2023. Meanwhile, the variable reflecting the impact of the percentage of students receiving Pell Grants at an institution was again significant, but with a different odds ratio outcome. Institutions with a higher percentage of students receiving Pell Grants in 2019-20 had a 4% increase in odds of conducting layoffs from March 2020 through June 2023.

I conducted one final logistic regression model in which I reshaped the data to create variables that encapsulate all data across the years for each variable and allow for a longitudinal analysis (Acock, 2018). Reshaping the data created a variable for year where "1" is the 2019-2020 school year, "2" is the 2020-2021 academic year, and "3" is the 2021-2022 academic year. Table 4.18 below reflects the variables across the three academic years of the study.

Table 4.18

Logistic Regression Findings with Longitudinal Variable

Variable	Coef.	Std. Error	p-value
1920	1	.	.
2021	1.034	.258	.893
2122	.99	.262	.969
FTE undergraduate enrollment	1	0	.198
Percent out-of-state	.966	.01	.001*
Percent Pell	1.028	.01	.005*
Endowment per FTE enrolled student	1	0	.191
Tuition and fees after deducting discounts and allowances	1	0	.184
Federal operating grants and contracts	1	0	.701
Athletic revenues w educational activities	.835	.145	.3
Total faculty	.999	.002	.594
Total staff	1	0	.403
Constant	.896	.331	.766

Note. * p <. 05

For the reshaped variables in Table 4.18, the overall model was significant (χ^2 (11, N = 438 = 32.15, p < .05). The results from the longitudinal logistic regression model present the same two significant variables that the first two logistic regression models have shown. Institutions with a higher percentage of students receiving Pell Grants increased the odds of layoffs by 2.7%. Additionally, institutions with a higher percentage of students attending from out-of-state had a 3.5% decrease in odds of conducting layoffs from March 2020 through June 2023. Overall, findings for the logistic regression models provided two significant, consistent predictors of layoffs, which were the percentage of students attending from out-of-state and the percentage of students receiving Pell Grants in the 2019-20 academic year.

Finally, to uncover any additional predictors of layoffs, I conducted t-tests with the variables in the previous logistic regression models. I found three variables that indicated significant differences in layoffs. The three variables with significant differences in layoffs are presented in Table 4.19 below.

Table 4.19

Mean Differences in Variables by Whether Institutions Conducted Layoffs - Significant Variables

	Did the institution conduct layoffs?								
	YES			No					
	n	***M***	***SD***	***n***	***M***	***SD***	***t***	ω^2	
Percent of students from out-of-state 2019-20	89	6.697	9.717	57	10.984	13.415	2.19	.025	**
Percent of students receiving Pell Grants 2019-20	89	37.416	12.978	57	33.561	12.368	-1.783	.015	**
Total federal emergency funding/FTE enrolled student	89	6376.526	3016.763	57	5494.32	1795.603	-1.992	.02	**

Note. * p < 0.1, **p < 0.05, ***p < 0.001

First, I conducted an independent samples t-test to determine if layoff outcomes differed based on institutions' percentage of out-of-state students in 2019-20, reflected in Table 4.19. Institutions that did not conduct layoffs had a significantly higher percentage of out-of-state students in 2019-20 ($t = 2.1900$, $p < .05$). Next, I conducted an independent samples t-test, shown in Table 4.19, to determine if layoff outcomes differed based on institutions' percentage of students who received Pell Grants in 2019-20. Institutions that conducted layoffs had a significantly higher percentage of students who received Pell Grants in 2019-20 ($t = -1.7828$, $p < .05$). While these results indicate significant differences, the effect sizes for both t-tests were relatively small.

Finally, I conducted an independent samples t-test to determine if layoff outcomes differed based on the total federal emergency funding institutions received per FTE enrolled student, presented in Table 4.19. Institutions that conducted layoffs had a significantly higher mean total federal emergency funding institutions per FTE enrolled student ($t = -1.9919$, $p < .05$). But again, the effect size is small, indicating only 1.99% of the variance is explained by the amount of federal emergency funding institutions received. Findings from t-tests, highlighted in Table 4.19, suggest similar connections between variables as the logistic regression models. After conducting t-tests with the initial set of variables in Table 3.8, I conducted t-tests with the variables I created for the longitudinal logistic regression model, shown in Table 4.20. Table 4.20 presents the findings of the t-tests conducted on the longitudinal variables.

