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By Henry Tran and Douglas Smith

Studies of community college finance often focus on revenue sources from the state and local government, private foundations, and tuition. While these resources are important, an often-neglected source of revenue is employer-sponsored educational assistance benefits for students. Given the dearth of literature on the benefits of this funding source, especially for community college students, our study shines light on the topic. Specifically, this study reports on the impacts of Section 127 of the Internal Revenue Code, employer-sponsored educational assistance benefits, on degree-seeking public community college student outcomes based on a propensity score matching analytic strategy. Our results suggest that the majority of two-year public college students (over 90%) do not receive these educational assistance benefits, but those who do have better retention and attainment outcomes than a comparable group that do not. Because we did not find an impact of employer-sponsored educational assistance benefits for more immediate outcomes (such as GPA and total credit hours by the end of students' first year), the evidence suggests that employer-sponsored educational assistance benefits positively impact longer-term student outcomes rather than more immediate ones. Our findings have potential implications for student aid policies, especially as they relate to improving the awareness, advocacy and availability of employer-sponsored educational assistance benefits and support, as well as encouraging further investment from employers or legislation promoting to promote its use.

Keywords: *Section 127 employer aid, employer-sponsored tuition aid, tuition aid, community colleges, financial assistance*

Student completion rates for two-year colleges remain low despite recent attention and efforts targeted toward their improvement[1]. Based on National Center of Education Statistic's (NCES) 2003-04 persistence and attainment data, less than 46% of community college students who enrolled with the goal of earning a degree or certificate actually attained that goal, are still enrolled, or transferred to a baccalaureate institution after six years (Radford, Berkner, Wheeless, & Shepherd, 2010).

In the broader higher education context, about 40% of undergraduates work at least 30 hours per week and 25% of all working students attend college full time while employed full time (Carnevale, Smith, Melton, & Price, 2015). Similarly, Kena et al. (2016) reported that 42% of full-time students at two-year public institutions were employed between 2000 and 2013. Among part-time students, 71% at two-year public institutions were employed, with 31% working 35 or more hours per week. Like the overall community college student population, students employed while attending college have low persistence and attainment rates (Monaghan & Attewell, 2015). For those who do complete college, external support often plays a pivotal role in enabling that success (Carnevale et al., 2015).

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Of the numerous support components for working students, Carnevale et al. (2015) identified tuition assistance as the most important because "in the absence of financial support from an external source, such as need-based grants, parental support, or student loans, the majority of workers simply could not afford the cost of tuition and fees for postsecondary enrollment each semester" (p. 20). Indeed, empirical work has consistently demonstrated evidence for a positive impact of financial support on college completion (Bound, Lovenheim, & Turner, 2010; Castleman & Long, 2013).

One source of tuition aid support that many community college students can potentially take advantage of is employer-sponsored tuition assistance. Employers of all sizes and types offer educational assistance benefits to their employees to promote college attendance and completion. These employers range from small family-run companies to large publicly held corporations. In recent years, organizations like Starbucks (Rooney, 2015) and Chipotle (Durando, 2015) have generated much media attention for their development and offering of educational assistance benefits to their employees. Section 127 of the Internal Revenue Code (26 USC §127; hereafter, "Section 127") encourages these benefits by allowing employers to provide employees with up to $5,250 in annual educational assistance benefits excluded from the employees' taxable income for associate-, undergraduate-, or graduate-level study (Internal Revenue Code, Educational Assistance Programs 2012).

Because the benefits of Section 127 are not as well publicized as other sources of student support (e.g., Federal Pell Grants), this paper provides a brief history along with background information to contextualize this study. Section 127 originated as part of the Revenue Act of 1978 as a five-year trial and has been extended numerous times, which at times resulted in short gaps in tax-free status that were retroactively filled when extended by Congress. The original 1978 legislation included no maximum benefit limitation, which reflects the lower cost of higher education 35 years ago. In 1984, Congress extended Section 127 and established a $5,000 maximum tax-free benefit. In 1986, the extension included an increase from $5,000 to $5,250 in the allowable tax-free benefit. The allowable tax-free benefit has remained unchanged for the last three decades. In 2012, The American Taxpayer Relief Act permanently extended Section 127 (Internal Revenue Code, 2012), which means Section 127 benefits are no longer susceptible to gaps pending renewal or non-renewal by Congress.

Before implementation of Section 127 in 1978, only job-related educational assistance from employers was exempt from taxable income. Jones (2010) explained that Congress addressed three broad policy goals by establishing Section 127: reducing uncertainty over what is considered "job-related" education, simplifying the tax code by eliminating the need for case-by-case determination of the job relevance of each course, and promoting upward mobility by removing the burden on employees—often those least able to pay out of pocket—of paying tax on educational assistance received from employers.

Educational assistance benefits under Section 127 include, but are not limited to, employer aid toward tuition, fees, books, supplies, and equipment. Benefits do not include payment for tools or supplies, meals, lodging, or transportation. Educational assistance also does not include payment for courses involving sports, games, or hobbies.

