Community College Course-Taking Behavior for Displaced Workers

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Abstract

Displaced workers can experience long-term financial uncertainty. To increase their odds of gaining reemployment, displaced workers can reskill at their local community colleges. This report leverages state administrative data from Texas to identify displaced workers who subsequently enrolled at a community college. Analysis was conducted to understand the type of courses displaced workers took at their local community colleges and how this was associated with regaining employment. Earning additional English credits and attempting additional credits was associated with a decrease in likelihood of experiencing unemployment, respectively. Earning an associate degree was correlated with lower odds of experiencing unemployment. There were also different results across different racial groups. Asian and White students who took additional technical credits appeared to decrease their likelihood of unemployment.

Introduction

Community colleges are uniquely positioned to serve displaced workers who want to reskill and improve their chances of reemployment. Community colleges offer career and technical education programs well suited to the needs of displaced workers and are relatively more affordable and more geographically accessible than four-year colleges (Hillman, 2016; Ma & Baum, 2016). During labor market downturns and recessions, these open-access public institutions often experience increases in enrollment (Foote & Grosz, 2020). Displaced workers enrolled at community colleges have experienced economic benefits such as an increase in earnings, especially those enrolled in vocational or STEM-based courses (Jacobson et al., 2005b).

To this point, studies examining labor market returns to community college education often focus their analyses on all attendees, but there has been less emphasis on disaggregating results by different groups. Studies that disaggregate results describe outcome differences by gender, where women experience larger wage increases than their male counterparts for earning an associate degree (Liu et al., 2015). Other studies have compared older and younger individuals who enrolled in community colleges after being displaced and identified consistent, long-term wage growth for both age groups (Jacobson et al., 2005a).

To the best of my knowledge, less attention has been paid to whether individuals from different racial groups reap similar benefits from community college education. During the height of the Covid-19 pandemic, unemployment rates reached near record levels but with wide variations across race and ethnicity (Falk et al., 2021). African American and Latinx workers were more likely to be displaced compared to their White peers (Couch et al., 2020). Moreover, even as the economy recovered, African Americans were less likely to be reemployed (Couch et al., 2020). There may be mechanisms in the job market that confer benefits to certain racial groups, but additional training at a community college could level the playing field.

In this paper, I focused on employment outcomes of displaced workers from different racial backgrounds. I further examined how students' employment outcomes are related to the types of course units earned and credentials accumulated. I sought to understand if education and training offered at community colleges benefit displaced workers equitably. I leveraged data from the Texas Higher Education Coordinating Board (THECB) and the Texas Workforce Commission (TWC), obtained through the Texas Educational Research Center, to identify displaced workers who subsequently enrolled at community colleges. Then I examined the kinds of courses that these individuals took and credentials they earned. I followed students into the Covid-19 pandemic to examine how course-taking patterns and acquisition of credentials were associated with the probability of experiencing unemployment. Finally, I disaggregated the student outcomes by race to see if there were disparities.

Guiding Question: What do we know about the relationship between students' academic outcomes and students' labor market outcomes?

Enrolling at a community college can influence individuals' labor market outcomes. Accumulating community college credits (Marcotte et al., 2005) or long-term credentials is associated with an increase in wages (Jepsen et al., 2014; Liu et al., 2015). Moreover, students who accumulate credits in healthcare or other fields directly tied to defined employment sectors, such as accounting and bookkeeping, experience wage spikes (Bahr, 2019; Liu et al., 2015). More recent research has found that the type of credits may also matter; for example, after controlling for credential earned, accumulating math or English dev-ed credits increases the likelihood of employment (Schudde & Shea, 2022).

Prior research on the returns from community college credentials for displaced workers have not disaggregated results by racial group (Jacobson et al., 2005b). Yet, recent reports from the Bureau of Labor Statistics (BLS) examining workers with an extended history of employment and subsequent job displacement found that racially-minoritized groups were less likely to recover after a recession compared to their White peers (BLS, 2010). Reemployment rates for these previously unemployed minoritized workers reached greater parity as the economy recovered several years after the Great Recession (BLS, 2018).

