

UNDERGRADUATE EMPLOYMENT, ACADEMIC PERFORMANCE AND DEBT ACROSS UNIVERSITIES IN THE AMERICAN NORTHEAST: AN EXPLORATORY STUDY

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Abstract

The increasing costs of education in the United States and the substantial population of employed undergraduate students raise important questions regarding the intersection of employment, student debt, and academic outcomes across institutional contexts. Previous research has largely established a negative relationship between student employment and academic performance; however, the existing body of research pays limited attention to how this relationship varies across institutions and to the mitigating effects of employment on student debt. This study draws from an institutional perspective to examine whether university environment moderates the effects of student employment on academic performance and whether employment impacts students' projected debts upon graduation. Two research questions guide our investigation: (1) Does employment differently affect the academic performance of undergraduate students attending universities with varying levels of selectivity? (2) Do employed undergraduate students project to graduate with less debt than their unemployed counterparts? Employment may shape academic outcomes by constraining students' time, cognitive bandwidth, and engagement with instructional activities, rather than directly impairing learning ability – particularly for low-income students, who prior studies indicate are more likely to work full-time. This study employed a cross-sectional, quantitative research approach, where students from four schools in the American Northeast – including a community college, state university, and highly selective private university – reported weekly employment hours, academic outcomes, and financial expectations. A regression-based analysis model was applied to determine the strength and significance of the relationships between key variables. The results of this exploratory study suggest that the examined relationship between employment and academic performance may be more contextually nuanced than previous research suggests, as no clear relationship between employment and academic performance was observed at any of the universities studied. However, the employed students in this sample expected 38% less debt at graduation compared to their unemployed counterparts, suggesting student debt may be an educational outcome influenced by extracurricular employment. This study's findings contribute to the scholarship covering learning and inequality in four ways: they demonstrate that the academic consequences of undergraduate employment are institutionally dependent rather than universal, refine assumptions about the academic risks of student employment, extend learning and education research by classifying projected student debt as a meaningful educational outcome, and highlight the importance of institutional conditions in shaping how employment intersects with learning and financial well-being. These insights offer important implications for educators, administrators, and policy makers seeking to more effectively support working undergraduates.

Keywords: *Student employment, student debt, academic performance, institutional selectivity, access to higher education.*

1. Introduction

Over the past 25 years, the cost of attending university in the United States has been steadily rising, with the National Center for Education Statistics (NCES) releasing data that shows costs in 2023 were nearly 60% greater than costs in 2000 (2023). While working a job alongside pursuing their college degree can be a helpful way for students to cover costs of tuition, housing, supplies, and other living expenses (Bureau of Labor Statistics, 2013), studies have shown that there may be notable academic downsides to extracurricular employment – especially employment exceeding 20 hours per week (Pike et al., 2008; Sims et al., 2024; Tessema et al., 2014). According to NCES data, 25% of full-time students and 66% of

part-time students work at least 20 hours weekly (2022). And since grade point average (GPA) is a commonly used metric for company hiring decisions (Dipboye et al., 1975; Roth et al., 1996), it is critical to know what factors play a role in mediating this relationship and how employment can differently affect the students of diverse economic backgrounds' academic outcomes and if that effect varies across different universities.

Previous research has established a negative relationship between employment and academic performance on the macro scale, but there is little data showing how these relationships present themselves differently across multiple samples or campuses (DeSimone, 2008; Ecton et al., 2023; Pike et al., 2008; Yanbarisova, 2015). DeSimone (2008) created a regression to estimate the effects of employment on academic performance of the students involved in the Harvard College Alcohol Study controlled for gender, age, year, health status, maternal schooling, religious background, and race/ethnicity. His regression model returned that each additional hour of work decreased GPA by 0.011 points. Ecton and colleagues (2023) conducted a longitudinal study where they collected Tennessee college enrollment and performance records between 2001 and 2007 before comparing it to employment data from the Free Application for Federal Student Aid (FAFSA) to determine the impact employment has on Tennessee college students' academic performance. Pike and colleagues used ANOVA and ANCOVA regression models to analyze data from the 2004 National Survey of Student Engagement. The findings showed that working less than 20 hours per week on campus was indirectly associated with statistically significant increases in GPA, while working more than 20 hours per week was directly associated with statistically significant decreases in GPA. Pike's study controlled for gender, standardized test scores, first-generation student status, and on/off campus living. Yanbarisova (2015) conducted a regression analysis on student data from Tatar universities and found that field related, part-time employment may positively impact student performance, whereas full-time jobs unrelated to the students' field of study negatively impacted academic performance. Notably, none of these studies covered how the relationship between employment and performance manifests itself across the different universities involved in their datasets.