Section 127 stipulates that employers must have a written plan if they choose to offer educational assistance benefits to employees. According to Manchester (2008), such a written plan usually consists of (1) a maximum reimbursement amount, (2) an eligibility requirement, and (3) a reimbursement policy. While employers are not required to provide Section 127 benefits, those who do must make these benefits available to all employees on a non-discriminatory basis. For example, these benefits may not favor highly compensated employees like corporate executive officers over general office staff. However, this does not limit employers from restricting program participation. For example, employers may limit the program to only those employees who have worked for the company for a minimum of one year. Nor does this prevent

employers from setting eligibility requirements, such as maintaining a minimum standard academic performance to receive the full benefits. Newman and Stein (2003) determined that 90% of over 500 firms surveyed had some sort of a minimum grade standard for reimbursement, most commonly a "C" or better, and many employers tied the grade earned to a reimbursement percentage received. Section 127 does not restrict employers from other caveats to their educational assistance benefits program, such as specifying a percentage of eligible costs that the employer will pay (i.e., a maximum reimbursement amount).

Manchester (2008) notes that the two primary reasons that employers participate in educational assistance programs are to promote employee recruitment and retention. Employers that offer education assistance benefits to employees under Section 127 are making a calculated investment in their employees. With any investment, there is risk. Within this context, there is the risk that an employee will utilize these benefits and then leave the company. As a result, some employers implement reimbursement caveats to protect this investment, such as a policy seeking reimbursement from employees who terminate employment before a specified period. For example, employees who terminate employment before the specified period ends (e.g., three years) may be required to reimburse some or all of the benefit received.

In sum, when employers invest in employees through Section 127 educational assistance benefit programs, they are investing in human capital to see a long-term return (e.g., increased productivity or performance). The idea here is that an employer that provides and encourages educational advancement opportunities for employees is more likely to attract and retain qualified and ambitious employees. This reasoning fits within a growing movement promoting human capital as a critical factor in an organization's success (Skaggs & Youndt, 2004; Riley, Michael, & Mahoney, 2017). Specifically, investing in current employees may offer one of the best returns on investment toward creating and sustaining an advantage over competitors (Luthans & Youssef, 2004).

Recently, the Lumina Foundation (2016) published the first in a series of reports aimed at better understanding the return on investment of major employers' educational assistance benefit programs. This first report concluded that global health service provider, Cigna, helped to control talent management costs through its educational assistance benefit program, saving approximately $1.29 in human resource costs for every $1 spent on its educational assistance benefit program while creating internal opportunities for employee wage gain and career advancement. For Cigna, the educational assistance benefit program added value for both the employer and the employee. Employer-paid educational assistance benefits were made possible by Section 127.

In addition, a 2010 report from the Society for Human Resource Management (SHRM) and the National Association of Independent Colleges and Universities (NAICU; Jones, 2010) examined the recipients of employee education assistance under Section 127. The report draws attention to several key statistics. For example, over 900,000 students received Section 127 benefits during the 2007-08 academic year, with over half of recipients being undergraduates and 31% attending public two-year institutions. The average age of undergraduate recipients was 37 years old and the average annual earnings of undergraduate recipients was $33,707. The average Section 127 benefit received was $2,700, with just over half (51%) of employers offering these benefits in the for-profit sector (Jones, 2010). Currently, the median community college graduate (age 25 and older) earns an annual salary of $42,588 and the median annual salary for an individual with some college, no degree or certificate completion is $39,312 (U.S. Department of Labor, Bureau of Labor Statistics, 2017).

Faulk and Wang (2014) explored the demographic of undergraduate students who receive employer-sponsored aid using NPSAS:08 data to better understand the types of students that receive financial aid. They compared demographic, socioeconomic, academic, and financial aid characteristics of students who receive employer-sponsored educational assistance benefits to those who receive traditional financial aid and

those who receive no aid or benefits. Faulk and Wang found that students receiving employer-sponsored educational assistance benefits were older, more likely to be married, had more children, and were more likely to be business or management majors than others. Further, they found that students receiving employer-sponsored educational assistance benefits had higher individual and household earnings from work while attending school and received less federal and institutional aid (excluding employer-sponsored aid) than students receiving traditional financial aid or no aid. Students receiving employer-sponsored aid were also more likely to take out student loans (i.e., all loans, federal or private) than students receiving no aid, and less likely to take out student loans compared to students receiving traditional aid. Lastly, Faulk and Wang found that students receiving educational assistance benefits were more likely to have parents with only a high school diploma.

Research on why employers offer education assistance benefits and the types of students who receive such benefits is important, but from the student perspective, the literature leaves a void concerning the most critical outcome: college completion. Our work aims to help fill that void. Positive findings for the impact of employer-sponsored education assistance benefits on college completion would justify further investment in such financial support for students, not only for employee retention and workforce productivity interests on the employer side, but also for academic outcomes on the student end as well.

Purpose

While few studies provide empirical research on the influence of tax benefits in general on college student outcomes (Elsayed, 2016), virtually no scholarly work exists on the specific impact of Section 127 for community college students. As of September 2016, typing in "Section 127" and "Employee Education Assistance" in research databases spanning across numerous fields and disciplines ("Business Source Complete" for business, "EconLit" for economics, "JSTOR" for sociology and "Education Source" and "ERIC" for education) yielded no peer-reviewed articles specifically devoted to the subject. Most of the few resources found included articles in magazines and practitioner journals. Furthermore, while the SHRM and NAICU (Jones, 2010) report and Lumina Foundation (2016) report are informative, these reports did not focus on community colleges students, but rather on higher education as a whole, and they did not use student outcomes as a focal point.