Research Questions

In this study, I focused on displaced workers who subsequently enrolled in community colleges and examined the relationship between their academic behaviors and labor market outcomes. I specifically examined how types of credits earned and credentials accumulated were associated with unemployment status for individuals from different backgrounds. I addressed the following interrelated research questions:
1. For individuals who experienced unemployment and enrolled at community colleges, what type of credits did they earn and what type of credentials did they accumulate?
2. How did these academic outcomes (credits and credentials earned) vary across individuals from different racial groups (African American, Asian, Latinx, White)?
3. What was the relationship between students' academic outcomes and employment status for individuals from different racial groups (African American, Asian, Latinx, White) during the Covid-19 pandemic?

Data and Sample

To address the research questions, I used data from the Texas Education Research Center (ERC), which provides information about employment history, demographics, and student academic outcomes. The TWC provides wage data in three-month quarters from January to March, April to June, July to September, and October to December. I converted quarterly wage data to align with the semester schedule at community colleges, where the first employment quarter aligned with the spring semester, the second quarter aligned with the summer semester, and the third and fourth quarters (combined and averaged) aligned with the fall semester (Schudde & Shea, 2022).

I analyzed individuals' employment histories and enrollments in community colleges to determine inclusion into the analytical sample. Similar to Jacobson et al. (2005b), I limited the sample to individuals with positive wages for 12 consecutive semesters (three years) from Fall 2010 to Summer 2013. Second, I focused on individuals between the ages of 22–50 in 2010 because I was interested in individuals who would still be of working age during the Covid-19 pandemic. The third criteria was that individuals must have had at least two consecutive quarters of unemployment between Fall 2013 and Summer 2019. The TWC's quarterly wage data did not contain an indicator identifying if an individual experienced unemployment. I considered someone who had been employed for three consecutive years and then subsequently did not have earnings for two consecutive quarters to be unemployed. Finally, I also restricted the sample to individuals who attempted at least one community college credit between Fall 2013 and Summer 2019.

Analytic Strategy

For Research Question 1, I offered descriptive statistics to explain student course-taking behaviors and outcomes. To address research question one, I provided descriptive statistics of the different types of units that students earned and credentials that they accumulated. I also examined student transcripts to find the number of academic, technical, math, and English units that students earned. Students' grades are available in the transcripts, and I assumed that someone who earned at least a D passed the course and received units for it. To identify if the courses were academic or technical in nature, students' transcripts include an indicator that denotes if it corresponds to the Academic Course Guide Manual (ACGM) or the Workforce Education Manual. Student transcripts also include courses that students attempted. I counted the number of math units that students accumulated, which can include developmental level courses, college level courses, honors courses, or supplemental lab instructions. To count the number of English units that students took, I included developmental level, college level, English literature, and honors English courses.

Then, to answer Research Question 2, I disaggregated students' course-taking behaviors and outcomes by the four largest racial groups. The four largest racial groups in the sample were White, African American, Latinx, and Asian. Everyone else was grouped in a category called Other. I compared students from each of the four largest racial groups to see if there were any differences in units accumulated and credentials earned.

To address Research Question 3, I wanted to understand how course behavior was associated with the probability of experiencing unemployment during the Covid-19 pandemic. I first estimated a regression model with the outcome of interest as a binary variable identifying if someone was unemployed or not during the Covid-19 pandemic. For the independent variables, I was informed by prior work that different types of credits and credentials could be associated with student outcomes (Schudde & Shea, 2022). I included variables indicating academic, technical, math, and English credits. I also included a variable for the number of total attempted credits, since students could have taken some electives. I took into consideration that students could have earned at least one associate degree, certificate, or marketable skill credential (MSC) and controlled for age and gender. MSCs are different from short-term or long-term certificates. According to the Texas 60X30TX Plan, higher education institutions in the state can independently create MSCs by

identifying relevant employment skills such as interpersonal, cognitive, or applied proficiencies (Marketable Skills Goal Implementation Guidelines, 2018). Three separate dummy variables are included in the analysis to represent if a student earned at least one associate degree, certificate, or MSC, respectively. Subsequently, I estimated this model for the entire sample and separately for the different racial subgroups, which is similar to running an analysis that interacts the variable with each of the different racial subgroups.