GPA is a considered factor when employers make their hiring decisions (Dipboye et al., 1975; Quadlin, 2018). Dipboye et al. (1975) set out to find discrimination based on sex and appearance in hiring decisions. The research team created 12 resumes differing only in work history and academic performance. The team then attached photos of male and female individuals, whose attractiveness levels were rated in a previous study, to each of the resumes. The research found that regardless of sex or attractiveness, applicants with higher GPAs and more extensive work experience were rated as more qualified than those with lower academic stats or less work experience. Quadlin's 2018 study aimed to determine the impact of gender and academic performance on hiring decisions. Quadlin created 2,106 resumes that had randomly generated gendered names and GPA scores between 2.50 and 3.95 while holding all else equal. Her study found that applicants with GPAs between 3.21 and 3.59 got the most callbacks, hearing back 16.3% of the time, whereas applicants with GPAs between 2.50 and 2.83 got called back the least, with recruiters contacting them 9.6% of the time – a 41% decrease. Though her study didn't establish a straight-line correlation between GPA and hiring rates, it did establish a significant decrease in hiring rate based on lower GPAs.

Because lower-income students are more likely to be employed full-time than their higher income counterparts (Carnevale & Smith, 2018), and employment negatively impacts GPA, which is used in hiring decisions, the purpose of this study is to provide underprivileged students with key information that will allow them to build more informed educational strategies. This study also aims to fill the gaps in the body of research relating to employment and academic performance by testing whether university prestige mediates the relationship between employment and academic performance.

This study asks two research questions: Does employment differently affect the academic performance of undergraduate students attending universities with varying levels of selectivity? And do employed undergraduate students project to graduate with less debt than their unemployed counterparts? This study holds the hypotheses that employment will more severely affect the academic performance of students attending more selective/prestigious universities and that employed students will graduate with more debt than unemployed students.

2. Methods

This exploratory study employed a quantitative approach to research. 116 students from four different colleges in the American Northeast were surveyed. This study defines prestige as a function of selectivity, Ivy League status, and "Ivy Plus" status. The schools involved in this stage of research were Johns Hopkins University, an "Ivy Plus" institution with a 7.6% acceptance rate, Rutgers New-Brunswick, a flagship state-school with a 65.3% acceptance rate; Kean University, a public university with a 76.9%

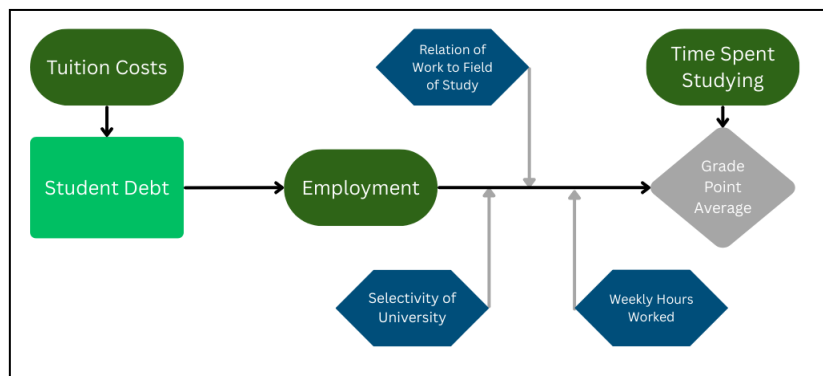
acceptance rate; and Union County College, a community college with an open admission policy (100% acceptance rate).

The surveys collected information covering demographic data (sex, age, race, course credits completed, and employment status), employment data (on/off campus work, work related/unrelated to field of study, and weekly hours worked), academic data (major, full-time vs part-time student status, academic accommodations, and GPA), behavioral data (hours of sleep per night, weekly hours of exercise, weekly hours spent studying, and weekly hours spent socializing), and financial data (out-of-pocket tuition, full-ride scholarships, need-based aid, student loans, cost of education's role in employment decisions, household income, and total accumulated debt).

