Return on Investment Analysis of CTE Programs in Mississippi

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Acknowledgments

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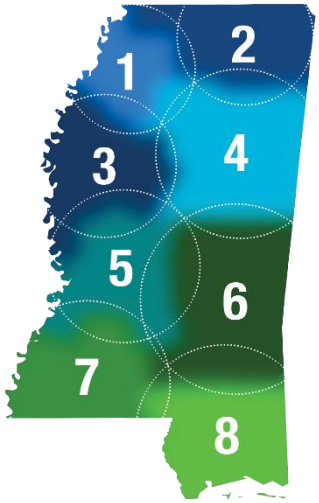
1 Introduction

AccelerateMS is a central hub driving connection between the workforce, employers, and training organizations to facilitate an effective workforce development pipeline in Mississippi. Through job training, education, and support services aligned with local trends and industry needs, AccelerateMS leads policy and programs designed to increase the employability and earning potential of Mississippians while simultaneously bridging the gap between workforce skills and industry needs.

ACCELERATEMS ECOSYSTEM MAP



AccelerateMS commissioned this analysis to fulfill the requirements set forth by the Comprehensive Career and Technical Education Reform Act (HB1388), which seeks to align Mississippi Public K-12 career and technical education (CTE) clusters with postsecondary credential programs, employer demand, and occupations that provide family-sustaining wages.

Enacted on March 23, 2022, HB1388 requires an annual study be conducted that examines the outcomes of Mississippi K-12 and community college students who complete CTE programs, defined as the completion of (1) an Associate of Applied Science degree or (2) a Career Certificate (3) or Technical Certificate. An Associate of Applied Science degree is a two-year program designed to prepare students to enter the workforce with advanced technical and academic skills, while a Career and Technical Certificate is a focused, shorter-term training program with the goal of acquiring a specific job or skill set.

This report has the following objectives:

- Provide information pertaining to postsecondary outcomes of students enrolled in community college CTE programs in Academic Year (AY) 2019 through AY 2023
- Provide information pertaining to employment outcomes of students who graduated from community college CTE programs in AY 2019 through AY 2023.
- Provide information pertaining to secondary education outcomes of students enrolled in K-12 CTE in Academic Year (AY) 2018 through AY 2022, specifically CTE Concentrators.
- Provide information pertaining to postsecondary and employment outcomes of K-12 CTE Concentrator graduates in AY 2018 through AY 2022.

The study uses a wide array of data that are based on several sources, including the AY2023 participant and financial reports from Mississippi's State Longitudinal Data System (SLDS) by the Mississippi Community College Board (MCCB), Mississippi's State Workforce Investment Board (SWIB) the the Mississippi Department of Education (MDE) and the Mississippi Department of Employment Security (MDES); industry and employment data from the Bureau of Labor Statistics and Census Bureau; outputs of Lightcast's impact model and MR-SAM model; and a variety of

published materials relating training to social behavior. See the Resources and References section and the appendices for more information on these sources and models.

The benefits of Career Technical Education in Mississippi extend to taxpayers through the broader economic stimulation and fiscal health of the region. As individuals secure employment and their earnings increase, there is a notable rise in local and state tax contributions, enhancing the financial resources available for public services and infrastructure. The successful transition of individuals into stable employment reduces the burden on social welfare systems, leading to substantial savings for the public sector. These taxpayer benefits collectively advance economic resilience, foster societal prosperity, and improve the overall quality of life of residents in the region and state.

This study measures the economic impact of Secondary and Postsecondary career and technical education activities across Mississippi as well as by Ecosystem and the benefits the programs generate in return for investments made by taxpayers. After a contextual overview of regional and participant demographics, the following analyses are presented:

- **Investment Analysis**
- **Economic Impact Analysis**

Direct participant outcomes of program participation, reflected in higher earnings, growth in regional tax revenues, government savings, and the return on investment from the perspective of taxpayers is reported under the Investment Analysis. The regional economic impacts of the program operations' spending is reported under the Economic Impact Analysis. Economic impact analysis results reflect program and financial data, for the Academic Year 2023 (AY 2023) in Community College CTE Programs, and AY 2022 in High School (K-12) CTE programs.

2 Executive Summary

This report assesses the return on investment from community college and high school (K-12) Career and Technical Education (CTE) programs for the state economy and the benefits generated by these programs for students, taxpayers, and society. The results of this study display the impacts of CTE programs by education level and Ecosystem region in Mississippi and vary by each Ecosystem.

2.1 Investment Analysis

Investment analysis is the practice of comparing the costs and benefits of an investment to determine whether it is profitable or not. This study considers career and technical education as an investment from the perspective of the State's taxpayers.

Programs are typically supported via state government funding that is passed through the community colleges and secondary education providers as well as tuition and fees, local government funding, and competitive grants. While the primary focus of this report is on the return on investment from the program participants themselves, it is worthwhile to note that the operations and funding of staff and resources to run educational programs generate additional income and tax revenue across the state. For the purpose of this report, benefits primarily consisted of increased income tax revenues for the region.

Across all CTE programs in the Community College system, the region's taxpayers will see a benefit-cost ratio of 3.14 over ten years.

The purpose of CTE programs is to provide participants with the training and support they need to become gainfully employed or to increase their earnings. As a result: participants earn more income, and the region's economy - and consequently Mississippi's economy - experiences increased tax revenues and public sector savings. One way to measure this is in a benefit-cost ratio (BCR), which measures the amount of financial benefit to be gained per dollar of investment into a program or activity over the measured period of 10 years. Across all CTE programs in community colleges, the state's taxpayers will see a benefit-cost ratio of **3.14** in the next ten years. In the K-12 CTE programs, taxpayers currently experience a benefit-cost ratio of **0.63**. This ultimately means for every dollar invested in CTE programs at the Community College level, the State's taxpayers will experience a return of $3.14 and for every dollar invested at the high school level, the State's taxpayers will experience a return of $0.63.

The table below provides the benefit-cost ratios at the individual type of program level. Note that program-to-program comparisons should not be made based solely on benefit-cost ratios—a myriad of factors result in the variance between programs. Differentiating factors include, but are not limited to:

- Unique populations receiving training
- Available jobs and associated wages in the associated region
- Amount of funding
- Services and training provided
- Point-of-time in contract, particularly for multi-year programs (first year, middle years, last year)

Table 2.1: Benefit Cost Ratio of CTE Programs, AY 2023

Program	Benefit-Cost Ratio	Annualized Avg. Earnings AY 2023
Ecosystem 1 Associate of Applied Science	2.26	$35,671
Ecosystem 1 Career and Technical Certificate	2.07	$39,667
Ecosystem 2 Associate of Applied Science	2.83	$41,156
Ecosystem 2 Career and Technical Certificate	1.43	$31,759
Ecosystem 3 Associate of Applied Science	1.81	$53,248
Ecosystem 3 Career and Technical Certificate	0.57	$29,838
Ecosystem 4 Associate of Applied Science	5.01	$47,772
Ecosystem 4 Career and Technical Certificate	2.34	$35,116
Ecosystem 5 Associate of Applied Science	7.34	$43,020
Ecosystem 5 Career and Technical Certificate	2.75	$37,790
Ecosystem 6 Associate of Applied Science	3.10	$42,678
Ecosystem 6 Career and Technical Certificate	1.93	$36,349
Ecosystem 7 Associate of Applied Science	3.42	$44,183
Ecosystem 7 Career and Technical Certificate	3.00	$38,552
Ecosystem 8 Associate of Applied Science	2.82	$41,975
Ecosystem 8 Career and Technical Certificate	1.79	$33,817
MS K-12 CTE (AY 2022)	0.63	-

Source: Lightcast Impact Model

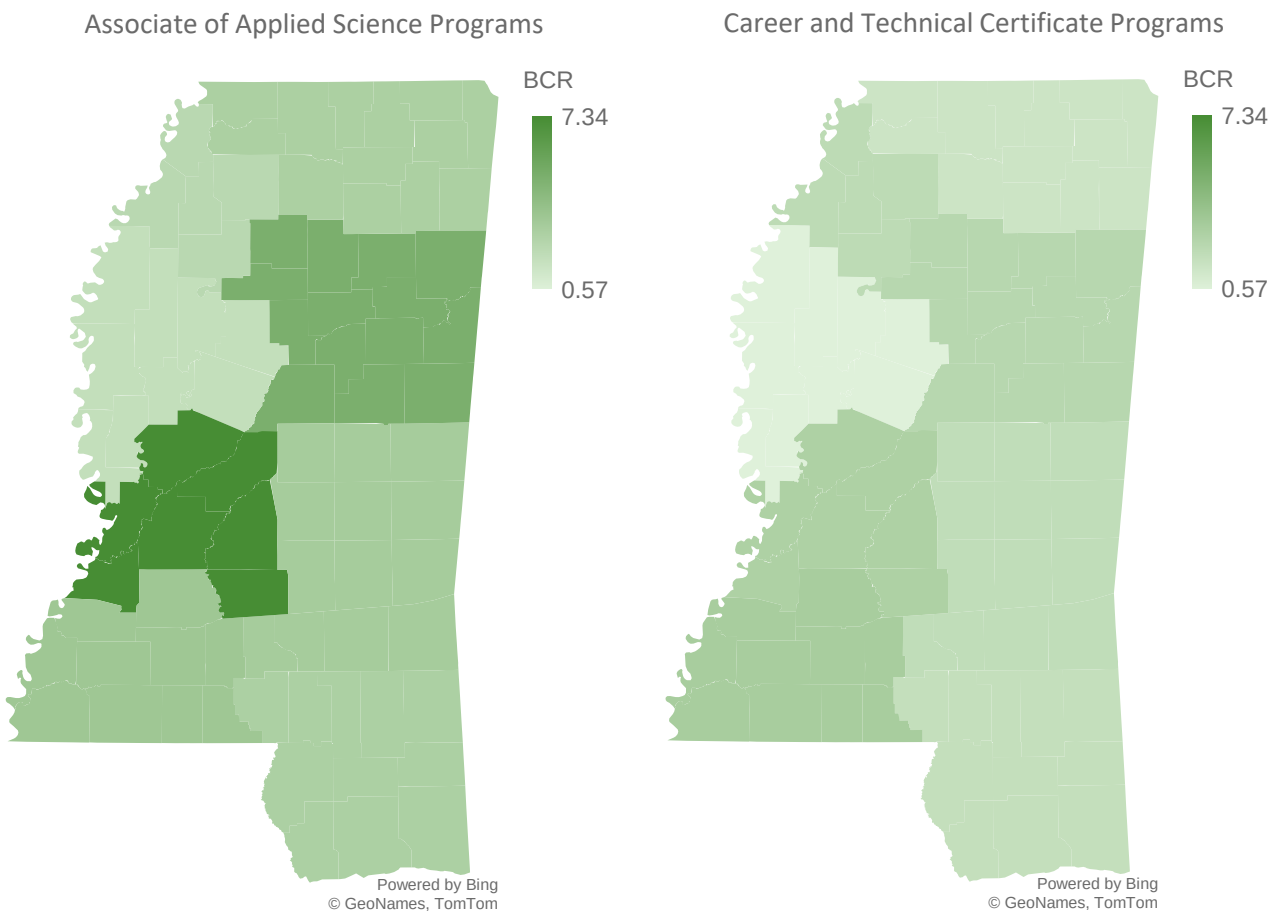
Programs of Associate of Applied Science in Ecosystem 5 and Ecosystem 4 provided the highest benefit-cost ratios, at 7.34 and 5.01 respectively. While these regional returns are encouraging, it was hoped that more regions would return similar BCRs, while many regions returned a BCR of less than half this. This is despite many Ecosystems having their BCR boosted by pre-program employment wages, which were reported to be lower than the minimum wage of a full-time employee, to then finding full-time employment of greater than minimum wage, thus providing an instant realized benefit to the program.

In the cases of Ecosystem 3 Career and Technical Certificate and MS K-12 CTE, the benefit-cost ratio of these programs fell below one (0.57 and 0.63, respectively). It is not uncommon for the BCR of a K-12 program to remain below one: students often are still in school or choose to continue to more education instead of participating in the workforce, thus the model does not capture returns on investment within the year for those participants. As for Ecosystem 3 Career and Technical Certificate, it did not return a positive BCR. It is important to point out that average earnings are only one part of the methodology used to determine BCR so this might not show a

Associate of Applied Science programs in Ecosystems 4 and 5 provided the highest benefit to cost ratio and are Mississippi's highest impact CTE programs.

direct correlation to the BCR. Further analysis suggests that participant employment outcomes negatively impacted BCR the most: more participants reported being unemployed post-program compared to their employment status prior to enrollment. A decrease in employment and an increase in unemployment lead to increased usage of unemployment benefits, which is a negative effect on total benefits.

Figure 2.1: Benefit-Cost Ratio of Associate of Applied Science and Career and Technical Certificate Programs in Community Colleges Across Mississippi, by Ecosystem



2.2 Economic Impact Analysis

During the analysis year, CTE programs across community colleges and K-12 in Mississippi spent $68.0 million on payroll and benefits and $97.3 million spent on goods and services to carry out its day-to-day operations. This initial round of spending creates more spending across other businesses throughout the regional and state economy, resulting in the commonly referred to multiplier effects. This analysis estimates the net economic impact of CTE programs that directly accounts for the fact that state and local dollars spent on such programs could have been spent elsewhere in the state if not directed towards CTE and would have created impacts regardless. We account for this by estimating the impacts that would have been created from the alternative spending and subtracting the alternative impacts from the spending impacts on CTE programs.

This analysis shows that in the academic year (AY) 2022-2023, operations spending in CTE programs generated $922.9 million in added income for the state economy. The additional income is equal to approximately 0.68% of the total gross regional product (GRP) of Mississippi. For perspective, this impact is over half the size of the entire Management industry in the state. The additional income impact is equivalent to supporting 1,897 jobs.

3 Profile of Mississippi and the Regional Economy

Mississippi CTE programs served 18,805 adult students in community colleges and 28,193 high school students in AY23. Comparing the demographics of those served with the demographic composition of the region helps to determine if programs are effectively reaching their target populations and where there may be gaps in service delivery.

3.1 Gender & Race Distribution

Table 3.1 details the gender distribution of the state's labor force and CTE program participants during AY23. The data show that females account for the majority (58%) of the unemployed population. Additionally, female participation in Career and Technical Certificate programs (65%) vastly outperforms male participation (35%). In the Associate of Applied Science and K-12 CTE programs, participation distribution is closer to the distribution of the greater population and unemployed population. This discrepancy in Career and Technical Certificate suggests the existence of barriers that hinder male participation in these programs, such as a lack of awareness, accessibility challenges, and other social and cultural factors that discourage males from seeking this training, or that female students more often opt for the shorter degree option due to external factors. Program availability may also influence participation. For example, if capacity in traditionally male-dominated programs, such as manufacturing, is limited to 200 participants, while a traditionally female-dominated program, such as nursing/healthcare, has capacity upwards of 400, this may impact participation in ways outside the control of the participants themselves. Given the complexity of factors influencing participation, further research is needed to understand the cause low participation in males in Career and Technical Certificate programs.

Figure 3.1: Gender Distribution

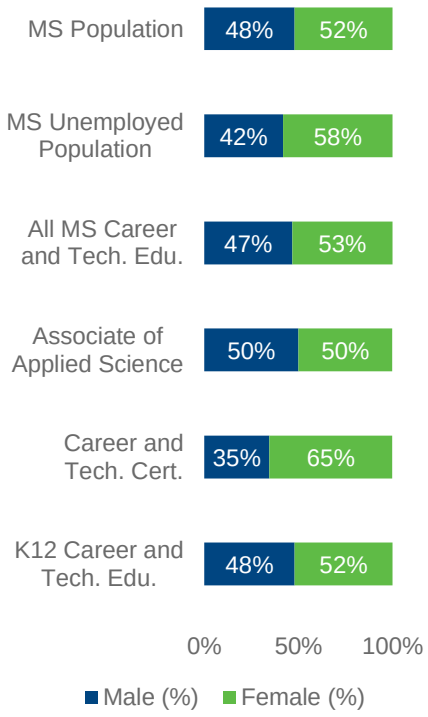


Table 3.1. Gender Distribution of Labor Force and Participants, Statewide (AY23)

Population	Male	Female
Mississippi Population	48%	52%
Mississippi Unemployed Population	42%	58%
All MS CTE*	47%	53%
Associate of Applied Science	50%	50%
Career and Technical Cert.	35%	65%
K-12 CTE (AY22)	48%	52%

Source: SLDS, 2024

*Includes Community College Associate of Applied Science & Career and Technical Certificate, and K-12 CTE

Table 3.2 details the racial and ethnic distribution of program participants in AY23. As shown, the racial and ethnic composition of participants diverges from the general population, particularly in the representation of White and Black/African American individuals. Racial and ethnic data from the participant side is limited as data was provided in a three-part breakdown of White, Black and Other.