Descriptive Results

Overall, there were 1,903,798 individuals who were employed for at least three years between Fall 2010 to Summer 2013 and earned zero wages for least two consecutive quarters between Fall 2013 to Fall 2019. The analytic sample includes 26,482 (1%) of those displaced workers who eventually enrolled in Texas community colleges. While a small portion of displaced workers in Texas enrolled at community colleges, it is consistent with enrollment patterns in the state of Ohio (Minaya et al., 2020).

Table 1 includes the descriptive statistics of the sample. The four largest racial groups in the sample were White (42%), African American (19%), Latinx (18%), and Asian (3%); the majority of students in the sample were female; and almost half were between the ages of 31–40. Students were primarily interested in earning an associate degree (47%), transferring (17%), or acquiring a certificate (12%). Students were primarily majoring in Liberal Arts (39%), Arts and Media (16%), and Healthcare (14%). Prior to enrollment, individuals were employed primarily in Healthcare (18%), Trade (15%), or Manufacturing (9%).

Table 1: Descriptive Statistics

	(1) Full Sample Mean	Standard Deviation
Race:		
White	0.42	0.49
African American	0.19	0.39
Latinx	0.18	0.38
Asian	0.03	0.18
Other	0.18	0.39
Gender:		
Female	0.59	0.49
Male	0.41	0.49
Age:		
21–30	0.22	0.41
31–40	0.47	0.50
41–50	0.23	0.42
51–60	0.08	0.28
Academic Goal:		
AA	0.47	0.50
Certificate	0.12	0.32

Transfer	0.17	0.38
Work Related	0.08	0.28
Enrichment	0.04	0.20
BA	0.00	0.04
N/A	0.11	0.32
Major:		
Arts, Digital Media, & Communication	0.16	0.37
Computer Science & Information Technologies	0.05	0.21
Culinary, Hospitality, & Tourism	0.02	0.12
Design, Manufacturing, Construction, & Applied Tech	0.10	0.30
Education	0.05	0.21
Health Sciences	0.14	0.34
Liberal Arts	0.39	0.49
Public & Social Service	0.04	0.19
Science, Engineering, Math	0.05	0.21
No major	0.02	0.13
Industry Previously Employed:		
Agriculture	0.00	0.04
Mining	0.03	0.18
Utilities	0.00	0.07
Construction	0.03	0.17
Manufacturing	0.09	0.29
Trade	0.15	0.36
Transportation	0.03	0.17
Information	0.03	0.16
Finance	0.07	0.25
Real Estate	0.02	0.13
Professional Services	0.06	0.24
Management	0.00	0.07
Waste Management	0.08	0.28
Educational Services	0.08	0.27
Healthcare	0.18	0.38
Entertainment/Food Service	0.06	0.25
Public Administration	0.05	0.22
Other Services	0.03	0.16
Unemployment Length		
Longest Unemployment Spell	5.33	3.44
Observations	26482	

Note: The sample consists of individuals who were employed for three straight years from Fall 2010 to Spring 2013 and then subsequently experienced at least two straight quarters of unemployment between Fall 2013 and Spring 2019. These individuals also must have enrolled at a community college between Fall 2013 and Spring 2019.

Research Question 1: For individuals who experienced unemployment and enrolled at community colleges, what types of credits and credentials did they accumulate?

To address Research Question 1, I described different credits and credentials earned by displaced workers who enrolled at community colleges in Texas. In Table 2, I presented the types of credits and credentials earned by individuals in the analytic sample. Students took an average of 14 academic credits and approximately nine technical credits. Students attempted around two math and English credits, respectively, while attempting almost 28 total credits. I also examined the credits accumulated for different racial groups in the sample (Table 2). I found that Latinx and White students earned the most academic credits (15.96 credits and 14.06 credits, respectively), while Asians earned less (12.57 credits) than the overall sample. Students from each racial group earned about one English credit. Meanwhile, Asian, Latinx, and White students each accumulated about nine technical credits. Latinx students on average earned the most math credits (2.35 credits), while White, African American, and Asian students earned about one unit.