Table 4.20

Mean Differences in Variables by Whether Institutions Conducted Layoffs- Longitudinal Variables

	Did the institution conduct layoffs?								
	Yes			No					
	n	***M***	***SD***	***n***	***M***	***SD***	***t***	ω^2	
FTE UG enrollment	356	6710.517	7573.3	336	5927.438	6977.053	-1.412	.001	**
% out-of-state	355	6.834	10.1956	333	9.940	12.684	3.55	.017	***
% Pell	356	35.202	13.223	335	32.394	12.487	-2.87	.01	***
Endowment per FTE	356	6034.719	13152.55	336	6618.366	10371.38	.646	0	
Tuition revenue after discounts	267	4.87	8.03	252	4.19	7.18	-1.005	0	
Federal grants and contracts	267	1.85	9.19	252	9761653	3.47	-1.992	.006	
Athletic revenues with educational activities	267	-.03	.665	252	.008	.778	.597	0	
Total faculty	356	283.975	329.509	336	258.521	326.388	-1.02	0	
Total staff	356	1268.654	1672.559	336	1175.086	1619.921	-.747	0	**

Note. * p < 0.1, **p < 0.05, ***p < 0.001

Results from the independent samples t-tests with longitudinal variables, presented in Table 4.20, uncovered two significant findings. Institutions that conducted layoffs had a significantly higher FTE undergraduate enrollment ($t = -1.412$, $p < .05$). Additionally, institutions that conducted layoffs had significantly higher numbers of staff ($t = -.747$, $p < .05$). While these results indicate significant differences, the effect sizes for both t-tests were effectively zero. The t-test results provided additional context and validation for the logistic regression models' findings and reiterated the predictive value of a few select variables for the occurrence of layoffs.

Question Two Summary

My research question addressed in this section was: To what extent do institutional characteristics predict the occurrence of layoffs between March 2020 and June 2023? Similar to findings for question one, findings for the predictor variables suggested very few predictive relationships exist between the independent variables and whether layoffs occurred, with two variables presenting a significant ($p <. 05$) predictive relationship with the occurrence of layoffs.

In the first logistic regression models, I found institutions with a higher percentage of students receiving Pell Grants in 2019-20 had a 5.2% increase in odds of conducting layoffs from March 2020 through June 2023. An institution's percentage of students receiving Pell Grants in 2019-20 was also significant in the second logistic regression test, but with a different odds ratio outcome. In the second logistic regression model, institutions with a higher percentage of students receiving Pell Grants in 2019-20 had a 4% increase in odds of conducting layoffs from March 2020 through June 2023. The second set of logistic regression models also uncovered one significant variable: the percentage of out-of-state students in the 2019-20 academic year. Institutions with a higher percentage of students attending from out-of-state in 2019-20 had a 5% decrease in odds of conducting layoffs from March 2020 through June 2023.

Overall, findings for the logistic regression tests provided two significant predictors of layoffs: the percentage of students attending from out-of-state and the percentage of students receiving Pell Grants in the 2019-20 academic year. The t-test results backed up findings for both questions one and two, showing significant differences between the percentage of students receiving Pell Grants in the 2019-20 academic year, the percentage of students enrolled from out of state in 2019-20, and the total amount of federal relief funding per FTE enrolled student based on whether layoffs occurred.

Summary of Findings

When planning this study, I took a broad approach in collecting variables. I did not want to miss any potential relationships between variables or predictors of layoffs because I did not include an easily downloadable, publicly available dataset. In doing so, I compiled 253 variables. Three of my 253 variables presented significant findings concerning the dependent variable. To answer my first question, testing the relationships between independent variables and layoffs, I found that out-of-state student enrollment in the 2019-20 academic year is a weak indicator of layoffs; institutions with fewer out-of-state students were more likely to have also conducted layoffs. Additionally, receiving more federal emergency funding per FTE enrolled student is also a weak indicator of layoffs; institutions that received more funding were also more likely to have conducted layoffs. Both variables have weak but statistically significant relationships with layoffs.

To answer my second question regarding which variables, if any, were statistically significant predictors of layoffs at the HEIs in my sample, I found three variables were significant predictors of layoffs. Institutions with a higher percentage of students receiving Pell Grants in 2019-20 had increased odds of conducting layoffs from March 2020 through June

2023, institutions that did not conduct layoffs had a significantly higher percentage of out-of-state students in 2019-20, and institutions that conducted layoffs had a significantly higher mean total federal emergency funding institutions per FTE enrolled student. The three significant variables will be further discussed in Chapter Five as I discuss the findings, connect them with my theoretical framework, suggest directions for future research, and offer final reflections on my findings.