Table 3.2: Racial/Ethnic Breakdown of AccelerateMS and Participants (AY23)

Demographic	MS	MS Unemployed	All MS CTE*	Associate of Applied Science	Career and Tech. Cert.	K-12 CTE (AY22)
% White	59%	30%	48%	52%	37%	47%
% Black or African American	38%	69%	45%	40%	56%	47%
% Hispanic/Latino**	4%	2%	0%	0%	0%	0%
% Asian	1%	1%	0%	0%	0%	0%
% Two or more races	2%	0%	0%	0%	0%	0%
% Unknown (not disclosed)	0%	0%	6%	6%	5%	6%

Source: SLDS and the US Census Bureau

*Includes Community College Associate of Applied Science & Career and Technical Certificate, and K-12 CTE

**Hispanic/Latino populations may also be counted in White or Black populations as White, Hispanic or Black, Hispanic, and account for sum percentages greater than 100%.

In general, Black/African American representation is higher in Career and Technical Certificate and K-12 CTE programs than the general population and evenly distributed in Associate of Applied Science programs. This overrepresentation of Black/African American individuals may be attributed to the higher levels of unemployment (69%) among these groups. Additionally, it likely reflects a higher incidence of factors such as economic disadvantage, basic skills deficiency, and other barriers. These disparities underscore the importance of accessible programs in addressing and mitigating employment and educational barriers faced by historically underrepresented and disadvantaged groups.

3.2 Other Participant Characteristics

Table 3.3 shows program participants who received SNAP, TANF, or UI benefits within one year of graduating from a CTE program at the community college or K-12 level, accompanied by the percentage out of the total graduating group. Data limitations did not allow for further analysis into the types of assistance received per participant per region, nor for the status of assistance prior to enrollment.

However, this data can aid in directing focus on what regions contain more or a higher ratio of program participants in need of further assistance, or workforce training. Designing programs that effectively mitigate the varied and unique challenges of participants enhances the efficacy of these programs, ensuring comprehensive support is provided to those most in need.

Table 3.3: CTE Graduates who Receive SNAP, TANF, or UI Benefits within One Year of Graduation, Community College (CC) and K-12 CTE

Ecosystem	CC CTE	% of CC CTE Graduates	K-12 CTE	% of K-12 CTE Graduates
Ecosystem 1	35	30%	34	6%
Ecosystem 2	69	6%	49	5%
Ecosystem 3	40	12%	123	22%
Ecosystem 4	86	7%	86	9%
Ecosystem 5	155	10%	184	11%
Ecosystem 6	94	8%	69	6%
Ecosystem 7	41	7%	74	11%
Ecosystem 8	82	6%	115	5%

Source: SLDS, 2024

The barriers detailed above represent the need for continued employment support post-program across the regions. This information is instrumental in guiding local program development and implementation and ensuring that the training and education provided are responsive to the real and varied needs of the community.

3.3 Mississippi's Economy

AccelerateMS serves the state of Mississippi and from early on, it has been pursuing and investing resources to improve the quality of the workforce regionally as well as the state as a whole. Before we look at the impacts and benefits created by CTE programs on the regional economy, it is important to gain context on the regional industry composition.

Table 3.4 provides the breakdown of jobs by industry in the state. Among the state's non-government industry sectors, the Manufacturing sector is the largest employer, supporting 146,010 jobs or 11.0% of total employment in the state. The second largest employer is the Retail Trade sector, supporting 145,980 jobs or 11.0% of the state's total employment. Altogether, the state supports 1,324,673 jobs.

Table 3.4: Jobs and Average Wages by Industry Sector: 2024

Industry	Total Jobs	% of Total Jobs	Average Annual Earnings Per Job
Agriculture, Forestry, Fishing, & Hunting	22,488	1.7%	$43,544
Mining, Quarrying, & Oil and Gas Extraction	3,406	0.3%	$104,019
Utilities	8,283	0.6%	$133,936
Construction	69,337	5.2%	$78,157
Manufacturing	146,010	11.0%	$76,424
Wholesale Trade	37,844	2.9%	$90,682
Retail Trade	145,980	11.0%	$39,218
Transportation & Warehousing	70,802	5.3%	$66,336
Information	10,428	0.8%	$79,409
Finance & Insurance	38,035	2.9%	$88,040
Real Estate & Rental & Leasing	13,696	1.0%	$57,899
Professional & Technical Services	46,255	3.5%	$86,175
Management of Companies & Enterprises	11,203	0.8%	$123,088
Administrative & Waste Services	76,579	5.8%	$46,150
Educational Services	18,880	1.4%	$44,998
Health Care & Social Assistance	145,223	11.0%	$63,380
Arts, Entertainment, & Recreation	11,954	0.9%	$28,054
Accommodation & Food Services	128,053	9.7%	$25,151
Other Services (except Public Administration)	60,435	4.6%	$37,827
Government	259,781	19.6%	$67,373
Total	**1,324,673**	**100.0%**	

Source: Lightcast Q2025.1

Table 3.5 summarizes the breakdown of the regional economy by major industrial sector, with details on labor and non-labor income. Labor income refers to wages, salaries, and proprietors'

income. Non-labor income refers to profits, rents, and other forms of investment income. Together, labor and non-labor income comprise the region's total income, which can also be considered as the region's gross regional product (GRP).

As shown in Table 3.5, the total income, or GRP, of Mississippi is approximately $1.35 billion, equal to the sum of labor income ($899.8 million) and non-labor income ($466.7 million). In Section 4, we use the total added income as the measure of the relative impacts of CTE programs on the state economy.

Table 3.5: Labor and non-labor income by major industry sector in Mississippi (in millions), 2024

Industry	Labor	Non-Labor*	GRP	% of Total
Agriculture, Forestry, Fishing & Hunting	$21,399	$13,106	$34,504	2.5%
Mining, Quarrying, & Oil and Gas Extraction	$6,667	$17,062	$23,730	1.7%
Utilities	$11,119	$33,111	$44,231	3.2%
Construction	$56,681	$13,910	$70,590	5.2%
Manufacturing	$111,765	$112,625	$224,390	16.4%
Wholesale Trade	$36,710	$44,007	$80,716	5.9%
Retail Trade	$62,772	$57,866	$120,638	8.8%
Transportation & Warehousing	$51,411	$17,299	$68,710	5.0%
Information	$9,231	$19,105	$28,336	2.1%
Finance & Insurance	$46,370	$29,894	$76,264	5.6%
Real Estate & Rental & Leasing	$35,171	$12,221	$47,392	3.5%
Professional & Technical Services	$45,801	$10,725	$56,526	4.1%
Management of Companies & Enterprises	$15,683	$1,028	$16,711	1.2%
Administrative & Waste Services	$36,910	$8,103	$45,014	3.3%
Educational Services	$8,621	$752	$9,373	0.7%
Health Care & Social Assistance	$99,322	$10,914	$110,236	8.1%
Arts, Entertainment, & Recreation	$4,235	$1,858	$6,093	0.4%
Accommodation & Food Services	$35,252	$22,707	$57,960	4.2%
Other Services (except Public Administration)	$29,641	$3,454	$33,095	2.4%
Government	$175,022	$36,962	$211,984	15.5%
Total	**$899,784**	**$466,709**	**$1,366,492**	**100.0%**

Values represented in millions of dollars

* Non-Labor data is sum of Property Income and Taxes, minus Subsidies

** Data reflect the most recent year for which data are available. Lightcast data are updated quarterly.

+ Numbers may not add due to rounding.

Source: Lightcast Q2025.1

4 Investment Analysis Results

This chapter outlines the methodology for determining the return on investment of CTE programs. Return on investment is reported as a benefit-cost ratio in the following section.

The benefits generated by CTE programs affect the lives of many people. Participants receive the training and support they need to become gainfully employed or to increase their earnings. As participants earn more, communities and citizens throughout the region benefit from an enlarged economy and a reduced demand for social services.

Investment analysis is the process of evaluating total costs and measuring these against total benefits to determine whether or not a proposed venture will be profitable. If benefits outweigh costs, then the investment is worthwhile. If costs outweigh benefits, then the investment will lose money and is, thus, considered infeasible. In this case, costs are equal to the contribution of state government funding from the State of Mississippi passed to the community colleges and K-12 system for each program along with any additional funding. Benefits consist of increased state tax revenues and public sector savings. Costs include the $68.0 million on payroll and benefits and $97.3 spent on goods and services to carry out its day-to-day operations.

The pivotal step here will be to hone in on the public benefits that specifically translate into higher tax revenues. For example, benefits resulting from earnings growth are limited to tax payments within the state. Similarly, savings related to improved health, reduced crime, and fewer welfare and unemployment claims are limited to those received strictly by state and local government. In all instances, benefits to private residents, local businesses, or the federal government are excluded.

4.1 Participant Higher Earnings

AccelerateMS provides a state-supported review of CTE ecosystems and their return on investment to both satisfy requirements from HB1388 and to examine the impacts of CTE education across Mississippi as it seeks to marshal resources to areas of greatest benefit for the state.

The first step in measuring the return on CTE programs is to determine participant earnings outcomes. For this analysis, the return-on-investment analysis considers the participants of each program, not just the exits. Of particular interest is the change in earnings for participants before and after they entered a program, as these represent the marginal benefit from participating in the program. Thankfully, AccelerateMS's data partner, the SLDS, was able to provide the average wages prior to participation in a program. Additionally, AccelerateMS was able to provide post-program earnings for all the programs included in this analysis, along with the estimated number of participants employed after completing a program, despite some data

limitations.[1] AccelerateMS was able to provide annual wage values, but not hourly wage values. Consequently, pre- and post-program earnings are analyzed by average annual wage.

To calculate pre-program earnings, the participants were split into two categories: employed and unemployed. Their earnings were calculated via the average wages provided. For participants that were unemployed at enrollment, an estimated 15% of them received unemployment insurance (UI).[2] Multiplying the maximum weekly benefit amount for Mississippi ($235) by the maximum number of weeks people can receive UI in Mississippi (26 weeks), we arrive at the annual earnings the unemployed participants receive from UI ($6,110). Those unemployed participants who receive no unemployment insurance are assumed to have $0 in annual income.

To control K-12 participants, predominantly school age and those unable to receive unemployment benefits, they are accounted for separately to prevent the model from assigning 15% of Youth to receive unemployment benefits. However, after program participation and completion, the remaining unemployed Youth participants are accounted for, and 15% of Post-Program Youth participants who remain unemployed are calculated to receive UI benefits. Table 4.1 displays the pre-program earnings across the pre-program employment status categories.

Table 4.1: Pre-Program Earnings, PY 2023

Ecosystem 1	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	62%	317	$11,819	81%	74	$19,306
Unemployed	38%	192	$917	19%	17	$917
Unemployed with UI benefits	15%	29	$6,110	15%	3	$6,110
Unemployed without UI benefits	85%	163	$0	85%	14	$0
Weighted average earnings with unemployment	38%	509	$7,706	19%	91	$15,871

Ecosystem 2	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	74%	1481	$15,696	81%	593	$13,367
Unemployed	26%	531	$917	19%	140	$917
Unemployed with UI benefits	15%	80	$6,110	15%	21	$6,110
Unemployed without UI benefits	85%	451	$0	85%	119	$0
Weighted average earnings with unemployment	26%	2012	$11,795	19%	733	$10,989

[1] For all programs, SLDS provided the annual wage, without average hourly wage for each program. This forced Lighcast to hold an assumption of a 40-hour workweek, despite average hourly wages falling below minimum wage.

[2] Unemployment insurance rates supplied by the National Employment Law Project (https://waysandmeans.house.gov/wp-content/uploads/2016/09/20160907HR-Testimony-Conti.pdf).

Ecosystem 3	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	70%	144	$14,400	70%	149	$10,764
Unemployed	30%	61	$917	30%	64	$917
Unemployed with UI benefits	15%	9	$6,110	15%	10	$6,110
Unemployed without UI benefits	85%	52	$0	85%	54	$0
Weighted average earnings with unemployment	30%	205	$10,388	30%	213	$7,805

Ecosystem 4	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	78%	2063	$18,005	80%	533	$15,237
Unemployed	22%	590	$917	20%	137	$917
Unemployed with UI benefits	15%	89	$6,110	15%	21	$6,110
Unemployed without UI benefits	85%	502	$0	85%	116	$0
Weighted average earnings with unemployment	22%	2653	$14,205	20%	670	$12,309

Ecosystem 5	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	74%	2078	$16,568	72%	537	$21,432
Unemployed	26%	729	$917	28%	214	$917
Unemployed with UI benefits	15%	109	$6,110	15%	32	$6,110
Unemployed without UI benefits	85%	620	$0	85%	182	$0
Weighted average earnings with unemployment	26%	2807	$12,503	28%	751	$15,586

Ecosystem 6	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	75%	1430	$14,472	77%	626	$15,978
Unemployed	25%	487	$917	23%	185	$917
Unemployed with UI benefits	15%	73	$6,110	15%	28	$6,110
Unemployed without UI benefits	85%	414	$0	85%	157	$0
Weighted average earnings with unemployment	25%	1917	$11,028	23%	811	$12,542

Ecosystem 7	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	68%	563	$14,354	69%	279	$12,136
Unemployed	32%	266	$917	31%	123	$917
Unemployed with UI benefits	15%	40	$6,110	15%	18	$6,110
Unemployed without UI benefits	85%	226	$0	85%	105	$0
Weighted average earnings with unemployment	32%	829	$10,042	31%	402	$8,703

Ecosystem 8	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	68%	2172	$14,250	78%	793	$15,349
Unemployed	32%	1018	$917	22%	219	$917
Unemployed with UI benefits	15%	153	$6,110	15%	33	$6,110
Unemployed without UI benefits	85%	865	$0	85%	186	$0
Weighted average earnings with unemployment	32%	3190	$9,995	22%	1012	$12,226

Source: SLDS and Lightcast Impact Model

* Numbers may not add up due to rounding

This process was repeated for calculating the average earnings within one year after completing CTE programs. Recall that AccelerateMS provided the earnings for those participants employed after completing the programs, so the living wage data was not needed for post-program earnings. AccelerateMS also provided the number of participants employed after exiting a program. Table 4.2 provides the post-program earnings across the post-program employment status categories.