Table 2: Types of Units Full sample and By Racial groups

	Full Sample		White		African American		Latinx		Asian		Other	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Academic Units	13.97	17.38	14.06	17.14	11.69	16.01	15.96	18.80	12.57	15.99	14.41	17.77
Technical Units	8.70	14.77	9.00	15.06	7.65	13.61	9.13	15.34	9.50	14.96	8.51	14.58
English Credits	1.53	2.58	1.38	2.39	1.54	2.67	1.85	2.80	1.31	2.57	1.61	2.67
Math Credits	1.86	3.41	1.86	3.39	1.36	2.82	2.35	3.82	1.56	3.38	1.97	3.51
Attempted Units	27.57	23.99	27.52	23.95	26.09	23.25	29.92	24.93	24.76	22.27	27.37	24.01
Obs	26482		11168		4922		4724		853		4815	

I also examined which students earned community college credentials (Table 3). Fifteen percent of the sample earned at least one associate degree, while 19 percent earned at least one certificate and one percent earned at least one MSC. There was variation across race, where 17% of Latinx, 16% of White, 15% of Asian, and 11% of African American students earned at least one associate degree. Meanwhile, 21% of Latinx, 19% of White, 16% of Asian, and 14% of African American students earned at least one certificate. Finally, approximately one percent of White, African American, Latinx, and Asian students earned at least one MSC.

Table 3: Credentials Earned

	Full Sample		White		African American		Latinx		Asian		Other	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
AA	0.15	0.36	0.16	0.37	0.11	0.31	0.17	0.38	0.15	0.36	0.15	0.36
Certificate	0.19	0.39	0.19	0.40	0.14	0.35	0.21	0.41	0.16	0.37	0.21	0.41
Marketable Skill	0.01	0.12	0.01	0.12	0.01	0.11	0.01	0.11	0.01	0.11	0.02	0.12
Observations	26482		11168		4922		4724		853		4815	

Research Question 2: How did these academic outcomes (credits and credentials earned) vary across individuals from different racial groups (African American, Asian, Latinx, White)?

In the subsequent section, I provided descriptive statistics to illustrate the number of associate degrees, certificates, and MSCs that students earned. In addition, I identified the disciplines under which students earned these credentials. Finally, to answer the second research question, I reported descriptive results by racial groups to reveal if student outcomes were equitable. To preserve student privacy and adhere to the Family Educational Rights and Privacy Act (FERPA) laws, results with small sample sizes were either masked or expressed in inequalities.

In Table 4, Panel A, I presented findings for African American students. Overall, African Americans earned more certificates (n=811 certificate credentials) than associate degrees (n=563 associate degree credentials). Most students earned one certificate, but 169 students earned two certificates. Likewise, 506 students earned one associate degree and 57 earned at least two. Panel B shows that students were more likely to earn certificates in Liberal Arts (n=281), Design (n=178), and Arts & Digital Media (n=133). In addition, students primarily earned associate degrees in Liberal Arts (n=266), Arts & Digital Media (n=84), and Design (n=54). African American students primarily earned MSCs in Design (n=27) and Computer Science (n=12).

Table 4, Panel A: African American Students

Number of Credentials Earned	AA Freq.	Percent	Certificate Freq.	Percent	MSC Freq.	Percent
1	506	89.88	574	70.78	53	86.89
2	<60	*	169	20.84	<5	*
3	<5	*	41	5.06	<5	*
4			22	2.71		
5			5	0.62		
	563	100	811	100.00	61	100.00

Table 4, Panel B: African American Students

Discipline	AA Freq.	Percent	Certificate Freq.	Percent	MSC Freq.	Percent
Arts, Digital Media, & Communication	84	14.92	133	16.4	10	16.39
Computer Science & IT	30	5.33	26	3.21	12	19.67
Culinary, Hospitality, & Tourism	9	1.6	30	3.7	0	0
Design, Manufacturing, Construction, & Applied Tech	54	9.59	178	21.95	27	44.26
Education	13	2.31	14	1.73	6	9.84
Health Sciences	55	9.77	105	12.95	6	9.84
Liberal Arts	266	47.25	281	34.65	0	0
Public & Social Service	18	3.2	31	3.82	0	0
Science, Engineering, Math	34	6.04	13	1.6	0	0
	563	100.01	811	100.01	61	100.00

In Table 5, I reported results for Asian students. Overwhelmingly, Asian students earned more certificates and associate degrees than MSCs. Students earned certificates in Liberal Arts (n=48 certificates), Design (n=39 certificates), and Health Sciences (n=24 certificates). Similarly, students earned associate degrees in Liberal Arts (n=45 degrees), Design (n=26 degrees), and Health Sciences (n=26 degrees). Students who earned a MSC primarily studied Computer Science (n=7 credentials).