CHAPTER 5

CONCLUSION: LAYOFFS AND THE STORIES WE TELL: THEMES, THEORETICAL CONNECTIONS, FUTURE RESEARCH, AND FINAL THOUGHTS

After completing the statistical analysis, three variables consistently indicated significant relationships with the dependent variable of whether layoffs occurred within my sample institutions. My study examines the connections between the complex puzzle of institutional finances and layoffs during the COVID-19 pandemic. I tested a large group of 253 total variables, and the three that offered significant relationships to layoffs impact institutional finances uniquely. While the three significant variables are interesting and worth consideration, it is important to emphasize that the three variables have very minimal effect sizes on the dependent variable, with none exceeding 5%. Thus, while I will discuss the implications of these three significant variables, it is important to emphasize that they bore minimal impact on the occurrence of layoffs, meaning that the 253 independent variables largely failed to relate to or predict the occurrence of layoffs during the pandemic. In my literature review, I highlighted the enrollment of students paying varying tuition rates, including those receiving Pell Grants and those attending from out-of-state, as two enrollment considerations that might impact institutional financial health. I also contextualized the role of federal emergency funding during the pandemic as an important source of revenue that offered the possibility of necessary financial security.

Pell Grants

Nationally, 34% of students received Pell Grants in 2023 (Hanson, 2024). Institutions in my sample mirrored this average, with an average of 33.34% in 2022-23. However, the range noted in Table 4.19 suggests that institutions vary widely, with a standard deviation of 12.79%. This suggests that institutions might face differing challenges around financially supporting and retaining students with higher financial needs. Students who receive Pell Grants may still struggle to meet their financial obligations to their institutions, and institutions face decisions around how to support these students (Oliveras, 2023). Pell grants continue to decrease in relation to the total cost of enrollment, and students and institutions are left to fill the gap left behind (Santos & Haycock, 2016). While institutions struggle to meet the financial needs of their students, they may prioritize student financial support over protecting staff and faculty compensation budgets. The results of my statistical analysis found that enrolling a higher percentage of students receiving Pell Grants increased the likelihood of institutions conducting layoffs, suggesting that institutions in these situations must prioritize resources and more frequently chose to lay off faculty and staff as a means of protecting other budgetary priorities, including the enrollment of students receiving Pell Grants.

Institutions with higher percentages of students receiving Pell Grants were more likely to lay off workers during the pandemic, and the current threats to the Pell Grant program put economically vulnerable students and their institutions at greater risk. In May 2025, federal lawmakers debated approaches to slashing funding for Pell Grants as a means of saving money in the Trump administration's signature legislation (Douglas-Gabriel, 2025). Lawmakers are considering requiring heavier course loads for students to receive the highest amount of Pell funding and decreasing the maximum award amounts by $1,685 (Knott & Moody, 2025). Threats to Pell Grant funding, whether they come to fruition or not, set the stage for confusion and risk

dissuading students from pursuing educational opportunities. Institutions enrolling higher than average percentages of Pell-eligible students risk losing their critical enrollment base if Pell-eligible students decline to enroll in college, whether by choice or by circumstance. Enrollment challenges will only exacerbate financial difficulties for HEIs, making layoffs for faculty and staff more likely.

Out-of-State Students

Enrollment of out-of-state students varies drastically within higher education, with institutions placing varying levels of priority on this enrollment metric (Hillman, 2023). Hillman (2023) found that 6% of students at community colleges, 14% at public bachelor's and master's degree-granting institutions, and 24% at public research institutions enrolled from out of state. Within my sample, the average out-of-state enrollment went from 8.34% in 2019-20 to 7.99% in 2021-22, with an average standard deviation across the three years of 11.34%. For many institutions, out-of-state student tuition is an important source of revenue (González Canché, 2017). I found that institutions with higher percentages of students enrolled from out of state were less likely to lay off faculty and staff, suggesting institutions with a robust enrollment of out-of-state students, paying higher tuition rates, might provide the financial security necessary to help institutions stave off faculty and staff layoffs.

The future of enrollment for out-of-state students is unclear. Out-of-state students are a particularly volatile group within broader enrollment trends. Out-of-state student enrollment was trending down before the pandemic and decreased by 4.9% in 2020 (College Board, 2024). Out-of-state enrollment rebounded by 2022 and was up by 5% from 2018 numbers (College Board, 2024). While the rebound in enrollment is good news overall, the increase is not even across the board for states and institutions, and the yo-yo of out-of-state enrollment should give

administrators pause. Enrolling out-of-state students as a stand-alone strategy to meet revenue goals places institutions in a vulnerable position, as enrollment could drop suddenly due to external threats. For example, the federal government's threats to international students' visas put colleges on high alert in May 2025, as many feared actions by the government might hurt enrollment for international students, an important component of many institutions' out-of-state enrollment numbers (Cochran, 2025). Rapid, complex, and contradictory mandates from the Trump administration threaten to stoke fear in international students and intimidate institutions seeking to enroll students from around the world (Cochran, 2025). My research found that institutions with higher percentages of out-of-state students were less likely to conduct layoffs, suggesting that these students provide a level of financial stability for HEIs that, unfortunately, remains a vulnerable source of revenue outside of most institutions' direct sphere of influence.