Table 4.2: Post-Program Earnings, PY 2023

Ecosystem 1	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	63%	322	$35,671	77%	70	$39,667
Unemployed	37%	187	$917	23%	21	$917
Unemployed with UI benefits	15%	28	$6,110	15%	3	$6,110
Unemployed without UI benefits	85%	159	$0	85%	18	$0
Weighted average earnings with unemployment	63%	509	$22,880	77%	91	$30,846

Ecosystem 2	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	72%	1445	$41,156	62%	454	$31,759
Unemployed	28%	567	$917	38%	279	$917
Unemployed with UI benefits	15%	85	$6,110	15%	42	$6,110
Unemployed without UI benefits	85%	482	$0	85%	237	$0
Weighted average earnings with unemployment	72%	2012	$29,809	62%	733	$20,009

Ecosystem 3	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	69%	142	$53,248	52%	111	$29,838
Unemployed	31%	63	$917	48%	102	$917
Unemployed with UI benefits	15%	9	$6,110	15%	15	$6,110
Unemployed without UI benefits	85%	53	$0	85%	87	$0
Weighted average earnings with unemployment	69%	205	$37,203	52%	213	$15,946

Ecosystem 4	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	76%	2026	$47,722	64%	426	$35,116
Unemployed	24%	627	$917	36%	244	$917
Unemployed with UI benefits	15%	94	$6,110	15%	37	$6,110
Unemployed without UI benefits	85%	533	$0	85%	208	$0
Weighted average earnings with unemployment	76%	2653	$36,666	64%	670	$22,651

Ecosystem 5	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	72%	2030	$43,020	58%	436	$37,790
Unemployed	28%	777	$917	42%	315	$917
Unemployed with UI benefits	15%	117	$6,110	15%	47	$6,110
Unemployed without UI benefits	85%	661	$0	85%	267	$0
Weighted average earnings with unemployment	72%	2807	$31,361	58%	751	$22,345

Ecosystem 6	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	73%	1408	$42,687	69%	558	$36,349
Unemployed	27%	509	$917	31%	253	$917
Unemployed with UI benefits	15%	76	$6,110	15%	38	$6,110
Unemployed without UI benefits	85%	433	$0	85%	215	$0
Weighted average earnings with unemployment	73%	1917	$31,587	69%	811	$25,316

Ecosystem 7	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	69%	575	$44,183	70%	281	$38,522
Unemployed	31%	254	$917	30%	121	$917
Unemployed with UI benefits	15%	38	$6,110	15%	18	$6,110
Unemployed without UI benefits	85%	216	$0	85%	103	$0
Weighted average earnings with unemployment	69%	829	$30,951	70%	402	$27,171

Ecosystem 8	Associate of Applied Science			Career and Technical Certificate		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	67%	2148	$41,975	69%	702	$33,817
Unemployed	33%	1042	$917	31%	310	$917
Unemployed with UI benefits	15%	156	$6,110	15%	47	$6,110
Unemployed without UI benefits	85%	886	$0	85%	264	$0
Weighted average earnings with unemployment	67%	3190	$28,559	69%	1012	$23,724

Source: SLDS and Lightcast Impact Model

* Numbers may not add due to rounding

Lightcast did not receive pre-program employment data for K-12 CTE participants, forcing Lightcast to use the assumption that no students were working or earning wages prior to program participation. Post-program participation was available, and results data for outcomes within the first year of graduation are used to calculate post-program earnings and subsequent increase in earnings in Table 4.3.

Table 4.3: Mississippi K-12 CTE Concentrators Pre- & Post-Program Earnings, PY 2022

K-12 CTE	Pre-Program Earnings			Post-Program Earnings (One Year)		
Employment Category	Percent	Participants	Earnings	Percent	Participants	Earnings
Employed	0%	0	$0	26%	2417	$15,848
Unemployed	100%	9168	$0	74%	6751	$917
Unemployed with UI benefits	0%	0	$6,110	15%	1013	$6,110
Unemployed without UI benefits	100%	9168	$0	85%	5738	$0
Weighted average earnings with unemployment	100%	9168	$0	26%	9168	$4,853

Source: SLDS and Lightcast Impact Model

* Numbers may not add due to rounding

There are other factors beyond participating in CTE programs that may have led to the participants' increased earnings. To account for this, conservative attribution factors are applied, which dampen each of the types of services provided to arrive at an adjusted increase in earnings.[3] In this scenario, Associate of Applied Science and Career and Technical Certificate courses at the community college K-12 level were assigned a 90% attribution factor, which is consistent with Lightcast methodology on workforce upskilling programs and projects, where veritable skills or certifications are received. Table 4.4 provides a breakdown of the number of participants in each type of service, the attribution factor applied to the earnings, and the adjusted increase in earnings.

Table 4.4: Associate of Applied Science, Career and Technical Certificate, and K-12 CTE Adjusted Increased Earnings from Training, AY23

Region -Program	Number of Participants	Pre-Program Earnings	Post-Program Earnings	Average Annual Increase in Earnings	Attribution Factor	Adjusted Annual Increase	Total Adjusted Increase in Earnings
E1 Associate of Applied Science	509	$7,706	$22,880	$15,174	90%	$13,656	$6,950,985
E1 Career and Tech. Cert.	91	$15,871	$30,846	$14,976	90%	$13,478	$1,226,505
E2 Associate of Applied Science	2,012	$11,795	$29,809	$18,013	90%	$16,212	$32,618,338
E2 Career and Tech. Cert.	733	$10,989	$20,009	$9,020	90%	$8,118	$5,950,294
E3 Associate of Applied Science	205	$10,388	$37,203	$26,815	90%	$24,134	$4,947,397
E3 Career and Tech. Cert.	213	$7,805	$15,946	$8,140	90%	$7,326	$1,560,520
E4 Associate of Applied Science	2,653	$14,205	$36,666	$22,462	90%	$20,215	$53,631,698
E4 Career and Tech. Cert.	670	$12,309	$22,651	$10,343	90%	$9,308	$6,236,618

[3] Given data limitations, the attribution factors are based on Lighcast assumptions. See Section 5 for a sensitivity analysis on how altering the attribution factor adjustments affect results.

Region -Program	Number of Participants	Pre-Program Earnings	Post-Program Earnings	Average Annual Increase in Earnings	Attribution Factor	Adjusted Annual Increase	Total Adjusted Increase in Earnings
E5 Associate of Applied Science	2,807	$12,503	$31,361	$18,858	90%	$16,972	$47,640,509
E5 Career and Tech. Cert.	751	$15,586	$22,345	$6,759	90%	$6,083	$4,568,338
E6 Associate of Applied Science	1,917	$11,028	$31,587	$20,558	90%	$18,502	$35,469,176
E6 Career and Tech. Cert.	811	$12,542	$25,316	$12,773	90%	$11,496	$9,323,376
E7 Associate of Applied Science	829	$10,042	$30,951	$20,909	90%	$18,818	$15,599,905
E7 Career and Tech. Cert.	402	$8,703	$27,171	$18,468	90%	$16,621	$6,681,596
E8 Associate of Applied Science	3,190	$9,995	$28,559	$18,564	90%	$16,708	$53,297,155
E8 Career and Tech. Cert.	1,012	$12,226	$23,724	$11,498	90%	$10,348	$10,472,192
All MS K-12 (AY22)	9,168	$0	$4,853	$4,853	90%	$4,368	$40,042,717

Source: SLDS and Lightcast Impact Model

The fifth column in Table 4.4 represents the base case, where no dampening has been applied. Without applying attribution factors, the total increase in annual earnings for all AY 2023 participants comes to approximately $374 million. After applying the attribution factor to service and summing up the total adjusted increase in earnings for each service, we arrive at a total increase in annual earnings of $336 million.

4.2 Growth in Regional Tax Revenues

The goal of participating in CTE programs is to gain verifiable skills, become more employable, and increase their real and potential earnings as a result. If successful, these increased earnings will continue to accrue into the future as long as the participants remain employed.[4] This, in turn, increases tax revenues since the state is able to apply state tax rates to higher earnings. The increased tax revenues have been projected 10 years into the future and are limited to the participants who remain in the region.

Estimating the effect of CTE programs on increased tax revenues begins with the present value of the participants' future 10-year earnings stream. For each year, we apply the prevailing tax rates, so we capture only the increased state tax revenues from the higher earnings. Not all of these tax revenues may be counted as benefits to the state, however. Some participants leave the state during the course of their careers, and the higher earnings they receive as a result of their training leaves the state with them. To account for this dynamic, we combine participant settlement data with data on migration patterns from the Census Bureau to estimate the number of participants who will leave the state workforce over time. Data for participant settlement was not available from SLDS, therefore Lightcast used a default assumption of

[4] Earnings are projected into the future using the Mincer function. See Appendix 4 for more information on the Mincer function and how it is used to predict future earnings growth.

100% in-state settlement rate, which assumes the post-program participants that data was available on were still in state when data was collected.

After adjusting for attrition, the present value of the future added tax revenues that occur in the state as a result of participants served in AY 2023 is calculated, resulting to approximately **$422** million. The present value represents the sum of the future benefits that accrue each year over the course of the time horizon, discounted to current year dollars to account for the time value of money. Given that the stakeholder in this case is the public sector, we use the discount rate of 0.1%. This is the real treasury interest rate recommended by the Office of Management and Budget (OMB) for 10-year investments, and in Section 5, we conduct a sensitivity analysis of this discount rate.[5]

Discount Rate

The discount rate is a rate of interest that converts future costs and benefits to present values. For example, $1,000 in higher earnings realized 10 years in the future is worth much less than $1,000 in the present. All future values must therefore be expressed in present value terms in order to compare them with investments (i.e., costs) made today. The selection of an appropriate discount rate, however, can become an arbitrary and controversial undertaking. As suggested in economic theory, the discount rate should reflect the investor's opportunity cost of capital, i.e., the rate of return one could reasonably expect to obtain from alternative investment schemes. In this study we assume a 0.1% discount rate.

4.3 Government Savings

In addition to the creation of higher regional tax revenues, training is statistically associated with a variety of lifestyle changes that generate social savings, also known as external or incidental benefits of training. These represent the avoided costs to the government that otherwise would have been drawn from public resources absent the training made possible by the CTE programs. For every level of education, the savings from avoided costs on the reduced number of unemployment insurance claims is applied. However, studies have found that for participants older than 18, the participants are most likely already committed to their social behaviors, such as smoking, alcohol consumption, obesity, mental health, drug abuse, and criminal activities. This trend is increasingly true further beyond the age of 18[6]. Thus, it is not assumed that participants will change these social behaviors because of their experience in CTE programs, resulting in minimal additional government savings.

In total, the government savings associated with programs for younger populations are still, on average, positive. In the model, programs targeting students pre-high school diploma or GED

[5] Office of Management and Budget. "Circular A-94 Appendix C." *Real Interest Rates on Treasury Notes and Bonds of Specified Maturities (in Percent)*. https://www.whitehouse.gov/wp-content/uploads/2017/11/DISCHIST-2018-1.pdf.

[6] For a full list of the data sources used to calculate the social externalities, see the Resources and References section.

are considered for this qualification, and the model attributes more likelihood for lifestyle change to them. The K-12 CTE program qualifies for this attribution, thus receiving the increased lifestyle change model attributes.

The model quantifies government savings by calculating the probability at the less than high school and high school education levels that individuals will have poor health, commit crimes, or claim welfare and unemployment benefits. Deriving the probabilities involves assembling data from a variety of studies and surveys analyzing the correlation between training and health, crime, welfare, and unemployment at the national and state levels. We dampen these results by the ability bias adjustment to account for factors (besides training) that influence individual behavior. We then multiply the marginal effects of training times the associated costs of health, crime, welfare, and unemployment.[7] Finally, we apply the same adjustments for attrition to derive the net savings to the government.

Table 4.5 displays the present value of all benefits to taxpayers in AY 2023 coming from the CTE programs. The first column shows the added tax revenues created in the region from participants' higher earnings. A breakdown in government savings by health, crime, and welfare/unemployment-related savings appears next. These savings continue to accrue in the future as long as the PY 2023 participants remain in the workforce.

[7] For a full list of the data sources used to calculate the social externalities, see the Resources and References section.

Table 4.5: Present Value of Added Tax Revenue and Government Savings (millions), PY 2023

Region - Program	Added Tax Revenue	Health Related Savings	Crime Related Savings	Welfare/ Unemployment Related Savings	Total Gov't Savings	Total Taxpayer Benefits
E1 Associate of Applied Science	$10.60	($0.25)	$0.57	$0.11	$0.44	$11.04
E1 Career and Tech. Cert.	$1.75	($0.06)	$0.09	$0.03	$0.06	$1.81
E2 Associate of Applied Science	$46.38	($0.97)	$2.15	$0.43	$1.61	$47.98
E2 Career and Tech. Cert.	$8.41	($0.44)	$0.69	$0.20	$0.45	$8.86
E3 Associate of Applied Science	$7.01	($0.10)	$0.22	$0.04	$0.16	$7.17
E3 Career and Tech. Cert.	$2.21	($0.13)	$0.19	$0.06	$0.12	$2.33
E4 Associate of Applied Science	$76.14	($1.28)	$2.90	$0.58	$2.20	$78.34
E4 Career and Tech. Cert.	$8.83	($0.41)	$0.63	$0.18	$0.41	$9.24
E5 Associate of Applied Science	$68.35	($1.33)	$3.17	$0.63	$2.47	$70.82
E5 Career and Tech. Cert.	$6.58	($0.45)	$0.75	$0.22	$0.52	$7.10
E6 Associate of Applied Science	$50.61	($0.94)	$2.07	$0.41	$1.55	$52.16
E6 Career and Tech. Cert.	$13.22	($0.50)	$0.77	$0.23	$0.50	$13.72
E7 Associate of Applied Science	$22.26	($0.40)	$0.90	$0.18	$0.67	$22.93
E7 Career and Tech. Cert.	$9.51	($0.25)	$0.37	$0.11	$0.24	$9.75
E8 Associate of Applied Science	$75.29	($1.52)	$3.43	$0.69	$2.60	$77.89
E8 Career and Tech. Cert.	$14.99	($0.61)	$0.99	$0.29	$0.67	$15.66
Mississippi Statewide Present Value of Added Tax Revenue and Government Savings						
Associate of Applied Science	**$356.64**	**($6.79)**	**$15.41**	**$3.08**	**$11.70**	**$368.33**
Career and Tech. Cert.	**$65.50**	**($2.84)**	**$4.48**	**$1.31**	**$2.95**	**$68.46**
K-12 CTE	**$60.90**	**($4.78)**	**$8.44**	**$1.69**	**$5.36**	**$66.25**

Source: Lightcast Impact Model

4.4 Return on Investment to Mississippi Taxpayers

In the first column of Table 4.6 the first data column is the Net Present Value (NPV) (Taxpayer Benefits – Costs, sum per year). Next, the Internal Rate of Return (IRR) of this NPV over the next ten years is derived. Using the cumulative Taxpayer Benefits divided by the Costs, we arrive at the BCR in the next column. The Return on Investment (ROI) is calculated by dividing the NPV by the Costs. Lastly, the Payback Period is searching through the year over year cumulative cash flow (sum of Net Cash Flow, annually) until the cumulative cash flow is greater than the initial costs of the investment. If cumulative cash flow did not exceed initial costs within the 10-year period, then a result of 'N/A' is returned by the model.

Taxpayers return on investment for AY 2023 are reported in Table 4.6. Not accounting K-12 investment and results, net present value comest to $437 million ($422 million in added taxes + $15 million in government savings).[8] Regional taxpayers are rewarded with an investment benefit-cost ratio of 3.14 (= $437 million ÷ $139 million), indicating an increase in profit.[9] In other words, for every dollar spent funding the CTE programs in Mississippi, the state's taxpayers will see a gain of $3.14 over the next 10 years. Due to K-12's intrinsically low net present value due to K-12 graduates often not entering the workforce, commentary was directed towards the community college results.

Table 4.6: Projected Benefits and Costs, Taxpayer Perspective, PY 2023 in Millions

Region - Program	Net Present Value (NPV)	Internal Rate of Return (IRR)	Benefit/Cost Ratio (B/C)	Return on Investment (ROI)	Payback Period (Years)
E1 Associate of Applied Science	$6.15	24.0%	2.26	1.26	4.5
E1 Career and Tech. Cert.	$0.94	18.5%	2.07	1.07	5.2
E2 Associate of Applied Science	$31.03	30.2%	2.83	1.83	3.9
E2 Career and Tech. Cert.	$2.68	8.0%	1.43	0.43	7.2
E3 Associate of Applied Science	$3.22	14.8%	1.81	0.81	5.7
E3 Career and Tech. Cert.	($1.78)	(7.5%)	0.57	(0.43)	N/A*
E4 Associate of Applied Science	$62.71	61.9%	5.01	4.01	2.6
E4 Career and Tech. Cert.	$5.29	22.5%	2.34	1.34	4.7
E5 Associate of Applied Science	$61.17	96.4%	7.34	6.34	2.0
E5 Career and Tech. Cert.	$4.52	27.7%	2.75	1.75	4.2
E6 Associate of Applied Science	$35.32	34.2%	3.10	2.10	3.7
E6 Career and Tech. Cert.	$6.60	16.2%	1.93	0.93	5.5
E7 Associate of Applied Science	$16.22	38.9%	3.42	2.42	3.4
E7 Career and Tech. Cert.	$6.50	32.8%	3.00	2.00	3.7
E8 Associate of Applied Science	$50.26	30.0%	2.82	1.82	4.0
E8 Career and Tech. Cert.	$6.89	13.9%	1.79	0.79	5.9
All MS K-12 CTE	($39.60)	(5.7%)	0.63	(0.37)	N/A*

Source: Lightcast Impact Model

[8] Only funding directly related to the programs analyzed were included for taxpayer costs.