Our work refines this prior research to focus specifically on students in two-year public institutions. The purpose of this study is to examine the impacts of employer-sponsored educational assistance benefits from Section 127 on community college student outcomes. These outcomes include students' retention and attainment, grade point average (GPA), and credit hours.

A simple cost-benefit or human capital theory framework helps us understand why employer-sponsored educational assistance benefits could be influential for community college outcomes. Specifically, if students are more likely to complete college when the value of the benefits of completion exceed the costs of attending, then tuition assistance can be impactful given that it reduces the cost of completion (Elsayed, 2016). The impact of financial assistance may be particularly influential for low-income community college students (Mullin, 2012), who have been shown to be more sensitive to college pricing (McKinney & Burridge, 2015) and therefore may be more influenced by financial incentives to improve academic progress (Barrow, Richburg-Hayes, Rouse, & Brock, 2014).

Methods

Like Elsayed's (2016) work, our study used the Beginning Postsecondary Students Longitudinal Studies (BPS) data set, obtained from the NCES, in conjunction with the propensity score matching methodology

(which will be discussed in more detail later in this paper) to determine the impact of education tax benefits on college student outcomes. However, our work differed from Elsayed's research in several important ways.

First, while Elsayed's study focused on income-based tax credits, our work targeted the impact of employer-sponsored tuition aid, a much less researched area. Second, while his work looked at outcomes from students attending four-year colleges, our work focused on the public two-year sector. This sector is especially important to study given that public community colleges enroll nearly 40% of all undergraduate students in the United States (Kena et al., 2016), and educate the larger share of underrepresented students (48% non-White) relative to the public four-year sector (39% non-White; (Kena et al., 2016). Third, while Elsayed's work uses the BPS as its main data source, we drew the data for this study from merged, restricted-use data sets from both the BPS and the National Postsecondary Student Aid Study (NPSAS), obtained from the NCES. These data contain financial, pre-college characteristics and other demographic information from a nationally representative cohort of beginning postsecondary students in 2003-04, with follow ups at the end of their first year, third year (2005-06), and sixth year (2008-09) after initial enrollment to capture their postsecondary persistence, attainment and post-graduation outcomes. First-time postsecondary students include both traditional students who attended higher education immediately after high school and nontraditional, older students who delayed college attendance. The 2003--04 to 2008-09 cohort represents the most recently available NPSAS/BPS study data as of this writing and is the reason we chose to focus on this group of students.

NCES obtained the data from multiple sources, including institutional records, student interviews, and other administrative databases. We delimited the sample to only students who started in the base year of 2003-04 at a public community college (n = 5,201), to follow a complete cohort until six years after initial enrollment. The dataset uses a two-stage sampling method that first samples higher education institutions across their types (e.g., two-year public institutions), selecting institutional samples proportional to their measure of size and then sampling students within those sample institutions, stratified by type (e.g., undergraduate students). As mentioned, we refined our focus and analysis to only students at two-year public institutions given the purpose of our paper. More information about the data can be obtained from Cominole, Siegel, Dudley, Roe, and Gilligan (2004), Wine, Janson and Wheeless (2011), and Wine, Bryan, and Siegal (2013).

Because institutions and students did not have an equal probability of selection, we used a replication-based variance estimation technique in conjunction with NCES-provided sampling weights to compute statistically weighted estimates that reflect the sampling design. This allowed us to estimate population parameters and obtain correct p-values (i.e., the analysis does not carelessly assume data were obtained from a simple random sample and adjusts the standard errors accordingly). Results are therefore statistically weighted to adjust for the fact that not all students have an equal chance of being sampled given the differential proportion of types of students and higher education institutions in the population (we assigned a lower weight to those with a greater chance of being sampled). The data represent the population from which they are derived, i.e., students from institutions that participate in the Title IV federal student aid programs under a participation agreement with the U.S. Department of Education. In this study, we define employer-sponsored educational assistance benefits as tuition aid from either the employers of the parents *or* students. We chose this definition over restricting the definition to just tuition aid from students' educational assistance benefits because we were interested in the influence of *any* type of employers' aid on student outcomes. Furthermore, the strong correlation between student employer aid and student or parents' employer aid (r = .8, p < .0001) suggests that our study's main findings would be similar regardless of which definition we used. This is because only 1% of the sample (n = 75) of students received benefits from their parents' employee educational benefits. Therefore, we opted with a more inclusive definition of employer-sponsored educational assistance benefits.

Most first-year, public community college students did not receive employer-sponsored educational assistance benefits (94.77% that did not vs. 5.23% that did), and those employed full-time had only slightly different percentages (90.7% that did not vs. 9.28% that did). Across the entire unmatched dataset, those who had received employer aid were 2.7% less likely to be no longer enrolled with no degree/certificate, and 2.6% more likely to have transferred with an associate degree to a four-year institution than students who did not receive employer aid. The sample of students was composed of 43.28% males and 56.72% females. Descriptive information concerning students' educational assistance benefit amounts and their academic and other financial background information are available in Table 1.

Students received an average of $52.89 in employer aid; however, this amount is positively skewed (i.e., downwardly biased) because of the large number of students who did not receive any aid from employers. Among those who received aid, the average amount was $1,011.80 for the 2003-04 academic year. Table 2 lists the percentages of students by race and region of first higher education institution to provide a clearer understanding of the sample.