Federal Emergency Funding

The third variable that bore a significant relationship with layoffs was the combined total of federal emergency relief funding offered in three rounds during the pandemic as a part of the CARES Act. Federal emergency funding was dispersed to higher education during the pandemic to help soften the economic blow of rising costs and decreasing revenue. However, my findings showed institutions that received more emergency funding were also more likely to conduct layoffs. The relationship between federal emergency funding and layoffs felt counterintuitive initially, but further reflection on the realities of CARES funding allocation provides important context on why this correlation may exist.

Jackson and Saenz (2021), Miller (2020), and Sansone (2023) highlighted inequitable allocation of federal emergency funds during the pandemic. Jackson and Saenz and Miller critiqued an overreliance on FTE enrollment as a means of allocating funds, disadvantaging

community colleges or institutions with a large population of part-time students. Sansone asserted HSIs were also disadvantaged by overly simplistic funding allocation systems. Miller argued that no federal funding was enough to cover lost revenue during the pandemic and equip HEIs to adapt to constantly changing safety requirements. While federal emergency funding was intended to help keep HEIs afloat, the relationship between higher amounts of emergency funding and layoffs suggests that emergency funding might not have been enough to support status quo operations for institutions with the greatest financial need. Alternatively, it could also suggest that faculty and staff retention was not a priority for those receiving the most in federal emergency funding, and those HEIs chose to allocate resources elsewhere.

Theoretical Connections

To further analyze the findings of my study, it was helpful to revisit the conceptual framework outlined in Chapter Three. My conceptual framework, Figure 3.1, is represented as an institution upon a hill, upstream from the local community, with a dam that the institution can turn on and off to preserve or release resources. When a financial crisis approaches, institutions must move first to protect themselves and insulate their resources, leaving staff and faculty at the mercy of the institution and vulnerable to the personal financial crisis brought on by layoffs. To build my conceptual framework, I united five theories that explain the organizational and individual actions and power dynamics at play, including academic capitalism, the theory of racialized organizations, the theory of moral credentials, resource dependency theory, and wage dependency theory.

Academic Capitalism

Within the context of my findings, academic capitalism explains the power HEIs have to decide to protect their own financial well-being (Slaughter & Leslie, 1997). Of the 146

institutions in my sample, 89 HEIs, or 60.96%, conducted layoffs during the pandemic. HEIs made swift initial decisions on how to react to the economic panic induced by the pandemic, and academic capitalism empowered them to react, which employees, dependent on the wages they receive for their work, were often beholden to HEIs. In my findings, only three variables – the percentage of students receiving Pell Grants and the percentage of students from out-of-state in 2019-20, and the total federal emergency funding they received – bore significant connections to layoffs, while 60.96% of institutions conducted layoffs, highlight the power of institutions in the context of the pandemic.

Even the manner in which data were collected for this study placed power with the institutions. Data collected through IPEDs and my direct outreach meant that all data was reported by the institutions themselves. No information about layoffs was solicited from faculty or stay who were laid off from the institutions in the sample. While institutions face ethical obligations to report accurate information, the power still lies with them as the source of truth for the data used in this study.

Moral Credentials

With the power established for HEIs within the context of academic capitalism, HEIs were further able to assert the neutrality and objectivity of their actions through the frameworks of racialized organizations and moral credentials (Monin & Miller, 2001; Ray 2019). All institutions included in my sample are non-profit, state institutions with missions that reflected both commitment to their students and to the greater community, as outlined in Table 1.1. The inclusion of moral credentials as a theory within my conceptual framework impacted my decision to focus on public institutions with a range of prestige and diverse enrollments. I was interested in studying institutions that made broad, public promises to serve the public good and

reflected those promises through the communities that they served. My sample included several Research 1, land grant institutions with broad name recognition, as well as rural technical colleges, historically Black colleges and universities (HBCUs), minority-serving institutions (MSIs), and a tribal college. The diversity of institutions and the communities that they serve reinforce the altruistic nature of their missions and the moral credentials that they profess as institutions of public good. The moral credentials flaunted by institutions, including the Kansas Board of Regents (n.d.) pledge to "benefits the State as a whole through economic growth" and California State University's (n.d.) commitment to "provide public services that enrich the university and its communities," help to absolve them of responsibility in conducting layoffs. The broad proclamations HEIs make to assert their role as a public good conflict directly with the economically devastating impact of layoffs, particularly for the individuals and small communities that layoffs can impact. The theory of moral credentials suggests HEIs can shelter behind facades of public good, and that this facade enables them to act in ways that conflict with their stated values, as value statements can absolve institutions of accusations of bias or mission misalignment.