[9] Note that the beneficiaries are not necessarily the same as the original investors. Nonetheless, the benefit-cost ratio provides an indicator on the return on investment of the programs provided by CareerSource Central Louisiana.

*Taxpayer payback period extended beyond 10-year impact modeling for cumulative cash flow to exceed initial investment

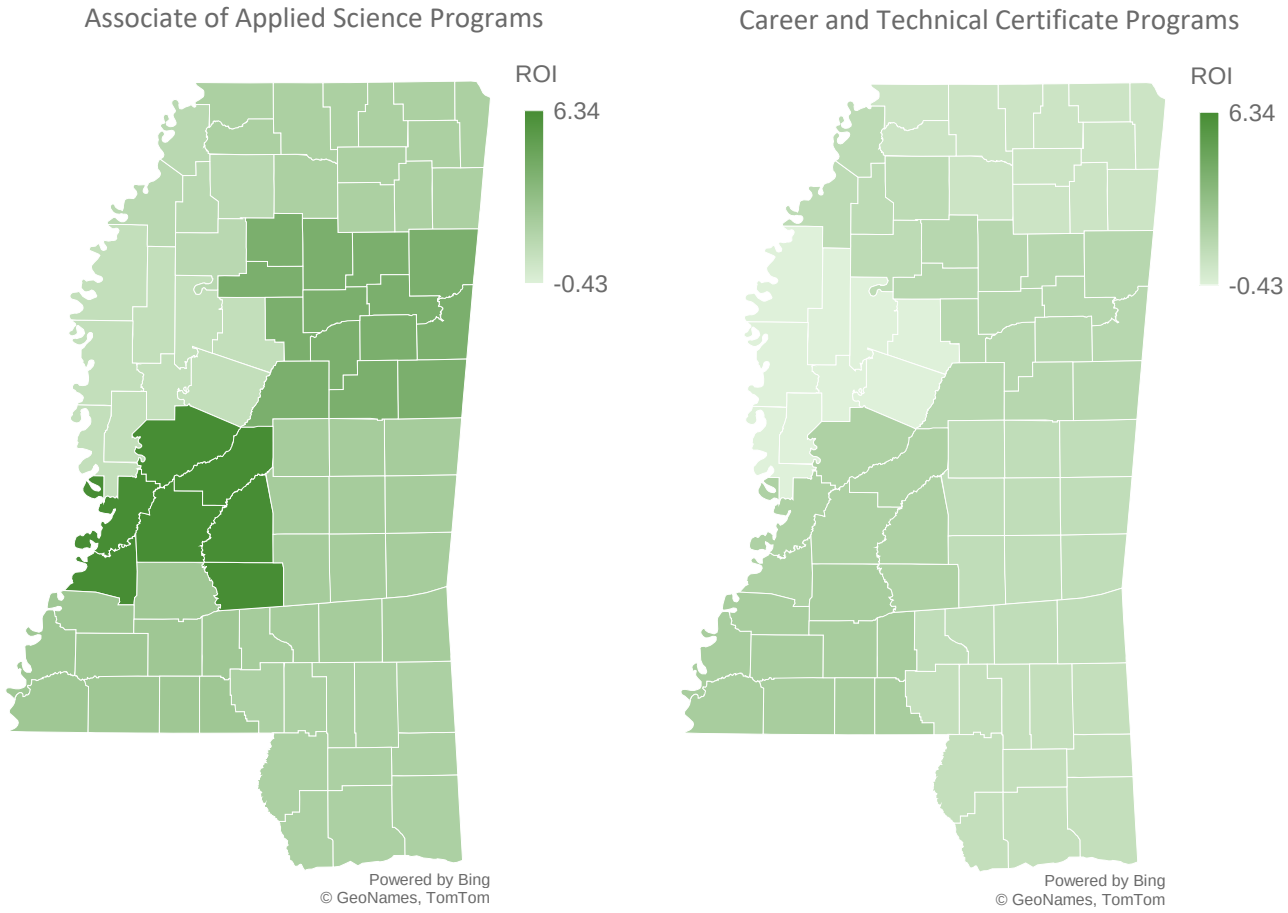
There are many factors that contribute to a higher or lower benefit-cost ratio, but the three key factors are pre and post program earnings, pre and post program unemployment, and amount of investment in program operations costs. Significant improvement or lack thereof will influence this ratio greatly in a positive or negative direction. Nonetheless, it is important to keep in mind that a variety of successful outcomes exist in these programs that do not include gainful employment—enrolling into post-secondary education and entering the job-market after searching for a while are examples of successful outcomes that cannot be quantified.

Many regions experienced benefit-cost ratios between 2.00 and 3.50, but there were some exceptions as well. The benefit-cost ratios in Ecosystem 5's Associate of Applied Science programs is 7.34, and a return on investment of 6.3. Similarly, Ecosystem 4's Associate of Applied Science programs have a BCR and ROI of 5.01 and 4.0, respectively. For these regions, strong indicators of positive return should be celebrated and examined for transferable practices or strategies to other ecosystems statewide. Both programs had very strong enrollment numbers and strong growth in earnings post-program. These factors combined to provide high tax revenue figures: the largest contributor to the total benefits calculated in the model.

On the other hand, the benefit-cost ratio of the Ecosystem 3 Career and Technical Certificate programs fell below one (0.57). While many factors influence the final ratio, further analysis suggests that most likely causes are higher unemployment rates post-program, coupled with a lower gain in annual earnings post-program compared to other CTE programs. This could be due to several factors, such as lack of availability of jobs in the labor market, misalignment of program offerings with regional job and skill demands, or recent economic hardship in the region.

It is worth noting that for both exceptionally high and low BCR and ROI programs, the investment in terms of operating costs were not correlated to a high or lower measure of return or benefit. That is, it wasn't consistent that Ecosystems that spent more on their programs had lower BCR and ROI values, and vice versa. As reported in the next section, Ecosystem 5 had the third lowest total expenditure, while Ecosystem 4 spent the third most on their programs. Likewise, Ecosystem 3 spent the second least on their programs by a thin margin more than Ecosystem 1, but low investment values did not lead to favorable outcomes in terms of benefit-cost ratio or return on investment.

Figure 4.1: Benefit-Cost Ratio of Associate of Applied Science and Career and Technical Certificate Programs in Community Colleges Across Mississippi, by Ecosystem



5 Regional Economic Impact of Community College and K-12 CTE Program Operations

CTE programs impact the county's economy and consequently Mississippi's economy in a variety of ways. School districts and colleges are employers and buyers of goods and services. It brings new money into the region through its operations that otherwise would not have entered the regional economy, with its program-specific funding stemming from federal sources. This section provides an overview of economic impact terminology and then discusses the economic impact of CTE program operations.

5.1 Economic Impact Terminology

For this analysis, we consider the following hypothetical question:

How would economic activity change in the region if CTE programs did not exist in AY 2023?

To answer this question, net impact is measured rather than gross impact. Gross impacts represent an upper-bound estimate in terms of capturing all activity stemming from the organization. Net impacts reflect a truer measure since they demonstrate what would not have existed in the regional economy if not for the organization.

Economic impact analyses use different types of impacts to estimate results. The impact focused on in this study assesses the change in income; however, multiple measures of impact are calculated. This measure is similar to the commonly used gross regional product (GRP). Income may be further broken out into the **labor income impact**, also known as earnings, which assesses the change in employee compensation; and the **non-labor income impact**, which assesses the change in business profits. Together, labor income and non-labor income sum up the total income.

Another way to state the impact is in terms of **jobs**, a measure of the number of full- and part-time jobs that would be required to support the change in income. Finally, a frequently used measure is the **sales impact**, which comprises the change in business sales revenue in the economy as a result of increased economic activity. It is important to bear in mind, however, that much of this sales revenue leaves the regional economy through intermediary transactions and costs.[10] All of these measures – added labor and non-labor income, total income, jobs, and sales – are used to estimate the economic impact results presented in this section. The analysis breaks out the impact measures into different components, each based on the economic effect that caused the impact. The following is a list of each type of effect presented in this analysis:

[10] See Appendix 2 for an example of the intermediary costs included in the sales impact but not in the income impact.

- The **initial effect** is the exogenous shock to the economy caused by the initial spending of money, whether to pay for salaries and wages, purchase goods or services, or cover operating expenses.
- The initial round of spending creates more spending in the economy, resulting in what is commonly known as the **multiplier effect**. The multiplier effect comprises the additional activity that occurs across all industries in the economy and may be further decomposed into the following three types of effects:
  - The **direct effect** refers to the additional economic activity that occurs as the industries affected by the initial effect spend money to purchase goods and services from their supply chain industries.
  - The **indirect effect** occurs as the supply chain of the initial industries creates even more activity in the economy through their own inter-industry spending.
  - The **induced effect** refers to the economic activity created by the household sector as the businesses affected by the initial, direct, and indirect effects raise salaries or hire more people.

The terminology used to describe the economic effects listed above differs slightly from that of other commonly used input-output models, such as IMPLAN. For example, the initial effect in this study is called the "direct effect" by IMPLAN, as shown in the table below. Further, the term "indirect effect" as used by IMPLAN refers to the combined direct and indirect effects defined in this study. To avoid confusion, readers are encouraged to interpret the results presented in this section in the context of the terms and definitions listed above. Note that, regardless of the effects used to decompose the results, the total impact measures are analogous.

Lightcast	Initial	Direct	Indirect	Induced
IMPLAN	Direct	Indirect		Induced

Multiplier effects in this analysis are derived using Lightcast's Multi-Regional Social Accounting Matrix (MR-SAM), which is an input-output model that captures the interconnection of industries, government, and households in the region. The Lightcast MR-SAM contains approximately 1,000 industry sectors at the highest level of detail available in the North American Industry Classification System (NAICS) and supplies the industry-specific multipliers required to determine the impacts associated with increased activity within a given economy. For more information on the Lightcast MR-SAM model and its data sources, see Appendix 3.

5.2 Economic Impact of Mississippi's CTE Investment

Table 5.1 presents Community College and K-12 expenditures broken down across a variety of categories. The first step in estimating the multiplier effects of the organization's operational expenditures is to map these categories of expenditures to the approximately 1,000 industries of the Lightcast MR-SAM model. Assuming that the spending patterns of the organization personnel approximately match those of the average consumer, we map salaries, wages, and

benefits to spending on industry outputs using national household expenditure coefficients supplied by Lightcast's MR-SAM. For the other expenditure categories, we map the spending patterns to the appropriate industry sectors. For example, the professional services category is mapped to travel-related industries as well as professional-related industries such as the Payroll Services industry.

Table 5.1: Operation Spending by Location, Type and Cost, After Adjusting for Leakage (Thousands), PY 2023

Region-Program	Payroll	Non-Pay Expen.	Prof. Services (Including Travel)	Supplies	Facilities Expenses	Third-Party Contractors	Training Services	All Other Expen.	Total
E1 CTE	$2,563	$6,542	$0	$197	$0	$391	$127	$5,827	$9,105
E2 CTE	$12,372	$17,084	$0	$843	$0	$279	$787	$15,175	$29,456
E3 CTE	$4,500	$5,622	$0	$826	$0	$219	$313	$4,264	$10,123
E4 CTE	$9,165	$14,995	$0	$966	$0	$230	$721	$13,078	$24,160
E5 CTE	$9,225	$6,551	$0	$186	$0	$16	$437	$5,912	$15,776
E6 CTE	$10,958	$16,935	$0	$1,267	$0	$667	$500	$14,502	$27,893
E7 CTE	$4,437	$7,542	$0	$530	$0	$33	$256	$6,723	$11,979
E8 CTE	$14,777	$22,000	$0	$1,791	$0	$993	$606	$18,610	$36,777
MS K-12 CTE (AY 2022)	$2,315	$103,539	$226	$47	$101,328	$1,937	$0	$0	$105,853

Source: Mississippi Department of Education, Mississippi Community College Board, Lightcast Impact Model

We now have seven (eight for K-12 CTE) expenditure vectors for CTE programs. The next step is to estimate the portion of these expenditures that occur inside the region. The expenditures occurring outside the region are known as leakages. For the model, we assume all CTE program employees work within the state, and therefore we consider 100% of the expenditures for employee salaries, wages, and benefits as being initially spent in the region. We estimate in-region expenditures for the non-pay categories using regional purchase coefficients (RPCs), a measure of the overall demand for the commodities produced by each sector that is satisfied by regional suppliers for each of the approximately 1,000 industries in the MR-SAM model.[11]

For example, if 40% of the demand for NAICS 541211 (Offices of Certified Public Accountants) is satisfied by regional suppliers, the RPC for that industry is 40%. The remaining 60% of the demand for NAICS 541211 is provided by suppliers located outside the region. The seven vectors of expenditures are multiplied, industry by industry, by the corresponding RPC to arrive at the in-region expenditures associated with the organization. Finally, in-region spending is entered, industry by industry, into the MR-SAM model's multiplier matrix, which in turn provides an estimate of the associated multiplier effects on regional labor income, non-labor income, total income, sales, and jobs.

[11] See Appendix 3 for a description of Lighcast's MR-SAM model.

Table 5.2 presents the economic impact of the organization's operations spending. The people employed to operate CTE programs, and their salaries, wages, and benefits comprise the initial effect, shown in the top row of the table in terms of labor income, non-labor income, total added income, sales, and jobs. The additional impacts created by the initial effect appear in the next three rows of the table as the *multiplier effect*. Summing up the initial and multiplier effects, the net impacts are $97.3 million in labor income $26.0 million in non-labor income. This has a total impact of $123.4 million in total added income associated with the spending of its employees in the region. In addition, the initial and subsequent multiplier effects of sales impacts of operational purchases of goods and services equal an additional $674.3 million.

In Table 5.2, the economic impact of operations and staffing were not analyzed and reported on. Data limitations did not allow for the operations spending impact to be fully calculated due to the data being in aggregate form, as well as staffing data not being provided. Without information regarding the number of employees operating programs, nor whether they reside in region, it is not possible to measure the full initial, direct, and indirect effects upon a workforce with a population size of zero. We can, however, use the operations budget to make a conservative estimate on the impact on the values provided in Table 5.2.

Table 5.2: Operations Spending Impact (Thousands), PY 2023

Effect	Jobs	Labor	Non-Labor	Value Added	Sales
Initial effect	N/A*	N/A*	N/A*	N/A*	$436,391
Direct effect	1,207	62,299	$25,887	88,186	$170,925
Indirect effect	257	$12,625	$22,564	$35,189	$66,959
Induced effect	433	$22,420	-$22,419	$1	$0
Total Net Effect	1,897	$97,343	$26,032	$123,376	$674,276

Source: Lightcast Impact Model

*Data not provided by AccelerateMS data providers

6 Recommendations

While demanding positive returns in BCR and ROI on CTE programs may not be the explicit goal at the outset of creating programs, it is an indicator of success. This lack of success compared to the other Ecosystems indicates that participants are not finding employment and increased wages at the same rate as other CTE participants in other Ecosystems. Low BCR also indicates that the economy of that ecosystem is missing out on the benefits of income, taxes, and improved quality of life that other ecosystems are experiencing. It is recommended that further analysis be taken to examine the effectiveness of program offerings in struggling regions. Quantitative and qualitative are recommended to determine what issues exist, both data apparent and non-data apparent. Such analysis can include:

- Surveying stakeholders on the effectiveness of programs in these regions. Potential survey targets include program providers, program participants, and key employers who could hire them from these programs.
- Data analysis on economic opportunities or lack thereof in these regions, as well as analyzing struggling programs to determine if there is a lack of job opportunities for program participants acquiring certain skills that may not be in demand in the region.

It is recommended to investigate what the outcomes are for specific programs within the broader program definitions of Associate of Applied Science and Career and Technical Education. This can be especially informative for Ecosystems where particularly high or low ROI or BCR was observed. From there, the following questions can be explored:

- High ROI and BCR Ecosystems: can their individual program successes be replicated elsewhere? What barriers prevent this from happening currently?
- Low ROI and BCR Ecosystems: what individual program offerings are lowering ROI and BCR results? Should these programs be altered, removed, or deprioritized in favor of programs that provide higher ROI and BCR, and thus hopefully improve quality of life for participants after program completion?