Table 5, Panel A: Asian Students

Number of Credentials Earned	AA Freq.	Percent	Certificate Freq.	Percent	MSC Freq.	Percent
1	118	86.76	118	79.19	<10	*
2	18	13.24	24	16.11	<5	*
3			<10	*		
4			<5	*		
	136	100	149	100	13	100

Table 5, Panel B: Asian Students

Discipline	AA Freq.	Percent	Certificate Freq.	Percent	MSC Freq.	Percent
Arts, Digital Media, & Communication	16	11.76	23	15.44	<5	*
Computer Science & IT	7	5.15	8	5.37	7	53.85
Culinary, Hospitality, & Tourism	<5	*	<5	*	0	0
Design, Manufacturing, Construction, & Applied Tech	26	19.12	39	26.17	<5	*
Education	<5	*	0	0	0	0
Health Sciences	26	19.12	24	16.11	0	0
Liberal Arts	45	33.09	48	32.21	0	0
Public & Social Service	<5	*	<5	*	0	0
Science, Engineering, Math	11	8.09	<5	*	0	0
	136	100.00	149	100.00	13	100.00

Table 6 presents descriptive statistics for Latinx students, who had similar patterns to their Asian and African American peers. They were more likely to acquire certificates (n=1,119 certificates) and associate degrees (n=843 associate degrees) and less likely to earn MSCs (n=70 MSCs). Some students stacked additional credentials, with over 300 earning more than one credential and more than 100 earning multiple associate degrees. Students earned certificates in Liberal Arts (n=451 certificates), Design (n=217 certificates), Health Sciences (n=152 certificates), and Arts & Digital Media (n=152 certificates). Additionally, students earned associate degrees in Liberal Arts (n=315 degrees), Design (n=104 degrees), Health Sciences (n=138 degrees), and Arts & Digital Media (n=114 degrees). Most of the students who acquired a MSC studied Design (n=26 MSCs) or Arts & Digital Media (n=21 MSCs).

Table 6, Panel A: Latinx Students

Number of Credentials Earned	AA Freq.	Percent	Certificate Freq.	Percent	MSC Freq.	Percent
1	733	86.95	797	71.22	50	71.43
2	104	12.34	250	22.34	14	20
3	6	0.71	55	4.92	6	8.57
4			9	0.8		
5			<5	*		
6			<5	*		
	843	100	1119	100	70	100

Table 6, Panel B: Latinx Students

Discipline	AA Freq.	Percent	Certificate Freq.	Percent	MSC Freq.	Percent
Arts, Digital Media, & Communication	114	13.52	152	13.58	21	30
Computer Science & Information Tech	27	3.2	38	3.4	12	17.14
Culinary, Hospitality, & Tourism	7	0.83	27	2.41	<5	*
Design, Manufacturing, Construction, & Applied Tech	104	12.34	217	19.39	26	37.14
Education	62	7.35	11	0.98	<5	*
Health Sciences	138	16.37	152	13.58	<10	*
Liberal Arts	315	37.37	451	40.3		
Public & Social Service	45	5.34	54	4.83		
Science, Engineering, Math	31	3.68	17	1.52		
	843	100	1119	99.99	70	100

Table 7 presents the breakdown in credentials earned for White students. White students earned more certificates (n=2,425) than associate degrees (n=1,867). Students primarily earned certificates in Liberal Arts (n=947 certificates), Design (n=523 certificates), and Health Sciences (n=337 certificates). Likewise, students earned associate degrees in Liberal Arts (n=737 degrees), Health Sciences (n=392 degrees), and Design (n=226 degrees). Finally, students earned MSCs in Design (n=58 MSCs) and Computer Science (n=55 MSCs).