Racialized Organizations

Further, Ray's (2019) theory of racialized organizations goes further to uncover the veil of neutrality with which institutions conducted layoffs. Ray introduced the theory of racialized organizations by asserting that most organizational theories treat organizational structures and processes as race-neutral and thus ignore the critical role that organizations play in shaping racial schemes. The theory of racialized organizations argues that organizations obscure inequitable processes and outcomes through the pretense of bureaucratic objectivity (Ray, 2019). In my results, one variable directly related to layoffs was the percentage of enrolled students receiving

Pell Grants in the 2019-20 academic year. Notably, Pell Grants support students with proven financial need, indicating that institutions with higher percentages of students receiving Pell Grants also have a lower-income student population. Pell Grants are awarded based on financial need without regard to race; however, students of color benefit greatly from Pell grants (National Center for Education Statistics, 2019). 72% of Black students received Pell Grants while only 34% of white students received Pell Grants in 2015-16, the most recent year with published data (National Center for Education Statistics, 2019). While my study does not go so far as to make explicit connections between layoffs and the racial identity of those who lost their jobs, it is inaccurate to suggest that layoffs are not connected to race and social class more broadly. The connection between layoffs, enrolled students receiving Pell Grants, and the racial demographics of Pell Grant recipients problematizes the assertions of objectivity and warrants further inquiry.

Resource Dependency Theory

Resource dependency theory and wage dependency reflect the push and pull of the organizations and employees who both depend on financial resources for survival and come to conflicting positions when faced with scarcity (Perrow, 1991; Pfeffer & Salancik, 2003). RDT suggests that organizations must maintain revenue and resources and act in their own protectionist interests to adapt to external threats (Pfeffer & Salancik). Within my conceptual framework, institutions upon the hill can close the dam to stop the flow of resources down to their workers and community when they deem it is necessary. My findings indicate institutions have very diverse criteria as to when they deem it necessary to "close the dam" or lay off employees and stop the flow of resources downhill. RDT sought to explain the external financial pressures on organizations and their structural reliance on outside revenue, but it did not explain the variation in responses or individual biases and decision-making that lead to divergent

outcomes. With few significant variables in my findings, institutions facing many of the same challenges did not choose prescriptive responses, and RDT does not robustly account for this diversity in response.

Wage Dependence

On the other hand, wage dependency has a more predictable influence on outcomes. Wage dependency posits that workers rely on resources and wages from their employers, thus having less power and leverage in organization/worker arrangements. My study collected data from organizations, not employees, and framed employee separations in terms of organizational action, not employee choice. The inherent assumption in my study was that employees severed during the pandemic were laid off against their will, and that organizations in this arrangement chose to lay off employees as a means of protecting their resources, thus severing resources for workers. With this perspective, and direct questioning around layoffs rather than voluntary separations, my study reinforces the assumption that workers were interested in remaining employed during the early years of the pandemic. While this was largely true in the first year of the pandemic, 2020-2021, voluntary separations increased in the years following (Bischel et al., 2023). Resignations for non-exempt staff rose 9.4% in 2020-21 to 15.2% in 2022-23 (Bischel et al., 2023).Voluntary separations were not the focus of my study. Thus, my results did not speak to this shift. However, it is notable that, as the pandemic wore on, workers became more empowered and began to leave their positions willingly, speaking to a changing power dynamic between employers and workers as the financial crisis of the pandemic stabilized.

Future Research

When I initially brainstormed this research topic, it occurred to me that there is no quantitative research drawing connections between institutions' finances and layoffs. My

quantitative research found that very few variables in my study bore significant relationships or predicted the incidents of layoffs. This finding is interesting because it upends familiar narratives around institutional finances and layoffs. It suggests there are few large-scale trends or factors within institutional enrollment, finances, or staffing that are unilaterally related to or predict layoffs. My findings allow for more nuanced research to uncover localized or institution-specific financial factors that may impact the decision to conduct layoffs. To better interrogate connections between institutional enrollment, finances, and staffing, I recommend case studies to narrow a research focus on a smaller, curated sample of institutions.

Similarly, Brint et al. (2016) suggested a case study approach to studying layoffs in higher education could delve deeper into institutional nuances in a manner that might provide new findings that are not necessarily broadly applicable but are significant nonetheless in explaining layoffs. Notably, a case study could allow for a historical perspective on layoffs. The enrollment, financial, and staffing data available within IPEDS offer a snapshot of specific moments in time but do not reflect the nuances of decades of unique operational challenges that brought each institution to its current situation. Slaughter and Leslie (1997) described the changing financial landscape for higher education in the 1970s and 1980s, Santos and Haycock (2016) offered stark comparisons in state support for higher education into the 1990s, and Rosinger et al. (2022) spoke to the impacts of the Great Recession and its impact on institutions. Meanwhile, Kezar (2004) and Giroux (2002) emphasized the unique history of higher education in the US and its mission which distinguishes it from corporate endeavors. A case study could offer a broader approach to understanding connections located within specific institutional contexts.