It is also recommended that continued analysis of ROI and BCR be performed for CTE programs in the coming years. While this report informs on the current state of return on investment, a single snapshot cannot provide directional cues on if returns for a particular ecosystem are improving or regressing. Such directional cues would provide context that may alter the views and opinions of a particular ecosystem that may appear to be struggling or thriving in a single-year snapshot.

7 Conclusion

While the value of CTE programs to Mississippi are larger than simply its economic impact, understanding the dollar and cents value is an important asset to understanding the organization's value. This report has evaluated the organization from the perspectives of economic impact analysis and investment analysis.

From an economic impact perspective, we calculated that the return on investment into CTE programs, demonstrated in Benefit-Cost Ratio, ranges from 0.57 to 7.34, with most clustering around a BCR of 3.0. Additionally, we calculated that CTE programs generate a total economic impact of $422 million in total added income for the statewide economy over the next 10 years.

Modeling the benefits of the organization is subject to many factors, the variability of which we considered in our sensitivity analysis. With this variability accounted for, we present the findings of this study as a robust picture of the economic value of community college and K-12 CTE programs.

These impacts not only serve the local economy, through the employees and the added tax revenue, but create a ripple effect throughout the economy and the state that would have otherwise not occurred in the same proportion as it did. The better placement of these workers in the workforce leads to higher wages which in turn leads to consumption and an improvement of the overall economy, thus bringing even more value to Mississippi.

8 Data Limitations

In the data gathering process for this report, not all datapoints were provided, or provided in granular enough detail to fully model the economic impact of CTE programs statewide. Data for K-12 CTE programs was aggregated, with only state-level operations spending data provided without further detail on expenditure. This prevented K-12 CTE's to be analyzed at the Ecosystem level, forcing state-level aggregation and reporting. Program employment data was also not provided, citing that the impact of the workforce used to train the next generation of workforce was not desired in reporting. Participants experiencing barriers to workforce participation (Homelessness, Offender, Pregnancy, SNAP recipients, Veterans, etc.) were not provided except for in the aggregate, and only for post-program participants who graduated, not pre-program enrollers.

Pre-program employment figures were not available for K-12 CTE participants, forcing the assumed value to be that no students worked or earned wages prior to enrollment in CTE programs. If in future iterations of this report, should this data be available, further nuance and context could be provided on whether student hourly wage potential is positively influenced by CTE programs.

Post-program results on whether participants remained in the region post-program completion was also not provided. This forced Lightcast to hold an assumption of 100% retention for participants who completed the program and had employment data available. Future inclusion of this data could potentially change return on investment values for any region where participants leave the region for employment elsewhere in significant volume.

Additionally, funding was aggregated to the CTE and not disaggregated to Associate of Applied Science and Career and Technical Certificate levels. Funding was modeled based on enrollment per Ecosystem, and funds were distributed accordingly. Additionally, data from SLDS was requested and analyzed at the Ecosystem level, not at individual community colleges. This means that for Ecosystems for multiple community colleges, or a community college that spans two Ecosystems, there is some uncertainty in their role for the final impact values in each Ecosystem.

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Appendix 1: Data Provided by Mississippi State Longitudinal Data System

Data in the following appendix, and used to inform analysis reporting in this paper, is provided by NSPARC. NSPARC is a university research center at Mississippi State University. They specialize in use-inspired research, data analytics, and software architecture and development. Their research emphasizes workforce and economic development but also covers a broad range of topics in education, economics, health, human services, and corrections.

Data for this study came from Mississippi's State Longitudinal Data System (SLDS), which includes administrative records from more than 25 state agencies. Data from the following SLDS data contributors were used:

Mississippi Department of Education – Data from Mississippi's public schools are contributed to the SLDS by the Mississippi Department of Education (MDE). These data include information on enrollment, school, grade, course, and graduation.

Mississippi Department of Employment Security – Employer wage records are contributed to the SLDS by the Mississippi Department of Employment Security (MDES). Employer wage records are collected from Mississippi employers that participate in the state's covered employment system. Data fields include information on quarterly earnings, company of employment, industry of employment, and county location of employer.

Mississippi Community Colleges – Data on community college graduates are contributed to the SLDS by Mississippi's 15 community colleges and the Mississippi Community College Board (MCCB). These data include information on enrollment, county of residence, academic major, and graduation.

Mississippi Public Universities – Data on 4-year public university graduates are contributed to the SLDS by Mississippi's eight public universities and the Institutions for Higher Learning (IHL). These data include information on enrollment, county of residence, academic major, and graduation.

Note: This analysis uses five years to present a comprehensive picture of students and student outcomes before, during, and after the academic interruptions caused by COVID-19.

Values reported for race and gender categories do not equal the reported total due to gender and/or race not being reported in all cases.

A1.1 Community College CTE Data

A1.1.1 Community College CTE Student Enrollment; Number of Students Enrolled in an Associate of Applied Science or Career and Technical Certificate Program

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***20,447***	***20,855***	***19,852***	***19,315***	***18,805***	***19,855***
Gender						
Female	10,460	10,649	10,508	10,265	10,119	10,400
Male	9,931	10,092	9,262	9,030	8,661	9,395
Race						
Black	8,843	8,750	8,037	8,249	8,190	8,414
White	10,186	10,359	10,214	9,562	9,060	9,876
Other	1,023	1,136	1,142	1,129	1,144	1,115
Race_Gender						
Black, Female	4,922	4,976	4,639	4,779	4,939	4,851
Black, Male	3,909	3,749	3,373	3,465	3,241	3,547
White, Female	4,926	4,961	5,149	4,769	4,465	4,854
White, Male	5,230	5,341	5,029	4,784	4,585	4,994
Other, Female	504	563	586	576	576	561
Other, Male	516	564	552	553	567	550
Ecosystem of College						
Ecosystem 1	562	540	511	588	600	560
Ecosystem 2	2,411	2,387	2,534	2,894	2,745	2,594
Ecosystem 3	570	557	482	466	418	499
Ecosystem 4	3,460	3,506	3,162	3,224	3,323	3,335
Ecosystem 5	4,603	4,553	3,860	3,904	3,558	4,096
Ecosystem 6	2,991	3,002	3,148	2,716	2,728	2,917
Ecosystem 7	1,373	1,454	1,274	1,154	1,231	1,297
Ecosystem 8	4,477	4,856	4,881	4,369	4,202	4,557
WIOA Region of College						
Delta	1,132	1,097	993	1,054	1,018	1,059
MS Partnership	5,871	5,893	5,696	6,118	6,068	5,929
South Central	5,976	6,007	5,134	5,058	4,789	5,393
Twin Districts	7,468	7,858	8,029	7,085	6,930	7,474

A1.1.2 Community College CTE Graduates; Number of Students Graduating with an Associate of Applied Science Degree or a Career and Technical Certificate

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***8,002***	***8,077***	***7,996***	***7,283***	***7,545***	***7,781***
Gender						
Female	4,228	4,170	4,235	3,868	4,055	4,111
Male	3,689	3,654	3,553	3,178	3,289	3,473
Race						
Black	3,127	2,886	2,880	2,642	2,980	2,903
White	4,357	4,204	4,285	3,914	3,808	4,114
Other	333	395	402	367	443	388
Race_Gender						
Black, Female	1,739	1,677	1,685	1,517	1,803	1,684
Black, Male	1,386	1,207	1,192	1,120	1,175	1,216
White, Female	2,287	2,222	2,284	2,096	1,969	2,172
White, Male	2,058	1,963	1,989	1,816	1,833	1,932
Other, Female	176	203	211	208	236	207
Other, Male	156	190	190	159	207	180
Ecosystem of College						
Ecosystem 1	396	314	354	280	115	292
Ecosystem 2	948	913	999	837	1,154	970
Ecosystem 3	333	369	341	273	327	329
Ecosystem 4	848	858	877	1,011	1,259	971
Ecosystem 5	2,087	2,371	2,117	1,893	1,600	2,014
Ecosystem 6	1,181	1,133	1,074	948	1,117	1,091
Ecosystem 7	514	493	491	458	554	502
Ecosystem 8	1,695	1,626	1,743	1,583	1,419	1,613
WIOA Region of College						
Delta	729	683	695	553	442	620
MS Partnership	1,796	1,771	1,876	1,848	2,413	1,941
South Central	2,601	2,864	2,608	2,351	2,154	2,516
Twin Districts	2,876	2,759	2,817	2,531	2,536	2,704

A1.1.3 Enrollment in a Mississippi Public University; Number of Community College CTE Graduates who Enrolled in a Mississippi Public University within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***450***	***450***	***467***	***436***	***427***	***446***
Gender						
Female	292	291	291	279	269	284
Male	154	157	175	155	158	160
Race						
Black	214	212	207	185	205	205
White	204	207	225	227	177	208
Other	27	26	28	19	38	28
Race_Gender						
Black, Female	154	157	153	135	149	150
Black, Male	60	55	54	49	56	55
White, Female	120	120	119	129	98	117
White, Male	83	87	105	98	79	90
Other, Female	17	14	17	13	19	16
Other, Male	10	12	11	<10	19	12
Ecosystem of College						
Ecosystem 1	19	15	21	10	12	15
Ecosystem 2	58	67	57	62	62	61
Ecosystem 3	29	27	26	23	21	25
Ecosystem 4	48	60	55	74	91	66
Ecosystem 5	102	108	105	97	86	100
Ecosystem 6	85	74	72	54	71	71
Ecosystem 7	22	23	18	23	17	21
Ecosystem 8	87	76	113	93	67	87
WIOA Region of College						
Delta	48	42	47	33	33	41
MS Partnership	106	127	112	136	153	127
South Central	124	131	123	120	103	120
Twin Districts	172	150	185	147	138	158

A1.1.4 Community College CTE Program-to-University Alignment; Number of Enrolled Community College CTE Graduates with Aligned Major

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***254***	***269***	***273***	***240***	***216***	***250***
Gender						
Female	182	197	197	177	161	183
Male	70	71	76	62	55	67
Race						
Black	104	115	121	102	97	108
White	130	136	134	124	99	125
Other	18	16	14	14	16	16
Race_Gender						
Black, Female	83	94	91	82	76	85
Black, Male	21	21	30	19	21	22
White, Female	87	92	93	84	71	85
White, Male	42	44	41	40	28	39
Other, Female	12	11	12	11	11	11
Other, Male	<10	<10	<10	<10	<10	<10
Ecosystem of College						
Ecosystem 1	<10	<10	<10	<10	<10	<10
Ecosystem 2	36	50	34	40	24	37
Ecosystem 3	19	19	19	18	17	18
Ecosystem 4	25	39	32	42	46	37
Ecosystem 5	49	50	59	37	40	47
Ecosystem 6	55	51	37	34	38	43
Ecosystem 7	11	14	14	13	<10	12
Ecosystem 8	50	42	69	52	37	50
WIOA Region of College						
Delta	28	23	28	22	23	25
MS Partnership	61	89	66	82	70	74
South Central	60	64	73	50	48	59
Twin Districts	105	93	106	86	75	93

A1.1.5 Employment of Community College CTE Graduates; Number of Community College CTE Graduates Employed within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***4,890***	***4,975***	***4,942***	***4,612***	***4,865***	***4,857***
Gender						
Female	2,652	2,565	2,595	2,462	2,636	2,582
Male	2,191	2,293	2,228	2,021	2,121	2,171
Race						
Black	1,822	1,695	1,690	1,640	1,890	1,747
White	2,778	2,723	2,762	2,564	2,558	2,677
Other	178	215	220	211	249	215
Race_Gender						
Black, Female	1,008	951	948	921	1,150	996
Black, Male	813	743	740	716	738	750
White, Female	1,528	1,455	1,495	1,401	1,334	1,443
White, Male	1,243	1,255	1,261	1,162	1,221	1,228
Other, Female	102	119	118	116	128	117
Other, Male	76	96	102	95	121	98
Ecosystem of College						
Ecosystem 1	233	165	187	161	80	165
Ecosystem 2	595	576	630	539	718	612
Ecosystem 3	195	217	194	162	168	187
Ecosystem 4	498	491	525	597	844	591
Ecosystem 5	1,271	1,494	1,332	1,242	1,012	1,270
Ecosystem 6	730	718	727	630	759	713
Ecosystem 7	345	333	324	305	394	340
Ecosystem 8	1,023	981	1,023	976	890	979
WIOA Region of College						
Delta	428	382	381	323	248	352
MS Partnership	1,093	1,067	1,155	1,136	1,562	1,203
South Central	1,616	1,827	1,656	1,547	1,406	1,610
Twin Districts	1,753	1,699	1,750	1,606	1,649	1,691
Industry						
Accommodation/Leisure	333	383	329	292	335	334
Administrative and Waste Services	308	309	300	294	315	305
Construction	277	257	293	277	320	285
Educational Services	99	87	109	81	129	101
Financial Activities	63	55	70	84	83	71
Health Care and Social Assistance	1,973	1,831	1,863	1,766	1,832	1,853
Information	18	24	13	13	22	18
Management of Companies and Enterprises	16	15	13	22	17	17
Manufacturing	512	466	496	483	459	483
Natural Resources	43	33	33	28	23	32
Other Services (except Public Administration)	118	106	100	106	124	111
Professional, Scientific, and Technical Services	109	120	119	103	118	114
Public Administration	79	85	68	77	105	83
Transportation and Warehousing	289	476	384	377	319	369
Utilities	22	17	24	37	39	28
Wholesale/Retail Trade	622	701	719	568	623	647
Industry not reported	<10	10	<10	<10	<10	<10

A1.1.6 Average Annualized Earnings; Earnings of Community College CTE Graduates Employed within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***$31,207***	***$31,181***	***$33,291***	***$36,988***	***$39,867***	***$34,206***
Gender						
Female	$31,772	$31,028	$31,780	$34,920	$39,439	$33,460
Male	$30,685	$31,117	$34,711	$38,552	$40,001	$34,839
Race						
Black	$26,347	$26,865	$29,916	$32,791	$36,392	$30,287
White	$34,000	$33,917	$35,141	$39,406	$42,015	$36,736
Other	$30,502	$30,640	$31,124	$34,815	$35,446	$32,545
Race_Gender						
Black, Female	$26,650	$26,878	$29,126	$31,270	$36,959	$30,428
Black, Male	$26,097	$26,478	$31,550	$34,481	$35,712	$30,238
White, Female	$33,656	$34,273	$33,777	$36,827	$41,432	$35,845
White, Male	$34,282	$33,845	$36,826	$41,261	$43,070	$37,636
Other, Female	$33,272	$31,142	$29,851	$36,401	$30,698	$31,555
Other, Male	$27,095	$28,893	$33,053	$33,515	$40,685	$33,401
Ecosystem of College						
Ecosystem 1	$23,379	$31,509	$30,147	$34,266	$36,703	$29,901
Ecosystem 2	$32,123	$33,498	$34,619	$37,720	$36,951	$34,775
Ecosystem 3	$31,602	$34,321	$35,575	$40,005	$38,015	$35,491
Ecosystem 4	$32,819	$32,468	$34,352	$37,244	$41,670	$35,874
Ecosystem 5	$30,658	$30,951	$33,322	$37,654	$40,331	$33,901
Ecosystem 6	$32,198	$30,479	$33,287	$35,754	$39,520	$33,846
Ecosystem 7	$28,539	$30,268	$31,609	$36,400	$40,467	$33,475
Ecosystem 8	$32,290	$29,248	$32,094	$36,315	$39,964	$33,600
WIOA Region of College						
Delta	$27,384	$32,499	$33,349	$36,106	$37,703	$32,791
MS Partnership	$32,390	$32,805	$34,445	$37,500	$39,538	$35,405
South Central	$30,156	$30,879	$33,122	$37,501	$40,334	$33,802
Twin Districts	$32,249	$29,743	$32,547	$36,000	$39,788	$33,693
Industry						
Accommodation/Leisure	$15,027	$13,854	$16,245	$18,284	$17,088	$15,708
Administrative and Waste Services	$22,847	$20,670	$28,507	$27,560	$35,329	$26,871
Construction	$30,109	$29,699	$32,675	$37,996	$39,326	$34,059
Educational Services	$19,067	$26,790	$27,040	$28,826	$31,196	$27,767
Financial Activities	$28,829	$27,843	$34,836	$31,359	$40,120	$32,589
Health Care and Social Assistance	$38,738	$40,250	$39,720	$42,600	$48,489	$41,585
Information	$33,024	$29,838	$32,255	$44,441	$37,065	$34,686
Management of Companies and Enterprises	$33,599	$32,671	$39,048	$36,856	$44,562	$37,062
Manufacturing	$35,400	$35,175	$41,807	$42,692	$46,047	$39,859
Natural Resources	$37,786	$34,443	$29,680	$48,084	$40,874	$36,262
Other Services (except Public Administration)	$22,945	$22,174	$23,731	$29,692	$29,299	$25,183
Professional, Scientific, and Technical Services	$31,161	$28,308	$32,567	$35,090	$33,308	$32,170
Public Administration	$26,572	$35,474	$29,934	$35,979	$39,876	$33,879
Transportation and Warehousing	$29,057	$31,279	$32,678	$42,934	$41,168	$33,946
Utilities	$41,924	$41,447	$45,714	$47,730	$51,978	$47,706
Wholesale/Retail Trade	$20,504	$21,206	$25,885	$24,400	$27,231	$24,082
Industry not reported	---	$22,221	---	---	---	---