Finally, Table 3 provides more student background information, including percentages of parental levels of education for student respondents. As can be seen, the modal parental education level is high school diploma or equivalent.

To provide a deeper understanding of the type of community college students who receive educational assistance benefits, we examined benefit recipients by their major field of study. Of those who declared their major or were in a degree program, students who majored in business management composed the largest percentage of those receiving educational assistance benefits followed by health majors (see Figure 1).

Table 1

Descriptive Statistics for the Sample of First-year Public Community College Students (n = 5,201)

	Minimum	Maximum	Mean	*SD*
Employer tuition aid amount	0	10,000	52.89	317.52
Age	15	72	23.59	9.04
GPA (2004)	0	4.0	2.88	.85
SAT I combined verbal and math score [a]	410	1,560	897.98	172.59
Adjusted gross income (2003-04)	0	454,506	46,454.36	44,456.00
Total student budget [b]	1,337	26,838	6,615.08	3,362.16
Federal Pell Grant	0	4,050	611.74	1,159.56
Total grant	0	24,428	1,085.88	1,903.77
Total loan	0	30,800	340.22	1,245.47

Note: Statistics are student weighted.
[a] n = 2,865 for the SAT Test score variable because not all first-year community college students are required/have taken the SAT prior to enrollment
[b] n = 4,854

Table 2

Percentages of Students' Race Identification and Institution Region

Race and Institution Region	Percent
Student's race	
Caucasian	60.86
African American	13.90
Hispanic/Latino	15.61
Asian	4.44
American Indian/Alaska Native	.69
Native Hawaiian/Other Pacific Islander	.35
Other	1.55
More than one race	2.61
Region of student's institution (2003-04)	
New England	2.51
Mideast	10.40
Great Lakes	20.15
Plains	7.20
Southeast	21.74
Southwest	15.72
Rocky Mountains	1.00
Far West	21.26
Puerto Rico	.02

Note: Regions are defined as follows: New England (CT ME MA NH RI VT); Mideast (DE DC MD NJ NY PA); Great Lakes (IL IN MI OH WI); Plains (IA KS MN MO NE ND SD); Southeast (AL AR FL GA KY LA MS NC SC TN VA WV); Southwest (AZ NM OK TX); Rocky Mountains (CO ID MT UT WY); Far West (AK CA HI NV OR WA)

Table 3

Percentage of Parents' Highest Education Level

Parents' highest education level	Percent
Did not complete high school	8.90
High school diploma or equivalent	31.90
Vocational or technical training	4.57
Less than two years of college	8.31
Associate degree	8.41
Two or more years of college but no degree/certificate	6.44
Bachelor's degree	16.80
Master's degree or equivalent	8.66
First professional degree	0.76
Doctoral degree or equivalent	1.95
Unknown education level	3.29

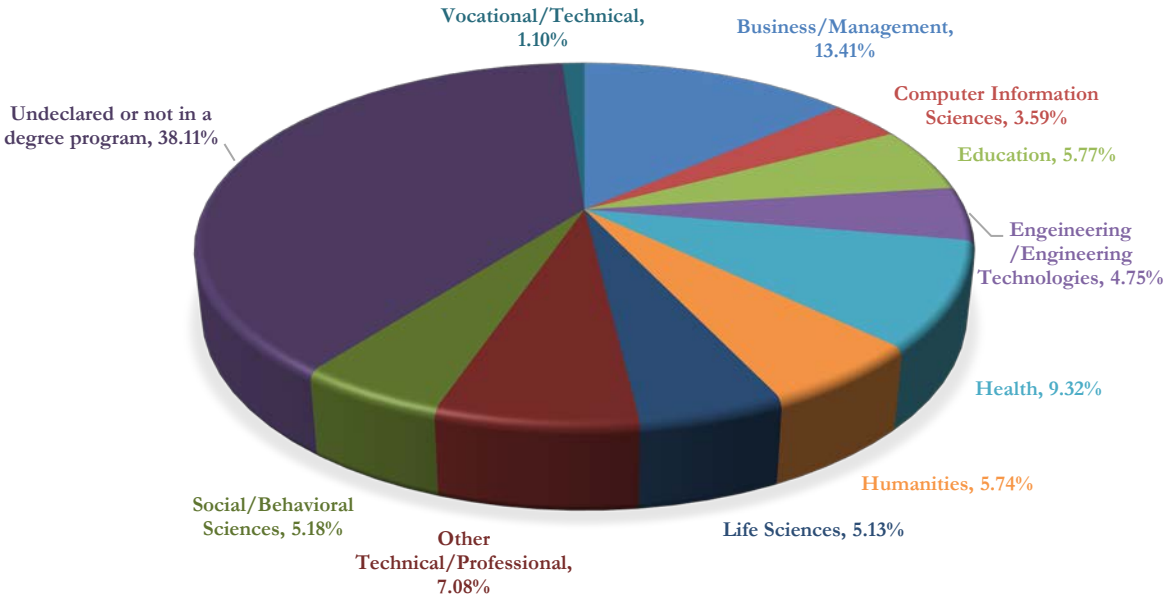

Figure 1. Educational assistance benefit recipients by community college students' major field of study.