Additionally, research might focus more narrowly on the impacts of financial power dynamics with specific state funding structures. My study examined five state systems with varying demographic growth and decline and differing statewide commitment to higher education funding. Studying any one particular state might impact research conclusions. For example, recent news on university closures in the Pennsylvania State system could provide an opportunity for unique, situation-specific conclusions about the connection between institutional and state funding variables, enrollment patterns, and the occurrence of layoffs. Pennsylvania State University (Penn State) (2024) boasted in a press release that university-wide enrollment was steady in the fall of 2024 and retention was up across all Commonwealth campuses. The press release nuanced this information, sharing that enrollment at regional campuses varied, and some struggled to meet enrollment goals (Penn State, 2024). However, despite the overall positive picture painted by the press release, Penn State's Board of Trustees voted to close seven of 19 regional campuses in May 2025, planning a two-year phase-out of operations in these locations (Moody, 2025). While Penn State campuses were not included in my sample, they would offer a worthwhile case study in examining the connections between finances, enrollment, and campus closures, and thus, layoffs, that may offer new conclusions regarding the relationships between variables.

Finally, further research should be done to explore the equity implications of layoffs. Adams-Prassl et al. (2020), CUPA-HR (n.d.), and Nadel-Hawthorne et al. (2021) all found inequitable outcomes for women and people of color during initial COVID-era layoffs and this warrants further study. The limitations of my work did not grant me access to information including *who* those individuals who were laid off include, or the types of positions that were laid off. Obtaining more nuanced information from institutions – not simply whether they

conducted layoffs, but which positions they eliminated and the demographics of the people in those roles – will open the door for a deeper understanding of layoffs and their social implications.

Recommendations for Practice

Beyond the three independent variables highlighted at the top of this chapter – the percentage of students receiving Pell Grants, the percentage of students attending from out of state, and the federal emergency aid received per FTE enrolled student – no other enrollment or financial factor had an broad, significant relationship with layoffs during the pandemic. Even the three variables that did have a significant impact had minimal impacts on layoffs, accounting for no more than 5% of any variance. So, what does this mean for practitioners? Those leading or influencing the decision-making process at HEIs should not feel constrained to making decisions based on prescriptive responses to budget shortfalls. Weisbrod et al. (2010) emphasized that faculty and staff comprise a large part of institutional budgets and are thus obvious targets for budget cuts. During COVID, the Washington Post proclaimed that "Colleges and universities are shedding jobs at an unprecedented rate" (Douglas-Gabriel & Fowers, 2020, n.p.). Institutional leadership may see faculty and staff layoffs as a quick way to trim expenses without making organizational changes; staff and faculty can be cut without institutions needing to do the more complex work of rethinking operations and processes. In the chaos of the pandemic and the rush to find answers to budgetary shortfalls, faculty and staff became collateral damage.

However, my research found that there was no clear, significant connection between enrollment and financial characteristics at HEIs and the decision to layoff faculty and staff during COVID. Institutions in dire financial straits during the pandemic may have protected faculty and staff while seeking other creative solutions to budgetary challenges. Meanwhile,

institutions in relatively stable financial situations may have laid off faculty and staff as a means of reducing expenses and further limiting financial liability. Most institutions lie somewhere in the middle, financially. While not a part of my sample, the University of California, Los Angeles (UCLA), provides a relevant example of a complex financial situation paired with mission-driven leadership and values-aligned decision-making. UCLA's "Principles of Community" emphasize its "land-grant mission of teaching, research, and public service" (UCLA, n.d.). UCLA lists three institutional responsibilities, including Service, where it proclaims, "UCLA reaches beyond campus boundaries to establish partnerships locally and globally" (UCLA, n.d.) During the pandemic, UCLA made good on its promise to the community and upheld its commitment to retain employees (UCLA Newsroom, 2020). UCLA took a creative approach to retaining staff by retraining and reassigning staff whose work on pause during the pandemic (like dining hall staff) to support the institution in other ways (UCLA Newsroom, 2020). Staff were trained to work in the health center to meet growing in that area, or were reassigned to other culinary roles serving the community (UCLA Newsroom, 2020). It is unlikely that retraining and reassigning staff to new roles was an easy or seamless process, but the extra effort and creative thought, driven by UCLA's awareness of their influence and power in the region, allowed hundreds stay employed during the critical months of the pandemic.