A1.1.7 Community College CTE Program-to-Workforce Alignment; Number of Community College CTE Graduates Employed in an Aligned Industry

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***1,668***	***1,684***	***1,727***	***1,620***	***1,720***	***1,684***
Gender						
Female	1,077	1,099	1,141	1,091	1,128	1,107
Male	586	581	579	524	585	571
Race						
Black	621	600	596	552	699	614
White	976	990	1,015	976	903	972
Other	59	83	87	74	89	78
Race_Gender						
Black, Female	430	435	425	395	522	441
Black, Male	190	165	171	156	177	172
White, Female	610	599	650	641	548	610
White, Male	366	389	363	335	355	362
Other, Female	34	60	53	45	48	48
Other, Male	25	23	34	29	41	30
Ecosystem of College						
Ecosystem 1	98	77	84	68	28	71
Ecosystem 2	265	279	280	249	295	274
Ecosystem 3	74	88	64	58	64	70
Ecosystem 4	212	232	223	251	329	249
Ecosystem 5	357	348	320	324	257	321
Ecosystem 6	257	242	273	228	277	255
Ecosystem 7	118	118	106	106	150	120
Ecosystem 8	287	300	377	336	320	324
WIOA Region of College						
Delta	172	165	148	126	92	141
MS Partnership	477	511	503	500	624	523
South Central	475	466	426	430	407	441
Twin Districts	544	542	650	564	597	579

A1.1.8 Receipt of Public Assistance; Number of Community College CTE Graduates who Receive SNAP, TANF, or UI Benefits within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***1,156***	***1,583***	***806***	***554***	***602***	***940***
Gender						
Female	696	993	559	404	450	620
Male	452	568	232	137	146	307
Race						
Black	674	882	540	380	446	584
White	428	547	204	137	130	289
Other	36	71	19	21	12	32
Race_Gender						
Black, Female	403	569	388	285	349	399
Black, Male	271	313	151	93	97	185
White, Female	268	367	153	100	88	195
White, Male	158	179	49	37	42	93
Other, Female	21	38	10	17	<10	19
Other, Male	15	33	<10	<10	<10	13
Ecosystem of College						
Ecosystem 1	92	69	44	28	35	54
Ecosystem 2	132	144	75	39	69	92
Ecosystem 3	53	71	22	15	40	40
Ecosystem 4	99	151	78	60	86	95
Ecosystem 5	297	525	276	182	155	287
Ecosystem 6	179	242	106	90	94	142
Ecosystem 7	77	79	59	45	41	60
Ecosystem 8	227	302	146	95	82	170
WIOA Region of College						
Delta	145	140	66	43	75	94
MS Partnership	231	295	153	99	155	187
South Central	374	604	335	227	196	347
Twin Districts	406	544	252	185	176	313
Public Assistance						
SNAP	649	656	559	481	545	578
TANF	14	11	<10	<10	<10	<10
UI	646	1,186	376	98	85	478

A1.1.9 Community College CTE Student Enrollment, Number of Students Enrolled Associate of Applied Science Programs

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***14,618***	***15,513***	***14,992***	***14,377***	***14,122***	***14,724***
Gender						
Female	7,328	7,665	7,682	7,323	7,064	7,412
Male	7,249	7,776	7,264	7,040	7,041	7,274
Race						
Black	5,856	6,157	5,693	5,616	5,588	5,782
White	7,805	8,217	8,104	7,601	7,345	7,814
Other	782	889	903	889	898	872
Race_Gender						
Black, Female	3,312	3,507	3,261	3,189	3,162	3,286
Black, Male	2,535	2,633	2,420	2,423	2,419	2,486
White, Female	3,551	3,642	3,862	3,583	3,369	3,601
White, Male	4,232	4,539	4,224	4,014	3,970	4,196
Other, Female	393	427	457	444	436	431
Other, Male	386	455	444	445	461	438
Ecosystem of College						
Ecosystem 1	481	465	435	523	509	483
Ecosystem 2	1,712	1,731	1,806	2,181	2,012	1,888
Ecosystem 3	298	322	269	229	205	265
Ecosystem 4	2,678	2,746	2,538	2,545	2,653	2,632
Ecosystem 5	2,739	3,267	3,000	2,980	2,807	2,959
Ecosystem 6	2,104	2,039	2,231	1,804	1,917	2,019
Ecosystem 7	986	1,067	904	759	829	909
Ecosystem 8	3,620	3,876	3,809	3,356	3,190	3,570
WIOA Region of College						
Delta	779	787	704	752	714	747
MS Partnership	4,390	4,477	4,344	4,726	4,665	4,520
South Central	3,725	4,334	3,904	3,739	3,636	3,868
Twin Districts	5,724	5,915	6,040	5,160	5,107	5,589

A1.1.10 Community College CTE Student Enrollment, Number of Students Enrolled in Career and Technical Certificate Programs

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***5,829***	***5,342***	***4,860***	***4,938***	***4,683***	***5,130***
Gender						
Female	3,132	2,984	2,826	2,942	3,055	2,988
Male	2,682	2,316	1,998	1,990	1,620	2,121
Race						
Black	2,987	2,593	2,344	2,633	2,602	2,632
White	2,381	2,142	2,110	1,961	1,715	2,062
Other	241	247	239	240	246	243
Race_Gender						
Black, Female	1,610	1,469	1,378	1,590	1,777	1,565
Black, Male	1,374	1,116	953	1,042	822	1,061
White, Female	1,375	1,319	1,287	1,186	1,096	1,253
White, Male	998	802	805	770	615	798
Other, Female	111	136	129	132	140	130
Other, Male	130	109	108	108	106	112
Ecosystem of College						
Ecosystem 1	81	75	76	65	91	78
Ecosystem 2	699	656	728	713	733	706
Ecosystem 3	272	235	213	237	213	234
Ecosystem 4	782	760	624	679	670	703
Ecosystem 5	1,864	1,286	860	924	751	1,137
Ecosystem 6	887	963	917	912	811	898
Ecosystem 7	387	387	370	395	402	388
Ecosystem 8	857	980	1,072	1,013	1,012	987
WIOA Region of College						
Delta	353	310	289	302	304	312
MS Partnership	1,481	1,416	1,352	1,392	1,403	1,409
South Central	2,251	1,673	1,230	1,319	1,153	1,525
Twin Districts	1,744	1,943	1,989	1,925	1,823	1,885

A1.1.11 Community College CTE Graduates; Number of Students Graduating with an Associate of Applied Science Degree

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***4,261***	***4,380***	***4,263***	***3,890***	***4,053***	***4,169***
Gender						
Female	2,619	2,623	2,599	2,374	2,443	2,532
Male	1,619	1,734	1,650	1,502	1,595	1,620
Race						
Black	1,310	1,277	1,233	1,111	1,285	1,243
White	2,706	2,807	2,728	2,476	2,435	2,630
Other	204	241	239	229	254	233
Race_Gender						
Black, Female	930	886	887	782	912	879
Black, Male	379	389	345	328	372	363
White, Female	1,554	1,581	1,551	1,426	1,355	1,493
White, Male	1,145	1,215	1,169	1,050	1,079	1,132
Other, Female	124	131	133	139	145	134
Other, Male	80	109	106	90	109	99
Ecosystem of College						
Ecosystem 1	154	133	124	128	76	123
Ecosystem 2	594	588	615	516	548	572
Ecosystem 3	165	181	177	147	145	163
Ecosystem 4	435	443	484	540	766	534
Ecosystem 5	864	842	817	734	665	784
Ecosystem 6	590	574	554	411	510	528
Ecosystem 7	338	324	338	286	310	319
Ecosystem 8	1,121	1,295	1,154	1,128	1,033	1,146
WIOA Region of College						
Delta	319	314	301	275	221	286
MS Partnership	1,029	1,031	1,099	1,056	1,314	1,106
South Central	1,202	1,166	1,155	1,020	975	1,104
Twin Districts	1,711	1,869	1,708	1,539	1,543	1,674

A1.1.12 Community College CTE Graduates; Number of Students Graduating with a Career and Technical Certificate

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***3,741***	***3,697***	***3,733***	***3,393***	***3,492***	***3,611***
Gender						
Female	1,609	1,547	1,636	1,494	1,612	1,580
Male	2,070	1,920	1,903	1,676	1,694	1,853
Race						
Black	1,817	1,609	1,647	1,531	1,695	1,660
White	1,651	1,397	1,557	1,438	1,373	1,483
Other	129	154	163	138	189	155
Race_Gender						
Black, Female	809	791	798	735	891	805
Black, Male	1,007	818	847	792	803	853
White, Female	733	641	733	670	614	678
White, Male	913	748	820	766	754	800
Other, Female	52	72	78	69	91	72
Other, Male	76	81	84	69	98	82
Ecosystem of College						
Ecosystem 1	242	181	230	152	39	169
Ecosystem 2	354	325	384	321	606	398
Ecosystem 3	168	188	164	126	182	166
Ecosystem 4	413	415	393	471	493	437
Ecosystem 5	1,223	1,529	1,300	1,159	935	1,229
Ecosystem 6	591	559	520	537	607	563
Ecosystem 7	176	169	153	172	244	183
Ecosystem 8	574	331	589	455	386	467
WIOA Region of College						
Delta	410	369	394	278	221	334
MS Partnership	767	740	777	792	1,099	835
South Central	1,399	1,698	1,453	1,331	1,179	1,412
Twin Districts	1,165	890	1,109	992	993	1,030

A1.1.13 Enrollment in a Mississippi Public University; Number of Community College CTE Graduates from Associate of Applied Science Programs who Enrolled in a Mississippi Public University within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***388***	***401***	***412***	***388***	***359***	***390***
Gender						
Female	257	264	270	248	232	254
Male	128	135	141	140	127	134
Race						
Black	176	183	174	157	160	170
White	183	191	205	211	162	190
Other	25	23	27	17	32	25
Race_Gender						
Black, Female	129	140	135	116	122	128
Black, Male	47	43	39	41	38	42
White, Female	112	112	116	119	92	110
White, Male	70	79	88	92	70	80
Other, Female	15	12	17	11	16	14
Other, Male	10	11	10	<10	16	11
Ecosystem of College						
Ecosystem 1	16	12	14	<10	10	12
Ecosystem 2	54	60	55	59	49	55
Ecosystem 3	24	26	21	20	18	22
Ecosystem 4	38	52	47	67	74	56
Ecosystem 5	83	88	88	79	69	81
Ecosystem 6	76	70	65	46	64	64
Ecosystem 7	21	22	17	21	13	19
Ecosystem 8	76	71	105	88	62	80
WIOA Region of College						
Delta	40	38	35	28	28	34
MS Partnership	92	112	102	126	123	111
South Central	104	110	105	100	82	100
Twin Districts	152	141	170	134	126	145

A1.1.14 Enrollment in a Mississippi Public University; Number of Community College CTE Graduates from Career and Technical Certificate Programs who Enrolled in a Mississippi Public University within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***62***	***49***	***55***	***48***	***68***	***56***
Gender						
Female	35	27	21	31	37	30
Male	26	22	34	15	31	26
Race						
Black	38	29	33	28	45	35
White	21	16	20	16	15	18
Other	<10	<10	<10	<10	<10	<10
Race_Gender						
Black, Female	25	17	18	19	27	21
Black, Male	13	12	15	<10	18	13
White, Female	<10	<10	<10	10	<10	<10
White, Male	13	<10	17	<10	<10	11
Other, Female	<10	<10	<10	<10	<10	<10
Other, Male	<10	<10	<10	<10	<10	<10
Ecosystem of College						
Ecosystem 1	<10	<10	<10	<10	<10	<10
Ecosystem 2	<10	<10	<10	<10	13	<10
Ecosystem 3	<10	<10	<10	<10	<10	<10
Ecosystem 4	10	<10	<10	<10	17	10
Ecosystem 5	19	20	17	18	17	18
Ecosystem 6	<10	<10	<10	<10	<10	<10
Ecosystem 7	<10	<10	<10	<10	<10	<10
Ecosystem 8	11	<10	<10	<10	<10	<10
WIOA Region of College						
Delta	<10	<10	12	<10	<10	<10
MS Partnership	14	15	10	10	30	16
South Central	20	21	18	20	21	20
Twin Districts	20	<10	15	13	12	14

A1.1.15 Community College CTE Program-to-University Alignment, Number of Enrolled Community College CTE Graduates from Associate of Applied Science Programs with Aligned Major

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***237***	***253***	***252***	***218***	***191***	***230***
Gender						
Female	170	187	188	161	141	169
Male	65	65	64	57	50	60
Race						
Black	94	107	107	90	83	96
White	124	130	127	116	91	118
Other	17	14	14	12	14	14
Race_Gender						
Black, Female	75	89	82	74	64	77
Black, Male	19	18	25	16	19	19
White, Female	84	88	93	78	66	82
White, Male	39	42	34	38	25	36
Other, Female	11	10	12	<10	<10	10
Other, Male	<10	<10	<10	<10	<10	<10
Ecosystem of College						
Ecosystem 1	<10	<10	<10	<10	<10	<10
Ecosystem 2	34	47	33	38	19	34
Ecosystem 3	18	19	16	17	16	17
Ecosystem 4	23	34	29	38	38	32
Ecosystem 5	43	47	50	30	34	41
Ecosystem 6	52	48	35	31	36	40
Ecosystem 7	11	13	14	12	<10	11
Ecosystem 8	47	41	66	48	36	48
WIOA Region of College						
Delta	27	23	25	21	22	24
MS Partnership	57	81	62	76	57	67
South Central	54	60	64	42	40	52
Twin Districts	99	89	101	79	72	88

A1.1.16 Community College CTE Program-to-University Alignment, Number of Enrolled Community College CTE Graduates from Career and Technical Certificate Programs with Aligned Major

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***17***	***16***	***21***	***22***	***25***	***20***
Gender						
Female	12	10	<10	16	20	13
Male	<10	<10	12	<10	<10	<10
Race						
Black	10	<10	14	12	14	12
White	<10	<10	<10	<10	<10	<10
Other	<10	<10	<10	<10	<10	<10
Race_Gender						
Black, Female	<10	<10	<10	<10	12	<10
Black, Male	<10	<10	<10	<10	<10	<10
White, Female	<10	<10	<10	<10	<10	<10
White, Male	<10	<10	<10	<10	<10	<10
Other, Female	<10	<10	<10	<10	<10	<10
Other, Male	<10	<10	<10	<10	<10	<10
Ecosystem of College						
Ecosystem 1	<10	<10	<10	<10	<10	<10
Ecosystem 2	<10	<10	<10	<10	<10	<10
Ecosystem 3	<10	<10	<10	<10	<10	<10
Ecosystem 4	<10	<10	<10	<10	<10	<10
Ecosystem 5	<10	<10	<10	<10	<10	<10
Ecosystem 6	<10	<10	<10	<10	<10	<10
Ecosystem 7	<10	<10	<10	<10	<10	<10
Ecosystem 8	<10	<10	<10	<10	<10	<10
WIOA Region of College						
Delta	<10	<10	<10	<10	<10	<10
MS Partnership	<10	<10	<10	<10	13	<10
South Central	<10	<10	<10	<10	<10	<10
Twin Districts	<10	<10	<10	<10	<10	<10