Dependent Variables

We examined three student outcomes in our study. The first outcome variable, CCSTAT3Y, identifies students' retention and attainment in 2006 (3 years after they attended their initial higher education institution at a community college). We recoded the original variable obtained from NCES to demonstrate an ordinal progression towards student completion. Coding the data this way privileged and ranked earning a degree over transfers before degree attainment (the former signifies completion, the latter progress). The new recoded categories appear in Table 4.

We defined the second outcome variable as students' cumulative GPA by the end of their first year at their community college, as measured on a four-point scale. The final student outcome that we examined was the total number of credit hours accumulated by the end of the first year at the student's initial institution of enrollment. We examined this outcome because more total credit hours can be thought of as a rough proxy for increased engagement and an indicator for potential earlier college completion. Some community college students may purposely take fewer credit hours because they are working part-time, which may result in an extended schooling timeframe.

In this study, we sought to examine the impact of educational assistance benefits on student outcomes. Consequently, it is important to deal with the potential endogeneity issue that may arise in our analyses. Specifically, given that students are not randomly assigned to their employer aid recipient status, students who receive employer tuition aid may differ in some substantive manner from those who do not, and this difference may be influential for student outcomes. Conducting an analysis based on the full sample of first-year community college students could potentially bias the impact estimates, given that many of the aforementioned differences may be unobservable and therefore could not be included as covariates in our analyses. To account for this, our identification strategy focused on the use of potential predictors of the receipt of employer-sponsored educational assistance benefits. These predictors include students' average hours worked per week, SAT I combined verbal and math score[2], total earnings from work, cost of attendance/total student budget, total grants (reduced by employer tuition aid amount), total number of earned credit hours in 2003-04, dependent status, and age to produce propensity scores through a logit model. This is a common method to estimate average treatment effects in impact evaluation work (Rosenbaum & Rubin, 1983). This method allows for the creation of comparable treatment and control groups with similar distribution of variables that predict treatment.

Table 4

Categories for Students' Retention and Attainment as of 2006

CCSTAT3Y variable	Rank
Not enrolled, no degree/certificate	1
Transferred to a 2-year institution or less	2
Transferred to a 4-year institution without associate degree	3
Not enrolled, attained certificate	4
Enrolled, attained certificate	5
Not enrolled, attained associate's degree	6
Enrolled, attained associate degree	7
Transferred to a 4-year institution with associate degree	8

Based on a nearest-neighbor matching with one neighbor and no caliper (i.e., comparing individuals to those closest to them), the average treatment effect of employer-sponsored aid demonstrates a positive association with CCSTAT3Y (3-year retention and attainment variable; $b = 1.29$, $p = .002$, $n = 1703$) and cumulative first-year GPA ($b = .47$, $p < .004$, $n = 1703$). The standard errors used to calculate the p-value account and adjust for the fact that propensity scores are estimated (Abadie & Imbens, 2009). Because we did not find total credit hours to be related to employer-sponsored aid, we restrict our discussion to the CCSTAT3Y and GPA outcomes. Figures 2 and 3 show the average CCSTAT3Y and GPA outcomes by whether students received employer-sponsored educational assistance benefits, respectively. Those who received employer tuition aid were more likely to progress toward degree attainment and earned higher GPAs than those who did not.

Robustness Check

To provide further confidence in our findings and identification, we matched with a 1% caliper restriction on individuals with propensity scores immediately adjacent to each other. In other words, we kept the preceding and following individuals who match within 1% of their propensity score. This resulted in a subsample of 74 students (34 who received educational assistance benefits vs. 40 who did not). Although directly comparing the outcomes for those who received educational assistance benefits to the control group would have been sufficient, given that we addressed the selection into "treatment" bias, we took this extra step to account for covariates. To further minimize bias, we computed an ordered logit regression for the CCSTAT3Y (given that the dependent variable is composed of ordered categories with unequal distances) and ordinary least squares regressions for the dependent variables of GPA and credit hours separately, based on the matched samples. The models used in this study were based on the following equation:

$$Y = \alpha + \beta_1 W_i + \beta_2 Z_i + \beta_3 X_i + \varepsilon$$

Where y represents the student outcomes (either CCSTAT3Y, GPA or credit hours), W is the receipt of employer-sponsored aid, Z represents a vector of students' background characteristics (SAT I scores and known parents' education level) and X represents a vector of students' financial situation (total grants reduced by educational assistance benefit amount, adjusted gross income, and total loans). $\widehat{\beta_1}$ represents the estimate of the influence of educational assistance benefits on the student outcomes.