Table 7, Panel A: White Students

Number of Credentials Earned	AA Freq.	Percent	Certificate Freq.	Percent	MSC Freq.	Percent
1	1,691	90.57	1,793	73.94	143	83.63
2	166	8.89	485	20	<30	*
3	<10	*	116	4.78	<5	*
4	<5	*	21	0.87		
5			<10	*		
6			<5	*		
7			<5	*		
	1,867	100	2,425	100	171	100

Table 7, Panel B: White Students

Discipline	AA Freq.	Percent	Certificate Freq.	Percent	MSC Freq.	Percent
Arts, Digital Media, & Communication	187	10.02	251	10.35	22	12.87
Computer Science & Information Tech	92	4.93	106	4.37	55	32.16
Culinary, Hospitality, & Tourism	13	0.7	99	4.08	<5	*
Design, Manufacturing, Construction, & Applied Tech	226	12.1	523	21.57	58	33.92
Education	67	3.59	16	0.66	<5	*
Health Sciences	392	21	337	13.9	29	16.96
Liberal Arts	737	39.48	947	39.05	1	0.58
Public & Social Service	56	3	110	4.54	<5	*
Science, Engineering, Math	97	5.2	36	1.48	0	0
	1867	100.00	2425	100	171	100.00

Research Question 3: What was the relationship between academic outcomes and employment status for individuals from different racial groups (African American, Asian, Latinx, White) during the Covid-19 pandemic?

To answer Research Question 3, I first began by fitting a series of logistic regression models for the overall sample and each racial group to estimate the likelihood that individuals experienced unemployment during the Covid-19 recession. In this set of regression models, the outcome of interest is the likelihood of experiencing unemployment and the variables of interest include types of credits accumulated and dummy variables representing if someone earned at least one associate degree, certificate, or MSC, respectively. The results, presented in Table 8, are expressed in odds ratios. An odds ratio of one suggests no relationship between the variable and unemployment. Values greater than one suggest that the variable is associated with an increase in the likelihood of experiencing unemployment during the Covid-19 pandemic. Values less than one suggest the variable is associated with a decrease in the likelihood of experiencing unemployment during the Covid-19 pandemic.

I first reported some of the statistically-significant factors associated with unemployment for the full sample. Each additional academic unit earned is associated with an increase in the likelihood of experiencing unemployment, while each additional technical unit is associated with a decrease in the probability of experiencing unemployment. Likewise, earning additional English credits and attempting additional credits is associated with a decrease in the likelihood of experiencing unemployment, respectively. Moreover, earning an associate degree was correlated with 0.31 lower odds of experiencing unemployment. Increase in age was associated with an increase in the probability of facing unemployment, while women were less likely than men to experience unemployment.

Table 8: Logit Models (Odds Ratio Results)

	African American	Latinx	Asian	White	Other	Full Sample
	b/se	b/se	b/se	b/se	b/se	b/se
Academic Units Earned	1.012*	1.019***	0.975	1.006	1.016**	1.012***
	(0.01)	(0.01)	(0.02)	(0.00)	(0.01)	(0.00)
Technical Units Earned	0.996	0.992	0.942***	0.988***	0.994	0.991***
	(0.00)	(0.00)	(0.02)	(0.00)	(0.01)	(0.00)
English Units Earned	0.983	0.976	1.000	1.004	0.969*	0.983*
	(0.02)	(0.01)	(0.04)	(0.01)	(0.02)	(0.01)
Math Units Earned	0.973	0.967**	0.966	1.012	1.005	0.994
	(0.01)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)
Attempted Units	0.993	0.993	1.023	0.994	0.995	0.994***
	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)
AA	0.750*	0.657***	1.199	0.670***	0.758**	0.697***
	(0.09)	(0.07)	(0.30)	(0.04)	(0.08)	(0.03)
Certificate	0.917	0.843	0.857	1.091	0.939	0.982
	(0.09)	(0.08)	(0.20)	(0.06)	(0.08)	(0.04)
MSC	1.005	1.408	2.236	0.998	0.929	1.066
	(0.27)	(0.38)	(1.45)	(0.17)	(0.23)	(0.12)
Age (in 2020)	1.026***	1.016***	1.010	1.011***	1.010*	1.015***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Gender (Female=1)	0.737***	0.878*	0.931	0.977	0.965	0.898***
	(0.05)	(0.06)	(0.14)	(0.04)	(0.06)	(0.02)
Observations	4922	4724	853	11168	4815	26482