A1.1.17 Employment of Community College CTE Graduates, Number of Community College CTE Graduates from Associate of Applied Science Programs Employed within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***2,799***	***2,835***	***2,784***	***2,552***	***2,761***	***2,746***
Gender						
Female	1,736	1,684	1,671	1,552	1,660	1,661
Male	1,055	1,140	1,106	994	1,090	1,077
Race						
Black	782	738	744	664	819	749
White	1,869	1,925	1,858	1,711	1,732	1,819
Other	125	144	145	140	166	144
Race_Gender						
Black, Female	558	510	511	465	582	525
Black, Male	224	227	233	198	236	224
White, Female	1,093	1,079	1,064	993	969	1,040
White, Male	773	838	791	718	762	776
Other, Female	78	81	80	81	91	82
Other, Male	47	63	65	59	75	62
Ecosystem of College						
Ecosystem 1	99	83	76	78	52	78
Ecosystem 2	407	402	416	354	367	389
Ecosystem 3	108	118	109	86	79	100
Ecosystem 4	281	281	333	356	559	362
Ecosystem 5	559	551	551	508	444	523
Ecosystem 6	390	399	388	276	358	362
Ecosystem 7	220	220	211	176	223	210
Ecosystem 8	735	781	700	718	679	723
WIOA Region of College						
Delta	207	201	185	164	131	178
MS Partnership	688	683	749	710	926	751
South Central	779	771	762	684	667	733
Twin Districts	1,125	1,180	1,088	994	1,037	1,085
Industry						
Accommodation/Leisure	189	242	197	184	185	199
Administrative and Waste Services	152	143	163	166	177	160
Construction	121	150	118	111	147	129
Educational Services	75	67	83	67	102	79
Financial Activities	44	35	42	51	52	45
Health Care and Social Assistance	1,362	1,265	1,237	1,146	1,215	1,245
Information	14	18	12	11	12	13
Management of Companies and Enterprises	11	13	<10	17	13	12
Manufacturing	254	246	290	267	251	262
Natural Resources	19	14	12	10	10	13
Other Services (except Public Administration)	53	52	44	38	59	49
Professional, Scientific, and Technical Services	92	104	102	86	102	97
Public Administration	50	58	42	56	58	53
Transportation and Warehousing	38	44	56	49	46	47
Utilities	10	12	10	11	14	11
Wholesale/Retail Trade	312	368	364	280	317	328
Industry not reported	<10	<10	<10	<10	<10	<10

A1.1.18 Employment of Community College CTE Graduates, Number of Community College CTE Graduates from Career and Technical Certificate Programs Employed within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***2,091***	***2,140***	***2,158***	***2,060***	***2,104***	***2,111***
Gender						
Female	916	881	924	910	976	921
Male	1,136	1,153	1,122	1,027	1,031	1,094
Race						
Black	1,040	957	946	976	1,071	998
White	909	798	904	853	826	858
Other	53	71	75	71	83	71
Race_Gender						
Black, Female	450	441	437	456	568	470
Black, Male	589	516	507	518	502	526
White, Female	435	376	431	408	365	403
White, Male	470	417	470	444	459	452
Other, Female	24	38	38	35	37	34
Other, Male	29	33	37	36	46	36
Ecosystem of College						
Ecosystem 1	134	82	111	83	28	88
Ecosystem 2	188	174	214	185	351	222
Ecosystem 3	87	99	85	76	89	87
Ecosystem 4	217	210	192	241	285	229
Ecosystem 5	712	943	781	734	568	748
Ecosystem 6	340	319	339	354	401	351
Ecosystem 7	125	113	113	129	171	130
Ecosystem 8	288	200	323	258	211	256
WIOA Region of College						
Delta	221	181	196	159	117	175
MS Partnership	405	384	406	426	636	451
South Central	837	1,056	894	863	739	878
Twin Districts	628	519	662	612	612	607
Industry						
Accommodation/Leisure	144	141	132	108	150	135
Administrative and Waste Services	156	166	137	128	138	145
Construction	156	107	175	166	173	155
Educational Services	24	20	26	14	27	22
Financial Activities	19	20	28	33	31	26
Health Care and Social Assistance	611	566	626	620	617	608
Information	<10	<10	<10	<10	10	<10
Management of Companies and Enterprises	<10	<10	<10	<10	<10	<10
Manufacturing	258	220	206	216	208	222
Natural Resources	24	19	21	18	13	19
Other Services (except Public Administration)	65	54	56	68	65	62
Professional, Scientific, and Technical Services	17	16	17	17	16	17
Public Administration	29	27	26	21	47	30
Transportation and Warehousing	251	432	328	328	273	322
Utilities	12	<10	14	26	25	16
Wholesale/Retail Trade	310	333	355	288	306	318
Industry not reported	<10	<10	<10	<10	<10	<10

A1.1.19 Average Annualized Earnings, Earnings of Community College CTE Graduates from Associate of Applied Science Programs Employed within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***$35,013***	***$34,465***	***$37,675***	***$40,226***	***$43,308***	***$37,922***
Gender						
Female	$35,193	$34,505	$36,510	$38,630	$43,605	$37,546
Male	$34,580	$34,465	$38,898	$42,373	$42,874	$38,288
Race						
Black	$27,803	$28,424	$34,497	$35,224	$39,941	$33,052
White	$37,290	$36,900	$39,128	$41,757	$46,094	$39,856
Other	$33,286	$32,895	$32,024	$38,576	$39,756	$34,296
Race_Gender						
Black, Female	$28,147	$27,613	$33,186	$33,745	$41,389	$32,736
Black, Male	$26,898	$29,181	$37,954	$37,439	$36,862	$33,862
White, Female	$38,486	$37,858	$39,185	$40,529	$47,254	$40,147
White, Male	$36,381	$35,457	$39,126	$43,912	$44,789	$39,476
Other, Female	$36,129	$31,490	$30,226	$39,568	$34,201	$33,901
Other, Male	$26,757	$34,364	$35,718	$37,151	$40,685	$34,473
Ecosystem of College						
Ecosystem 1	$29,621	$31,914	$42,073	$36,134	$35,671	$33,499
Ecosystem 2	$34,384	$36,322	$38,924	$40,147	$41,156	$37,796
Ecosystem 3	$37,439	$40,281	$42,173	$50,856	$53,248	$43,077
Ecosystem 4	$35,013	$35,843	$35,557	$42,483	$47,722	$39,965
Ecosystem 5	$33,211	$36,554	$38,394	$41,473	$43,020	$38,105
Ecosystem 6	$38,429	$33,717	$39,108	$41,297	$42,687	$39,390
Ecosystem 7	$31,099	$33,633	$37,888	$41,845	$44,183	$36,748
Ecosystem 8	$36,159	$32,231	$34,306	$37,281	$41,975	$35,880
WIOA Region of College						
Delta	$32,640	$36,400	$42,136	$43,385	$48,395	$39,458
MS Partnership	$34,570	$35,992	$37,850	$41,144	$44,220	$38,490
South Central	$32,880	$35,550	$38,358	$41,683	$43,165	$37,669
Twin Districts	$37,281	$32,636	$35,557	$38,760	$42,189	$37,151
Industry						
Accommodation/Leisure	$16,660	$14,528	$18,022	$20,131	$17,704	$16,855
Administrative and Waste Services	$24,560	$26,815	$31,806	$30,528	$43,549	$30,827
Construction	$30,806	$30,568	$34,851	$38,136	$40,576	$34,908
Educational Services	$18,618	$26,790	$26,195	$28,826	$31,825	$27,281
Financial Activities	$30,542	$31,302	$34,167	$32,063	$40,557	$33,065
Health Care and Social Assistance	$42,695	$46,527	$48,092	$48,648	$53,963	$47,254
Information	$12,745	$30,211	$34,686	$43,425	$36,303	$33,052
Management of Companies and Enterprises	$30,405	$32,671	---	$35,939	$42,936	$35,511
Manufacturing	$40,901	$38,666	$44,710	$49,218	$50,432	$44,797
Natural Resources	$32,462	$34,353	$28,291	$60,765	$65,159	$34,780
Other Services (except Public Administration)	$29,056	$26,905	$32,110	$31,200	$31,179	$29,858
Professional, Scientific, and Technical Services	$31,161	$29,736	$32,383	$35,090	$36,400	$32,499
Public Administration	$27,636	$36,500	$28,512	$37,296	$41,990	$34,167
Transportation and Warehousing	$20,233	$30,024	$34,703	$41,162	$40,151	$34,200
Utilities	$38,284	$31,206	$42,413	$54,021	$47,987	$44,419
Wholesale/Retail Trade	$20,964	$20,878	$26,966	$23,235	$30,460	$24,634
Industry not reported	---	---	---	---	---	---

A1.1.20 **Average Annualized Earnings, Earnings of Community College CTE Graduates from Career and Technical Certificate Programs Employed within One Year of Graduation**

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***$27,475***	***$27,529***	***$28,493***	***$33,819***	***$35,553***	***$30,303***
Gender						
Female	$26,563	$26,405	$26,199	$31,611	$32,640	$28,633
Male	$27,850	$27,878	$31,168	$35,949	$37,933	$31,553
Race						
Black	$25,018	$25,295	$26,024	$31,459	$33,923	$28,401
White	$29,341	$27,914	$30,018	$35,603	$36,557	$31,663
Other	$23,973	$28,080	$29,568	$30,625	$34,221	$29,366
Race_Gender						
Black, Female	$24,749	$25,156	$24,593	$29,528	$33,119	$28,180
Black, Male	$25,670	$25,634	$27,961	$33,117	$35,325	$28,714
White, Female	$27,972	$26,579	$27,284	$32,367	$32,615	$29,358
White, Male	$30,962	$29,699	$33,981	$38,524	$40,014	$34,725
Other, Female	$21,061	$30,862	$29,342	$30,164	$27,560	$29,248
Other, Male	$28,519	$23,671	$29,815	$31,089	$41,055	$30,344
Ecosystem of College						
Ecosystem 1	$21,540	$31,509	$26,770	$31,224	$39,667	$26,778
Ecosystem 2	$26,018	$27,864	$29,025	$33,293	$31,759	$29,851
Ecosystem 3	$20,563	$25,851	$29,031	$31,056	$29,838	$27,730
Ecosystem 4	$31,127	$27,927	$31,453	$34,298	$35,116	$32,105
Ecosystem 5	$28,414	$29,045	$29,905	$35,979	$37,790	$31,646
Ecosystem 6	$28,224	$26,680	$27,338	$32,279	$36,349	$29,885
Ecosystem 7	$24,337	$25,723	$22,451	$32,074	$38,522	$29,582
Ecosystem 8	$26,328	$22,971	$28,658	$33,396	$33,817	$28,852
WIOA Region of College						
Delta	$21,131	$26,112	$28,210	$31,224	$32,114	$27,355
MS Partnership	$28,896	$27,896	$29,670	$33,926	$33,352	$30,891
South Central	$27,918	$28,860	$28,519	$35,333	$37,913	$31,259
Twin Districts	$27,630	$25,267	$27,956	$32,715	$35,554	$29,421
Industry						
Accommodation/Leisure	$13,316	$11,564	$14,585	$14,585	$15,613	$14,013
Administrative and Waste Services	$20,727	$17,087	$23,332	$24,685	$29,684	$23,025
Construction	$28,795	$28,204	$29,710	$37,996	$37,476	$33,002
Educational Services	$32,750	$25,086	$31,785	$29,331	$30,489	$29,807
Financial Activities	$23,679	$25,267	$34,879	$28,760	$39,830	$31,998
Health Care and Social Assistance	$32,697	$33,134	$30,594	$35,354	$39,970	$33,838
Information	---	---	---	---	$50,044	---
Management of Companies and Enterprises	---	---	---	---	---	---
Manufacturing	$29,762	$30,987	$36,627	$35,949	$41,669	$34,773
Natural Resources	$40,478	$36,262	$30,757	$46,008	$34,739	$37,786
Other Services (except Public Administration)	$19,116	$18,833	$21,883	$28,423	$22,460	$21,896
Professional, Scientific, and Technical Services	$30,572	$24,576	$33,900	$34,410	$25,092	$28,807
Public Administration	$20,231	$31,821	$31,646	$35,019	$39,681	$32,524
Transportation and Warehousing	$29,863	$31,294	$32,267	$43,095	$41,274	$33,910
Utilities	$43,544	---	$48,327	$46,727	$56,472	$48,924
Wholesale/Retail Trade	$20,229	$21,644	$24,683	$24,538	$25,196	$23,617
Industry not reported	---	---	---	---	---	---

A1.1.21 Community College CTE Program-to-Workforce Alignment; Number of Community College CTE Graduates from Associate of Applied Science Programs Employed in an Aligned Industry

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***865***	***939***	***928***	***888***	***951***	***914***
Gender						
Female	536	569	579	578	577	568
Male	329	368	344	306	369	343
Race						
Black	257	266	263	238	273	259
White	564	621	597	595	598	595
Other	40	47	52	45	58	48
Race_Gender						
Black, Female	183	187	180	172	205	185
Black, Male	74	79	83	65	68	74
White, Female	328	346	360	372	332	348
White, Male	236	274	236	223	266	247
Other, Female	24	34	32	28	31	30
Other, Male	16	13	20	17	27	19
Ecosystem of College						
Ecosystem 1	42	36	34	29	18	32
Ecosystem 2	154	170	159	163	150	159
Ecosystem 3	29	32	32	20	28	28
Ecosystem 4	124	125	134	148	214	149
Ecosystem 5	188	196	166	177	130	171
Ecosystem 6	101	101	118	81	109	102
Ecosystem 7	67	70	65	53	77	66
Ecosystem 8	160	209	220	217	225	206
WIOA Region of College						
Delta	71	68	66	49	46	60
MS Partnership	278	295	293	311	364	308
South Central	255	266	231	230	207	238
Twin Districts	261	310	338	298	334	308

A1.1.22 Community College CTE Program-to-Workforce Alignment; Number of Community College CTE Graduates from Career and Technical Certificate Programs Employed in an Aligned Industry

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***803***	***745***	***799***	***732***	***769***	***770***
Gender						
Female	541	530	562	513	551	539
Male	257	213	235	218	216	228
Race						
Black	364	334	333	314	426	354
White	412	369	418	381	305	377
Other	19	36	35	29	31	30
Race_Gender						
Black, Female	247	248	245	223	317	256
Black, Male	116	86	88	91	109	98
White, Female	282	253	290	269	216	262
White, Male	130	115	127	112	89	115
Other, Female	10	26	21	17	17	18
Other, Male	<10	10	14	12	14	12
Ecosystem of College						
Ecosystem 1	56	41	50	39	10	39
Ecosystem 2	111	109	121	86	145	114
Ecosystem 3	45	56	32	38	36	41
Ecosystem 4	88	107	89	103	115	100
Ecosystem 5	169	152	154	147	127	150
Ecosystem 6	156	141	155	147	168	153
Ecosystem 7	51	48	41	53	73	53
Ecosystem 8	127	91	157	119	95	118
WIOA Region of College						
Delta	101	97	82	77	46	81
MS Partnership	199	216	210	189	260	215
South Central	220	200	195	200	200	203
Twin Districts	283	232	312	266	263	271

A1.1.23 Receipt of Public Assistance, Number of Community College CTE Graduates from Associate of Applied Science Programs who Receive Payments from Public Assistance within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***607***	***776***	***342***	***247***	***259***	***446***
Gender						
Female	426	547	277	205	213	334
Male	180	227	63	42	45	111
Race						
Black	293	380	209	146	183	242
White	289	343	114	88	69	181
Other	24	44	13	13	<10	20
Race_Gender						
Black, Female	222	295	180	128	157	196
Black, Male	71	85	29	18	26	46
White, Female	187	226	86	67	52	124
White, Male	101	116	27	21	17	56
Other, Female	16	22	<10	10	<10	12
Other, Male	<10	22	<10	<10	<10	<10
Ecosystem of College						
Ecosystem 1	43	38	12	15	24	26
Ecosystem 2	92	85	31	18	22	50
Ecosystem 3	26	25	11	<10	12	17
Ecosystem 4	46	65	40	31	39	44
Ecosystem 5	113	190	101	63	60	105
Ecosystem 6	73	106	36	27	33	55
Ecosystem 7	48	39	24	21	18	30
Ecosystem 8	166	228	87	63	51	119
WIOA Region of College						
Delta	69	63	23	24	36	43
MS Partnership	138	150	71	49	61	94
South Central	161	229	125	84	78	135
Twin Districts	239	334	123	90	84	174
Public Assistance						
SNAP	305	300	251	215	234	261
TANF	<10	<10	<10	<10	<10	<10
UI	376	587	144	45	41	239