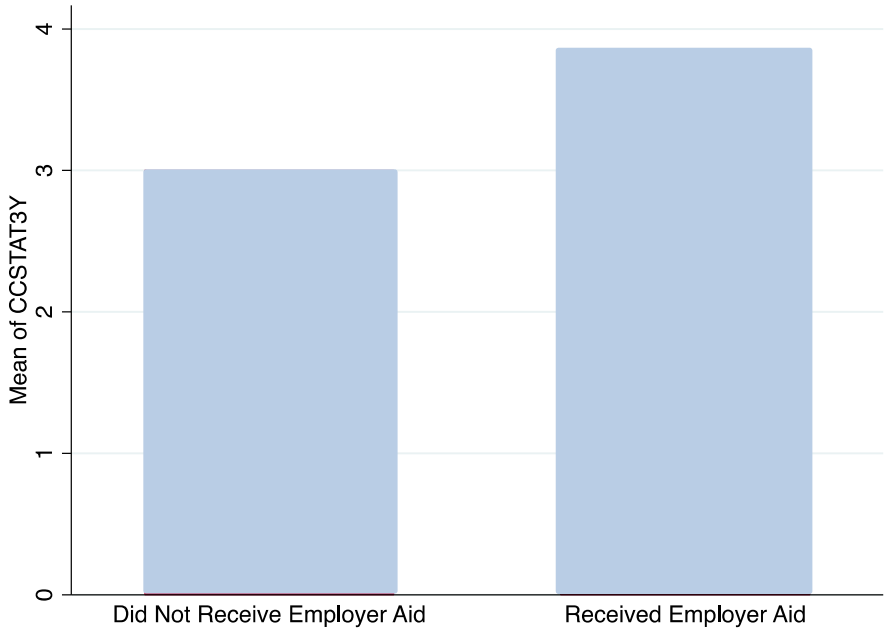

Figure 2. Students' retention and attainment by whether they received employer-sponsored educational assistance benefits.

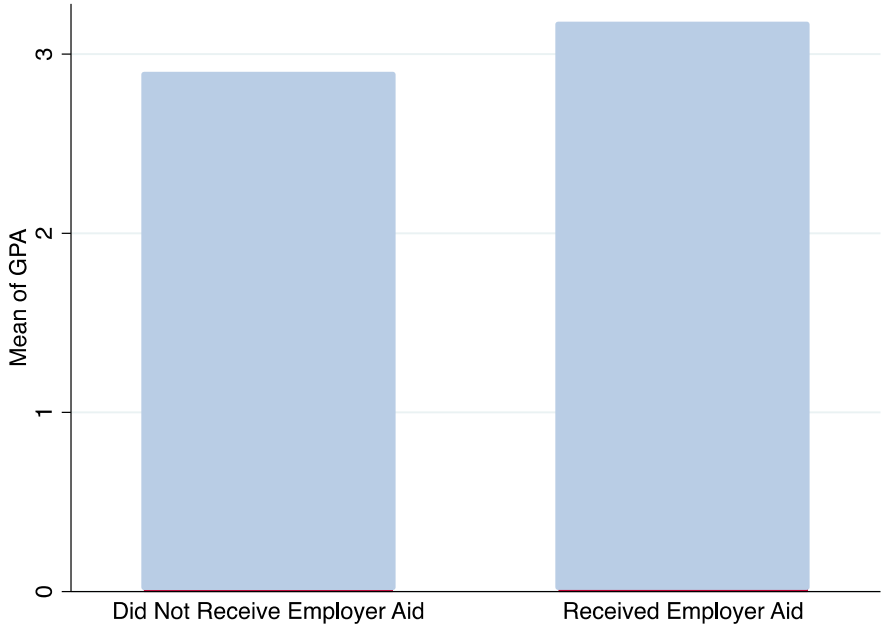

Figure 3. Students' GPA by whether they received employer-sponsored educational assistance benefits.

Standard errors were clustered by the region of the students' initial institution to account for common region related factors that may impact student outcomes. For instance, opportunities for progress and attainment in higher education may be more abundant in certain regions given the larger number of higher education institutions located in those areas. When it comes to the far western region, the state of California alone has 112 public community colleges, whereas in the Rocky Mountain region, the state of Idaho has four. Per capita in California, there is one community college for every 349,465 residents; by area there is

one community college for every 1,462 square miles. Per capita in Idaho, there is one community college for every 413,750 residents; by area there is one community college for every 20,911 square miles. By adding these extra steps, we produced more conservative but confident estimates of the impact of employer-sponsored educational assistance benefits. Results for all three models appear in Table 5.

In our new conservative estimates, the findings for the positive impact of employer-sponsored educational assistance benefits on students' retention and attainment remain, however the influence of educational assistance benefits on GPA were no longer significant. Consequently, we conclude that, based on the evidence presented, employer-sponsored educational assistance benefits positively impact longer-term student outcomes rather than more immediate ones.

Discussion

This study examined the impact of Section 127 employer-sponsored educational assistance benefits on community college student outcomes via the analytic strategy of propensity score matching. The use of propensity score matching helps to adjust for differences between students to create comparable treatment and control groups prior to estimating the impact of employer-sponsored educational assistance benefits. Based on rich and detailed data from the NPSAS:04 merged with its cohort follow up data set BPS:04/09, the results of our study suggest that while the majority of community college students (over 90%) do not receive educational assistance benefits, those who do have better retention and attainment outcomes than a comparable group who did not. Because we did not consistently find an impact of employer-sponsored educational assistance benefits for more immediate outcomes (such as GPA and total credit hours by the end of students' first year), the evidence suggests that employer-sponsored educational assistance benefits positively impact longer-term student outcomes rather than more immediate ones.

If we interpret the results via the cost-benefit framework, this would suggest that community college students may be more likely to complete their program when offered employer-sponsored education assistance because such aid reduces the cost of completion. The positive finding for employer-sponsored tuition assistance on completion rather than on other shorter-term outcomes may be because the longer-term outcome of completion ultimately matters more to students from a cost *and* benefit perspective than shorter-term outcomes such as GPA and total credit hours. From the employer viewpoint, the cost-benefit framework may also apply if their investment in employees result in improved employee retention and performance (Luthans & Youssef, 2004).