Note: Outcome of interest is a binary variable for unemployed. The coefficients have been exponentiated. The variables AA, Certificate, and MSC represent associate degree, certificate, and marketable skill credentials, respectively. These variables are binary, and if students earn one or more associate degree, they are given credit for the first degree they earned. Standard errors are in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

I also reported some statistically-significant results from regressions on the four largest racial/ethnic groups observed in the data [Table 8]. Among African American and Latinx students, earning additional academic credits was associated with an increase in the probability of experiencing unemployment. Likewise, for Asian and White students, taking additional technical credits appeared to decrease their likelihood of unemployment. There was no association between accumulating English credits and unemployment for students from the four largest racial groups. Among Latinx students, accumulating more math credits was associated with a lower probability of unemployment. Of the three credentials that students could earn, associate degrees appeared to reduce the likelihood of experiencing unemployment; African American, Latinx, and White students were less likely to be unemployed if they earned associate degrees, but this relationship did not exist for Asian students. Moreover, there was no relationship between employment status and earning a certificate or a MSC across the different racial groups.

Discussion and Policy Recommendations

In this report, I examined displaced workers who subsequently enrolled at community colleges to receive additional training. I described students' academic behavior, including the types of credits they accumulated and credentials they earned, and reported how many students earned multiple certificates and associate degrees. Additionally, I disaggregated these findings across different racial groups. Then I assessed the relationship between students' academic behavior and their probability of experiencing unemployment. Only one percent of displaced workers in Texas eventually enrolled in community colleges [within how many years], which illustrates that there are a number of individuals who might benefit from participation in community colleges. The vast majority of displaced workers enrolled at community colleges earned certificates and associate degrees in Liberal Arts, Design, and Health Sciences.

Moreover, students from different racial groups earned credentials in similar disciplines. While all the students in the sample experienced a prolonged period of unemployment, they primarily earned credentials in Liberal Arts. Additional research is needed to understand why students are attracted to the Liberal Arts discipline as opposed to a career technical education (CTE) credential, though prior research suggests that this is the most common major among community college students (Schudde et al., 2020). An examination behind students' major choices, particularly focused on displaced workers entering community colleges, could help colleges relay to students that there are sizable wage premiums for earning CTE credentials (Bahr, 2019; Jacobson et al., 2005b).

Disaggregating results by racial groups revealed important patterns. When Asian and White students accumulated additional technical credits, they appeared less likely to be unemployed, a relationship that wasn't present for their African American and Latinx peers. Given data limitations, I cannot explain why the relationship between technical credits and unemployment appears to vary across racial identification, but future research should explore why the benefits of technical credits are not shared by all racial groups. Meanwhile, African Americans and Latinx students who earned additional academic credits were more likely to experience unemployment. Schudde and Shea (2022) also found that earning academic credits, after controlling for credentials earned, are associated with an increase in unemployment. Academic credits taken on top of a given credential do not appear to be associated with positive labor market outcomes. Some of these individuals may have been counseled to take academic units. However, it is possible that academic units do not benefit individuals who are displaced and attend community colleges to reskill. Additional qualitative studies could possibly provide more explanation behind this phenomenon.

When I examined the relationship between credentials and unemployment status, I found different outcomes. The overall sample of students who earned at least one associate degree were less likely to face unemployment. In particular, when I disaggregated the results, I found that African American, Latinx, and White students were less likely to experience unemployment when they earned associate degrees, but this relationship was not evident for Asian students. These mixed results highlight the importance of disaggregating data by racial groups.

Community college can serve as a vital organization to help displaced workers access training to improve their recovery from bouts of unemployment. There appears to be payoffs to accumulating certain types of credits and earning specific types of credentials. As the economy continues to evolve, it is inevitable that some individuals will experience unemployment. However, reskilling at a community college can help individuals who are displaced.

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Texas Success Center

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