UCLA also cited a history of responsible financial stewardship as a critical factor in its ability to retain staff during its $725 million shortfall (UCLA Newsroom, 2020). Campus leaders can take away a few lessons from my research findings and the anecdotal scenario illustrated by UCLA. First, institutional leadership should not jump to the first, or easiest, approach to cost-cutting the moment they experience any uncertainty. While faculty and staff are the seemingly easy target, the human impact of layoffs necessitates a more deliberate and fine-tuned approach

to budgeting. Second, creativity and an eye toward your institutional mission and values should guide decision-making. Leaders should collaborate, take time to make thoughtful decisions that benefit long-term goals, and look outward for examples of creative ways to approach and solve problems. And finally, institutions should prepare for the next financial crisis today. UCLA Chancellor Gene Block emphasized the role of strategic, long-term financial planning in setting the institution up to weather storms like COVID (ULCA Newsroom, 2020). While we can hope that COVID-19's major disruptions are in the past, we know that there are more to come. The more institutions can proactively prepare financially, the more flexibility they will have to make decisions that align with their mission in times of crisis.

Final Thoughts

Conducting research is a meandering and deeply personal journey. In 2017, I was laid off from my job in university housing as part of a reorganization. Having my job eliminated, feeling unnecessary and disposable, moved me. It rattled my relationship with my career and upended my perceptions of myself. Being laid off propelled me toward a doctoral program and inquiry around higher education human resource practices. When I was setting forward on my initial path of inquiry, the COVID-19 pandemic offered new obstacles and inspired new paths of inquiry. I saw thousands of my colleagues worldwide facing the same dejection that I experienced three years prior when my position was eliminated. Pandemic-era layoffs opened old wounds for me and provided new urgency and context for my questions about ethics, mission, and money in higher education.

In 2020, I read the news of layoffs in higher education, and I saw institutions lamenting their financial situations while severing staff left and right. I wondered if it was all true. Did HEIs need to cut faculty and staff to save themselves? Where was the data supporting layoffs?

Were the HEIs with the fewest resources reducing staff? Conversely, were well-resourced institutions using their wealth to protect their employees? My hunch, even in 2020, was no. The findings from this study essentially affirm my suspicion that there was no consistent, overarching narrative about why institutions reduced faculty and staff during the pandemic. Individual institutions and the humans who govern them are more complex than the simplistic narratives around enrollment, endowment, and public funding. My research found very few weak connections between 253 variables and layoffs at 146 HEIs. My work clearly shows that the decision-making around layoffs is complex and localized to individual institutions' specific conditions and priorities.

While the research presented in my dissertation is specific to the COVID-19 pandemic, higher education's financial challenges did not end with the pandemic. Exactly five years after I submitted my first paper on layoffs in my Higher Education Finance course and conceptualized this very dissertation topic, I write my conclusion amidst interchangeable headlines. In April 2020, a Chronicle of Higher Education headline read, "Under Covid-19, university budgets like we've never seen before," with the subheading "Unprecedented times require unprecedented strategies and actions" (Friga, 2020, n.p.). Meanwhile, in March 2025, a headline proclaims, "It's a black hole': Facing the prospect of Trump's cuts, colleges budget with trepidation" (Jesse, 2025, n.p.). Jesse details the financial uncertainty the Trump administration unleashed, describing administrators "facing a nearly unprecedented budget season" (n.p.). After years of "unprecedented" challenges, the similarity of these headlines is disheartening. I feel hopeless at times, thinking about the future of higher education. However, I see opportunities for institutional reflection and growth in my dissertation findings.

My findings point to only three institutional characteristics that bore a consistent, significant relationship with layoffs, and any variable's impact on the outcome of layoffs never exceeded 6%. Those three variables – the percentage of enrolled students from out-of-state in 2019-20, the percentage of enrolled students receiving Pell Grant in 2019-20, and the amount of federal emergency aid money distributed per FTE enrolled student – presented intriguing connections to layoffs that warrant further study. However, my findings also suggest that within the context of commonly held narratives and logics around layoffs, there is no singular connection between financial indicators and layoffs.

Results of my study provide an opportunity for the reimagination and reframing of the tired institutional responses to the financial panic of 2020. Suggesting a critical approach to organizational theory, Gonzales et al. (2018) asserted, "although some practices and policies have become normalized...they are not necessarily sound or just, nor are they neutral just because they are organizational goals" (p. 523). Results from my study illustrate that layoffs are not the inevitable consequence borne by institutions with a prescriptive set of financial circumstances. My findings open the door to future research and to bespoke, creative approaches to financial management on the part of HEIs. My findings can liberate higher education leaders and decision makers from prescriptive, reactive, and unimaginative responses to financial challenges and empower critical, creative thought that can drive mission-aligned decision making.