Limitations and Recommendations

Like all studies, our work is not without limitations. First, the NPSAS data proved valuable, but was limited in a few important ways. For example, the NPSAS data only provided the educational assistance benefit for the tuition amount for a student's first year at the community college. Based on this limitation, we had no way of determining if a student continued to receive this benefit in subsequent years, or received a benefit from the same employer. Not knowing if the student continued to receive such benefits in subsequent terms and years complicates drawing strong conclusions from the impact of employer-sponsored educational assistance benefits on longer-term outcomes (retention, graduation, etc.). Student outcomes between those who receive employer-sponsored educational assistance benefits for one year as compared to those receive the aid for multiple years may differ in some substantive way that would not be captured by this study based on data limitations. Future research can help in this regard by surveying employer aid recipients in community colleges to determine if they received benefits and how much they received.

Table 5

Matched Sample Regression Results

	Retention & attainment	GPA	Credit hours
Employer tuition aid	1.394	0.248	-0.665
	(2.01)*	(1.07)	(0.23)
SAT I scores	0.004	0.001	0.003
	(1.57)	(0.72)	(0.67)
Total grants	0.000	-0.000	0.000
	(0.93)	(1.41)	(0.23)
Adjusted gross income	-0.000	-0.000	0.000
	(1.28)	(1.66)	(1.24)
Price of attendance/total student budget	0.000	0.000	0.002
	(0.82)	(2.03)	(3.62)**
Total loans	0.000	0.000	-0.000
	(0.84)	(0.74)	(0.57)
Parents' education			
HS diploma	1.670	0.546	-10.077
	(2.21)*	(2.44)*	(2.49)*
Voc/tech training	1.419	-0.031	-7.481
	(1.95)	(0.10)	(2.18)
Less than 2 years of college	2.551	0.467	-13.344
	(2.09)*	(0.98)	(3.77)**
Associate degree	1.453	0.745	-6.897
	(1.96)	(3.61)**	(1.76)
2+ years, no degree or certificate	-14.471	0.345	0.238
	(25.27)**	(0.58)	(0.04)
Bachelor's degree	0.970	0.291	-9.841
	(1.88)	(1.43)	(3.56)**
Master's degree	1.752	0.359	-9.432
	(1.61)	(1.57)	(2.95)*
Doctoral degree	2.123	0.783	-9.283
	(0.65)	(1.33)	(2.35)
Constant		1.438	15.306
		(1.22)	(2.19)
cut1	3.419		
	(1.40)		
cut2	6.246		
	(1.93)		
cut3	7.430		
	(2.10)*		
cut4	7.601		
	(2.07)*		
cut5	7.712		
	(2.13)*		
cut6	8.053		
	(2.27)*		
cut7	9.174		
	(2.57)*		
R^2	0.26[1]	0.24	0.44
N	74	74	74

* $p < .05$; ** $p < .01$; standard errors are clustered by the region of students' initial institution

[1] Given the ordinal nature of model one's dependent variable, we computed McKelvey and Zavoina's *R*-squared. McFadden's Pseudo *R*-squared, which compares the likelihood ratio of a null model to the full model, was .08.

Second, some employers reimburse students directly for educational costs, thus employer-sponsored educational assistance benefits for these students are not captured in institutional data reporting or in NPSAS. Similarly, NPSAS data only captured the tuition aid element of educational assistance benefits used by students. Some employer-sponsored educational assistance benefit programs allow for the reimbursement of costs associated with fees and similar payments, books, supplies, and equipment in addition to tuition. Thus, a sizeable portion of these benefits may be going unreported, suggesting that the total dollar value of employer-sponsored educational assistance benefits is downwardly biased.

Third, not all students are invited to participate in the NPSAS survey. To be eligible, a student must be enrolled in an academic degree program for credit or an occupational or vocational program culminating in a certificate or other formal credential. Comprehensive community colleges offer a wide range of courses and training and some do not fit cleanly into this NPSAS criteria description, even though students may be able to use employer-sponsored educational assistance benefits to pay for them. Alternatively, some students may only intend to complete very specific coursework without earning a degree, despite appearing in the official database as "degree seeking." This can occur because students must self-identify as degree seeking to meet employer aid eligibility requirements and has potential implications for the data concerning retention and attainment.

Consequently, data collection systems should be improved to capture all employer-sponsored educational assistance benefits and student outcomes for all students, regardless of classification, institution type, or benefit reimbursed, to help researchers better understand the relationship between the two variables. Data collection should also attempt to capture employer-sponsored educational assistance benefits information resulting from direct reimbursements, which the current data reporting mechanism does not capture. Only by improving the quality of data can we hope to have more high-quality information to help guide decision making.

Finally, although we examined three different measures of student outcomes, countless other student measures could have been examined but were beyond the scope of this study, such as student satisfaction, changes in self-efficacy, and perception of the community college experience. Despite these limitations, this study nonetheless makes significant contributions to an area of research that has received little attention despite its potential implications for student outcomes.

Implications for Practice

The purpose of our work is to bring attention to the benefits of Section 127 employer-sponsored educational assistance benefits for community colleges. It is evident from the dearth of research on the benefits of this type of aid, especially for community college students, that this work is necessary to fill the void in our knowledge about the subject. While examinations of community college revenues have often focused on state and local sources, private foundations, and tuition, the potential benefits of Section 127 employer benefits for students is worth knowing.