R was used to create regression models establishing the overall relationships between the following variables: weekly hours worked, tuition costs, time spent studying, time spent socializing, weekly hours of exercise, nightly hours of sleep, GPA, and projected student debt. Then the same was done for each school individually to determine how the relationships vary by school.

This analysis was conducted following the hypothesis that tuition costs would mediate the presence of student debt; student debt would mediate the amount of hours worked per week; employment would mediate GPA, moderated by the relativity of employment to a student's field of study, the selectivity of the university, and weekly hours worked per week; and time spent studying would directly mediate GPA. Figure 1 demonstrates the hypothesized chain.

Figure 1. Flowchart representing the hypothesized relationships between variables.

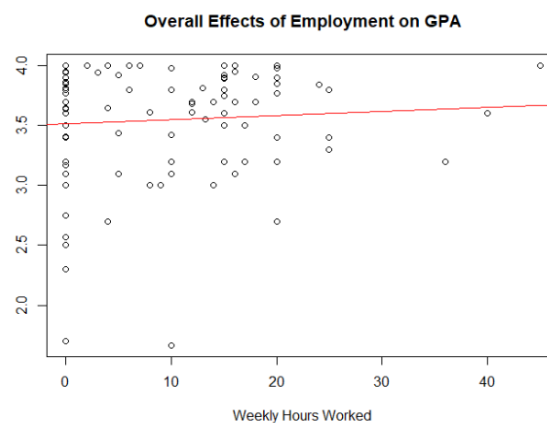


3. Results

Upon evaluation, 14 participants' data was removed to account for item nonresponse, leaving a sample size of $N = 102$. Due to the small sample size, these results were calculated using a confidence interval of $P < 0.1$ rather than the more standard $P < 0.05$.

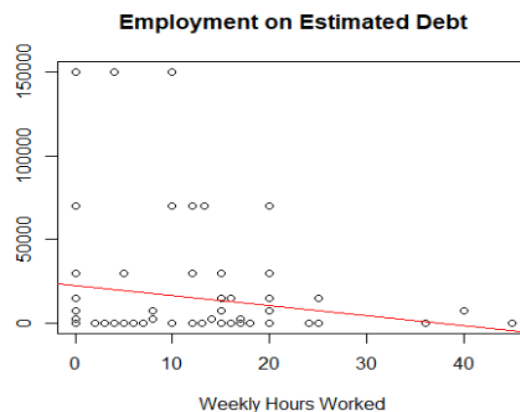
A linear regression mapping the overall relationship between employment and GPA returned a P-Value of $P = 0.4217$, with analyses at individual schools returning similar non-results (Johns Hopkins, $P = 0.5935$; Rutgers, $P = 0.7503$; Kean, $P = 0.9244$; Union County College, $P = 0.5917$). Given there was no significant relationship between GPA and employment, none of the subsequent moderators for this dimension could be accurately tested.

Figure 2. Plot of GPA and Weekly Hours Worked.



To address the second research question, linear regressions were conducted at a 90% confidence level. These regressions aimed to find the relationships between tuition, weekly hours of work, and expected debt upon graduation. The data did not support two hypotheses. First, a linear regression of weekly hours worked and estimated debt returned that for each additional hour spent working per week, students projected a \$606.60 decrease in debt ($P = 0.09544$). This is the inverse of the primary debt hypothesis that assumed unemployed students would project less debt. Second, tuition costs did not mediate the amount of projected debt, with a linear regression returning $P = 0.4122$, and a multiple regression including the effects of tuition and weekly hours worked returning a higher P-Value than a standard regression comparing only estimated debt and employment ($P_1 = 0.09544$, $P_2 = 0.1556$). A direct comparison between the average estimated debt of employed students and unemployed students finds that unemployed students expect an average of \$22,092.81 in debt upon graduation whereas employed students projected an average of \$13,771.03, amounting to a nearly 38% decrease.

Figure 3. Plot of Estimated Debt and Weekly Hours Worked.



4. Discussion / conclusion

These results have laid the foundation for a future project examining student debt in more detail. Despite a weakly significant P-Value, the R squared result is a 0.027, suggesting that there are likely many other variables responsible for the variation in projected student debt which weren't represented with this preliminary sample. Future renditions of this study aim to collect data from a larger pool of students to provide more statistically significant results, incorporate a wider set of survey questions (particularly covering household income) to capture more accurate and detailed student debt data, and add more universities to the sample to allow for wider cross-comparisons between university environments. As of writing this manuscript, a future study is under board review.

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