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APPENDIX A: Complete List of Independent Variables

Enrollment Variables 2019-20, 2020-21, 2021-22	Reported FTE undergraduate enrollment Reported FTE graduate enrollment Reported FTE doctors professional practice Number of students in fall cohort Students in fall cohort as a percentage of all undergraduates Total number of undergraduates - fall cohort Number of students in fall cohort who are paying in-district tuition rates Percentage of students in fall cohort who are paying in-district tuition rates* Number of students in fall cohort who are paying in-state tuition rates Percentage of students in fall cohort who paying in-state tuition rates Number of students in fall cohort who are paying out-of-state tuition rates* Percentage of students in fall cohort who are paying out-of-state tuition rates Number of students in fall cohort whose residence/tuition rate is unknown* Percentage of students in fall cohort whose residence/ tuition rate is unknown Number of undergraduate students awarded Pell grants Percent of undergraduate students awarded Pell grants* Total amount of Pell grant aid awarded to undergraduate students Average amount Pell grant aid awarded to undergraduate students
Financial Variables - 2019-20, 2020-21, 2021-22	Tuition and fees after deducting discounts and allowances Federal operating grants and contracts State operating grants and contracts Sales and services of auxiliary enterprises* Sales and services of hospitals Local/private operating grants and contracts Independent operations Other sources - operating Total operating revenues Federal appropriations* State appropriations* Local appropriations education district taxes and similar support* Gifts including contributions from affiliated organizations*

	Investment income*
	Federal nonoperating grants
	State nonoperating grants
	Local nonoperating grants
	Other nonoperating revenues
	Total nonoperating revenues
	Total operating and nonoperating revenues
	Capital appropriations
	Capital grants and gifts
	Additions to permanent endowments
	Other revenues and additions
	Total other revenues and additions
	Total all revenues and other additions
	Local operating grants and contracts
	Private operating grants and contracts
	Sales and services of educational activities
	Are intercollegiate athletic revenues included with sales and services of educational activities*
	Are intercollegiate athletic revenues included with sales and services of auxiliary enterprises*
	Are intercollegiate athletic revenues included with a source other than educational activities or auxiliary enterprises*
	Endowment per FTE enrolled student*
Employee Demographics - 2019-20, 2020-21, 2021-22	Faculty - total
	Faculty - Grand total men
	Faculty - Grand total women
	Faculty - American Indian or Alaska Native total
	Faculty - Asian total
	Faculty - Black or African American total
	Faculty - Hispanic or Latino total
	Faculty - Native Hawaiian or Other Pacific Islander total
	Faculty - White total
	Faculty - Two or more races total
	Faculty - Race/ethnicity unknown total
	Faculty - U.S. Nonresident total
	Staff - total
	Staff - Grand total men
	Staff - Grand total women
	Staff - American Indian or Alaska Native total
	Staff - Asian total
	Staff - Black or African American total
	Staff - Hispanic or Latino total
	Staff - Native Hawaiian or Other Pacific Islander total

	Staff - White total
	Staff - Two or more races total
	Staff - Race/ethnicity unknown total
	Staff - U.S. Nonresident total
Federal Emergency Funding Variables	Allocations for CARES Act 18004(a)(1)
	Allocations for CARES Act 18004(a)(2)
	Allocations for CARES Act 18004(a)(3)
	Allocations for CRRSAA HEERF II 314(a)(1)
	Allocations for CRRSAA HEERF II 314(a)(2)
	Allocations for CRRSAA HEERF II 314(a)(3)
	Allocations for ARP HEERF III 2003(a)(1)
	Allocations for ARP HEERF III 2003(a)(2)
	Allocations for ARP HEERF III 2003(a)(3)
Generated Variables	Total federal emergency funding*
	FTE total enrollment 2019-20*
	FTE total enrollment 2020-21*
	FTE total enrollment 2021-22*
	Total FTE enrollment change 2223/1920
	Tuition revenue per FTE 2019-20
	Tuition revenue per FTE 2020-21
	Tuition revenue per FTE 2021-22
	Total emergency funding/total FTE enrollment 1920*
	Faculty changes 2223 - 1920
	Staff changes 2223-1920
	Total FTE enrollment change 2223 - 1920
	% Pell change 2223 / 1920
	# Pell change 2223 / 1920
	Federal appropriations 2122 - federal appropriations 1920
	State appropriations 2122 - state appropriations 1920
	State appropriations 2122 / FTE enrollment 2122
	State appropriations 1920 / FTE enrollment 1920
	State appropriations 2122 / state appropriations 1920

Note. *Independent variables included in Table 3.8