Our findings are especially relevant because employer-sponsored educational assistance benefits may have the most impact at community colleges relative to other higher education institutions, given that community colleges receive the largest share of the total amount of employer-sponsored tuition aid of all institutional sectors at 33%, while public 4-year institutions, with the second largest share of employer tuition aid, receive 27% of all employer tuition aid.

We hope that our work will spawn further interest in understanding the potential impact of Section 127 employer-sponsored educational assistance benefits on student outcomes. If additional findings suggest that

these benefits have positive impacts, the results could be used to encourage further investment from employers or further legislation promoting its use.

Evidence from this study suggests that employer-sponsored educational assistance benefits positively impact students' retention and attainment outcomes for community college students. Our results can help improve the awareness of and advocacy for such benefits. The finding that only slightly more than 5% of first-year community college students in our study received educational assistance benefits clearly shows that only a small portion of students are utilizing these benefits. However, what is less clear is the number of students who are eligible for these benefits but are not using them. For example, a sizeable number of current and prospective students may simply be unaware of the benefits for which they are already eligible through their employers. If this is the case, higher education institutions can take a more active role in identifying current and prospective students working for employers that offer educational assistance benefit programs in order to help students utilize this benefit. Additionally, more active institutional involvement could improve the accuracy of data collection, resulting a better estimation of the true impact of employer-sponsored aid. Likewise, employers should place greater emphasis on awareness and outreach to educate employees on the availability of these programs. If, as our study suggests, such programs result in improved student outcomes, it can improve the human capital endowments of employees while serving as great publicity for the employer. Additional research is needed to understand student usage and non-usage patterns of employer-sponsored aid, institutional awareness of these benefits, and employer outreach efforts to promote their benefit programs.

The results of our study can also help to inform future policy on employer-sponsored educational assistance benefits. The maximum excludable tax benefit for educational assistance benefits operated under Section 127 of the Internal Revenue Code is $5,250—an amount that has remained unchanged for three decades, since its establishment in 1986. Adjusting for inflation based on the Consumer Price Index (CPI) provided by the Bureau of Labor Statistics, this represents a reduction of over 46%, equating to only $2,416 in 2016. However, because tuition rates have outpaced CPI, that amount is still overestimated. When accounting for the rise in two-year public college tuition rates from that same period, based on figures provided by the College Board, the value is closer to $2,169. For public four-year institutions, the value is less, at approximately $1,628. These calculations exclude the expenses occurred when accounting for room and board, which would stretch the dollar even more. Therefore, the value of employer-sponsored educational assistance benefits has dropped dramatically over 30 years, while the maximum excludable amount has remained unchanged. Increasing the dollar amount for the maximum excludable tax benefits may prompt more use of employer aid, which may result in stronger student outcomes. However, until those changes are made, we can only speculate as to what impact such an increase may have.

Finally, the results of this study should be used to inform future research on employer-sponsored educational assistance benefit programs. Such research should examine educational assistance benefit programs in more depth, particularly from the employer perspective. The series of Lumina Foundation reports first released in 2016 is a strong first step towards this end. Future work should examine the impact of employer-sponsored educational assistance benefits by sector (e.g., in health care, manufacturing) to identify sector initiatives and sectors in which these benefits are most effective, and they should explore why these programs are not effective in other sectors. This research may help employers make better-informed decisions about creating or increasing their investment in educational assistance benefit programs. In addition, future research should also examine student outcomes, such as retention and program completion, of those receiving different types of financial aid (e.g., federal, state, institutional, or private funds) relative to those receiving employer aid to assess the relative impact of these programs. In summary, more work in the often-neglected area of employer-sponsored educational assistance benefits is warranted. Only by having a comprehensive understanding of the various types of student aid can we truly determine their potential impact and promote policy decisions that capitalize on them.

Nexus: Connecting Research to Practice

- The results of this study can be used to improve awareness of and advocacy for employer-sponsored educational assistance benefits and support, encouraging further investment from employers or further legislation promoting its use.
- A number of students eligible for these benefits are not using them. This may be because many current and prospective students are simply unaware of the benefits offered by their employer. If so, higher education institutions can take a more active role in identifying students employed by employers that offer educational assistance benefit programs to help students utilize this benefit. Likewise, employers should place greater emphasis on awareness and outreach to educate employees on the availability of these programs. If, as our study suggests, such programs result in improved student outcomes, it can improve the human capital endowments of employees while serving as great publicity for the employer.
- The results of this study can inform future policy on employer sponsored educational assistance benefits. The maximum excludable tax benefit for educational assistance benefits operated under Section 127 of the Internal Revenue Code is $5,250. This amount has remained unchanged for three decades. Considering the rise of tuition price and inflation, it is clear that the value of employer sponsored educational assistance benefits has gone down dramatically over 30 years, while the maximum excludable amount has remained the same. Increasing the dollar amount for the maximum excludable tax benefits may prompt more use of employer aid, which may result in stronger student outcomes.

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Endnotes

[1] Some examples of such programs include El Paso Community College's college readiness initiative, Broward College's holistic advising approach and "finish what you start" campaign, Danville Community College's student success course and North Central State College's tutor resource center (American Association of Community Colleges, 2012)

[2] If students took the ACT instead of the SAT, we converted the ACT composite score to an estimated SAT I combined verbal and math score using a concordance table