A1.1.24 Receipt of Public Assistance, Number of Community College CTE Graduates from Career and Technical Certificate Programs who Receive Payments from Public Assistance within One Year of Graduation

	AY2019	AY2020	AY2021	AY2022	AY2023	Average
Total	***549***	***807***	***464***	***307***	***343***	***494***
Gender						
Female	270	446	282	199	237	287
Male	272	341	169	95	101	196
Race						
Black	381	502	331	234	263	342
White	139	204	90	49	61	109
Other	12	27	<10	<10	<10	12
Race_Gender						
Black, Female	181	274	208	157	192	202
Black, Male	200	228	122	75	71	139
White, Female	81	141	67	33	36	72
White, Male	57	63	22	16	25	37
Other, Female	<10	16	<10	<10	<10	<10
Other, Male	<10	11	<10	<10	<10	<10
Ecosystem of College						
Ecosystem 1	49	31	32	13	11	27
Ecosystem 2	40	59	44	21	47	42
Ecosystem 3	27	46	11	<10	28	24
Ecosystem 4	53	86	38	29	47	51
Ecosystem 5	184	335	175	119	95	182
Ecosystem 6	106	136	70	63	61	87
Ecosystem 7	29	40	35	24	23	30
Ecosystem 8	61	74	59	32	31	51
WIOA Region of College						
Delta	76	77	43	19	39	51
MS Partnership	93	145	82	50	94	93
South Central	213	375	210	143	118	212
Twin Districts	167	210	129	95	92	139
Public Assistance						
SNAP	344	356	308	266	311	317
TANF	<10	<10	<10	<10	<10	<10
UI	270	599	232	53	44	240

A1.2 High School (K-12) CTE Programs

A1.2.1 Annual K-12 CTE Participants; Number of Students Enrolled in at least One CTE Course

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***27,024***	***27,144***	***28,231***	***26,527***	***28,193***	***27,424***
Gender						
Female	13,546	13,812	14,379	13,547	14,238	13,904
Male	13,478	13,332	13,852	12,980	13,955	13,519
Race						
Black	12,991	12,813	12,807	11,883	12,048	12,508
White	12,714	12,888	13,681	12,916	14,125	13,265
Other	1,319	1,443	1,743	1,728	2,020	1,651
Race_Gender						
Black, Female	7,202	7,170	7,157	6,663	6,648	6,968
Black, Male	5,789	5,643	5,650	5,220	5,400	5,540
White, Female	5,699	5,932	6,347	6,006	6,591	6,115
White, Male	7,015	6,956	7,334	6,910	7,534	7,150
Other, Female	645	710	875	878	999	821
Other, Male	674	733	868	850	1,021	829
Other Demographics						
1. Economically Disadvantaged	16,768	17,035	18,061	17,779	18,520	17,633
2. Children with Disabilities	2,293	2,198	2,299	2,082	2,236	2,222
3. English learner	369	380	493	447	475	433
4. Homeless	528	389	407	321	228	375
Ecosystem of School						
Ecosystem 1	2,066	1,985	2,021	1,870	2,035	1,995
Ecosystem 2	3,411	3,558	3,668	3,462	3,878	3,595
Ecosystem 3	1,824	1,959	1,675	1,566	1,307	1,666
Ecosystem 4	3,065	3,202	3,548	3,354	3,513	3,336
Ecosystem 5	4,276	4,412	4,921	4,490	5,255	4,671
Ecosystem 6	3,933	3,835	4,000	4,018	4,119	3,981
Ecosystem 7	2,275	2,110	2,145	2,077	1,823	2,086
Ecosystem 8	6,174	6,083	6,253	5,690	6,263	6,093
WIOA Region of School						
Delta	2,882	2,989	2,676	2,528	2,349	2,685
MS Partnership	7,484	7,715	8,236	7,724	8,384	7,909
South Central	6,551	6,522	7,066	6,567	7,078	6,757
Twin Districts	10,107	9,918	10,253	9,708	10,382	10,074
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	4,713	4,323	4,690	4,253	4,598	4,515
2. Architecture and Construction	2,481	2,516	2,487	2,263	2,307	2,411
3. Arts, A/V Technology, and Communications	1,139	1,328	1,427	1,276	1,252	1,284
4. Business, Marketing, and Finance	2,601	2,151	2,212	2,004	1,944	2,182
5. Education and Training	1,383	1,467	1,568	1,520	1,767	1,541
6. Health Science	5,064	5,490	5,767	5,579	5,860	5,552
7. Hospitality and Tourism	1,889	1,861	1,900	1,868	1,900	1,884
8. Human Services	1,354	1,874	1,752	1,265	1,097	1,468
9. Information Technology	519	538	567	520	614	552
10. Law, Public Safety, Corrections, and Security	1,069	1,228	1,207	1,409	1,480	1,279
11. Manufacturing	1,822	1,902	2,228	2,254	2,277	2,097
12. Science, Technology, Engineering, and Mathematics	1,504	1,435	1,487	1,359	1,784	1,514
13. Transportation, Distribution, and Logistics	2,097	1,711	1,671	1,527	1,659	1,733
14. CTE Dual Credit Multi-Category	-	-	-	-	127	127

A1.2.2 Total K-12 CTE Concentrators; Number of Students Enrolled in a Level Two CTE Course

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***10,183***	***9,509***	***10,036***	***9,816***	***9,168***	***9,742***
Gender						
Female	4,995	4,858	5,167	5,074	4,715	4,962
Male	5,188	4,651	4,869	4,742	4,453	4,781
Race						
Black	4,751	4,521	4,666	4,632	3,794	4,473
White	4,976	4,537	4,802	4,566	4,758	4,728
Other	456	451	568	618	616	542
Race_Gender						
Black, Female	2,623	2,610	2,664	2,626	2,206	2,546
Black, Male	2,128	1,911	2,002	2,006	1,588	1,927
White, Female	2,153	2,023	2,221	2,122	2,195	2,143
White, Male	2,823	2,514	2,581	2,444	2,563	2,585
Other, Female	219	225	282	326	314	273
Other, Male	237	226	286	292	302	269
Other Demographics						
1. Economically Disadvantaged	6,240	6,031	6,527	6,728	6,014	6,308
2. Children with Disabilities	889	766	752	721	668	759
3. English learner	129	120	147	143	127	133
4. Homeless	205	126	151	128	74	137
Ecosystem of School						
Ecosystem 1	612	656	665	677	661	654
Ecosystem 2	1,374	1,091	1,171	1,069	1,163	1,174
Ecosystem 3	754	584	657	697	407	620
Ecosystem 4	1,059	956	1,104	1,129	1,131	1,076
Ecosystem 5	1,392	1,798	1,852	1,558	1,503	1,621
Ecosystem 6	1,598	1,300	1,325	1,524	1,364	1,422
Ecosystem 7	816	781	798	823	618	767
Ecosystem 8	2,578	2,343	2,464	2,339	2,321	2,409
WIOA Region of School						
Delta	1,052	915	999	1,059	747	954
MS Partnership	2,747	2,372	2,598	2,513	2,615	2,569
South Central	2,208	2,579	2,650	2,381	2,121	2,388
Twin Districts	4,176	3,643	3,789	3,863	3,685	3,831
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	2,045	1,226	1,304	1,094	1,187	1,371
2. Architecture and Construction	929	882	898	910	747	873
3. Arts, A/V Technology, and Communications	403	333	464	510	423	427
4. Business, Marketing, and Finance	930	782	724	746	597	756
5. Education and Training	509	489	588	586	557	546
6. Health Science	1,938	2,010	2,154	2,175	2,066	2,069
7. Hospitality and Tourism	595	639	603	654	535	605
8. Human Services	535	966	950	529	426	681
9. Information Technology	142	153	172	160	151	156
10. Law, Public Safety, Corrections, and Security	290	340	376	481	464	390
11. Manufacturing	670	644	765	902	754	747
12. Science, Technology, Engineering, and Mathematics	509	500	494	538	609	530
13. Transportation, Distribution, and Logistics	766	601	598	576	504	609
14. CTE Dual Credit Multi-Category	-	-	-	-	49	49

A1.2.3 Graduating K-12 CTE Participants; Number of CTE Participants who Graduated from K-12 with Traditional Diploma

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***12,859***	***12,473***	***13,134***	***12,616***	***13,281***	***12,873***
Gender						
Female	6,575	6,345	6,823	6,523	6,858	6,625
Male	6,284	6,128	6,311	6,093	6,423	6,248
Race						
Black	6,463	6,020	6,397	6,084	6,230	6,239
White	5,859	5,860	6,064	5,796	6,219	5,960
Other	537	593	673	736	832	674
Race_Gender						
Black, Female	3,604	3,406	3,642	3,413	3,484	3,510
Black, Male	2,859	2,614	2,755	2,671	2,746	2,729
White, Female	2,718	2,650	2,844	2,721	2,967	2,780
White, Male	3,141	3,210	3,220	3,075	3,252	3,180
Other, Female	253	289	337	389	407	335
Other, Male	284	304	336	347	425	339
Other Demographics						
1. Economically Disadvantaged	2,885	3,227	3,859	4,649	4,559	3,836
2. Children with Disabilities	269	306	406	523	490	399
3. English learner	57	88	117	134	199	119
4. Homeless	105	88	114	130	123	112
Ecosystem of School						
Ecosystem 1	948	976	1,071	950	887	966
Ecosystem 2	1,682	1,649	1,705	1,601	1,736	1,675
Ecosystem 3	870	881	798	779	841	834
Ecosystem 4	1,414	1,412	1,618	1,477	1,530	1,490
Ecosystem 5	2,014	1,862	1,987	2,021	2,325	2,042
Ecosystem 6	1,837	1,807	1,851	1,791	1,867	1,831
Ecosystem 7	1,016	1,037	1,015	1,038	1,000	1,021
Ecosystem 8	3,078	2,849	3,089	2,959	3,095	3,014
WIOA Region of School						
Delta	1,337	1,322	1,296	1,259	1,215	1,286
MS Partnership	3,577	3,596	3,896	3,548	3,779	3,679
South Central	3,030	2,899	3,002	3,059	3,325	3,063
Twin Districts	4,915	4,656	4,940	4,750	4,962	4,845
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	2,485	2,283	2,437	2,315	2,341	2,372
2. Architecture and Construction	1,251	1,285	1,317	1,223	1,261	1,267
3. Arts, A/V Technology, and Communications	571	628	682	722	710	663
4. Business, Marketing, and Finance	1,798	1,430	1,349	1,213	1,196	1,397
5. Education and Training	784	737	795	796	813	785
6. Health Science	2,591	2,544	2,807	2,807	2,905	2,731
7. Hospitality and Tourism	909	912	1,059	951	1,002	967
8. Human Services	685	694	802	723	1,003	781
9. Information Technology	252	240	256	313	392	291
10. Law, Public Safety, Corrections, and Security	515	568	612	593	777	613
11. Manufacturing	849	954	1,034	1,049	1,142	1,006
12. Science, Technology, Engineering, and Mathematics	794	849	848	848	949	858
13. Transportation, Distribution, and Logistics	1,158	1,061	1,026	857	826	986
14. CTE Dual Credit Multi-Category	-	-	-	-	41	41

A1.2.4 Graduating K-12 CTE Concentrators; Number of CTE Concentrators who Graduated from K-12 with Traditional Diploma

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***8,395***	***8,177***	***8,308***	***8,254***	***8,756***	***8,378***
Gender						
Female	4,300	4,208	4,373	4,350	4,551	4,356
Male	4,095	3,969	3,935	3,904	4,205	4,022
Race						
Black	4,050	3,779	3,933	3,864	4,090	3,943
White	3,982	4,006	3,967	3,904	4,140	4,000
Other	363	392	408	486	526	435
Race_Gender						
Black, Female	2,316	2,223	2,317	2,245	2,331	2,286
Black, Male	1,734	1,556	1,616	1,619	1,759	1,657
White, Female	1,809	1,786	1,846	1,834	1,962	1,847
White, Male	2,173	2,220	2,121	2,070	2,178	2,152
Other, Female	175	199	210	271	258	223
Other, Male	188	193	198	215	268	212
Other Demographics						
1. Economically Disadvantaged	1,894	2,084	2,438	3,058	3,087	2,512
2. Children with Disabilities	180	208	238	326	300	250
3. English learner	36	52	63	91	112	71
4. Homeless	64	57	72	85	76	71
Ecosystem of School						
Ecosystem 1	545	597	572	533	544	558
Ecosystem 2	1,092	1,031	957	868	996	989
Ecosystem 3	576	540	533	522	570	548
Ecosystem 4	890	822	948	950	929	908
Ecosystem 5	1,176	1,167	1,245	1,332	1,636	1,311
Ecosystem 6	1,195	1,239	1,186	1,150	1,236	1,201
Ecosystem 7	684	653	665	741	676	684
Ecosystem 8	2,237	2,128	2,202	2,158	2,169	2,179
WIOA Region of School						
Delta	858	817	793	827	814	822
MS Partnership	2,245	2,173	2,217	2,046	2,225	2,181
South Central	1,860	1,820	1,910	2,073	2,312	1,995
Twin Districts	3,432	3,367	3,388	3,308	3,405	3,380
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	1,354	1,219	1,057	948	903	1,096
2. Architecture and Construction	781	767	804	757	821	786
3. Arts, A/V Technology, and Communications	360	370	359	409	382	376
4. Business, Marketing, and Finance	870	799	714	650	602	727
5. Education and Training	416	470	507	520	508	484
6. Health Science	1,822	1,830	1,954	2,060	1,983	1,930
7. Hospitality and Tourism	544	548	577	537	562	554
8. Human Services	468	457	483	492	801	540
9. Information Technology	146	143	156	127	159	146
10. Law, Public Safety, Corrections, and Security	229	251	321	324	465	318
11. Manufacturing	523	625	638	703	741	646
12. Science, Technology, Engineering, and Mathematics	487	444	459	476	557	485
13. Transportation, Distribution, and Logistics	697	581	554	520	516	574
14. CTE Dual Credit Multi-Category	-	-	-	-	21	21

A1.2.5 K-12 CTE Participant Dropouts; Number of CTE Participants who Dropped Out from K-12 Before Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***434***	***385***	***284***	***401***	***475***	***396***
Gender						
Female	135	146	97	122	178	136
Male	299	239	187	279	297	260
Race						
Black	182	181	125	133	210	166
White	239	190	145	244	235	211
Other	13	14	14	24	30	19
Race_Gender						
Black, Female	59	70	47	33	75	57
Black, Male	123	111	78	100	135	109
White, Female	73	73	47	79	86	72
White, Male	166	117	98	165	149	139
Other, Female	<10	<10	<10	10	17	<10
Other, Male	10	11	11	14	13	12
Other Demographics						
1. Economically Disadvantaged	113	112	89	168	205	137
2. Children with Disabilities	22	25	29	41	46	33
3. English learner	<10	<10	<10	<10	10	<10
4. Homeless	<10	<10	<10	<10	15	<10
Ecosystem of School						
Ecosystem 1	27	36	28	26	38	31
Ecosystem 2	92	63	43	95	89	76
Ecosystem 3	28	37	21	28	50	33
Ecosystem 4	43	38	47	54	84	53
Ecosystem 5	59	52	25	33	49	44
Ecosystem 6	69	61	52	58	56	59
Ecosystem 7	43	32	29	38	36	36
Ecosystem 8	73	66	39	69	73	64
WIOA Region of School						
Delta	40	52	42	41	66	48
MS Partnership	150	122	97	162	195	145
South Central	102	84	54	71	85	79
Twin Districts	142	127	91	127	129	123
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	126	118	93	145	137	124
2. Architecture and Construction	52	58	31	45	68	51
3. Arts, A/V Technology, and Communications	<10	18	<10	11	14	11
4. Business, Marketing, and Finance	51	42	17	31	30	34
5. Education and Training	13	11	11	18	24	15
6. Health Science	19	26	19	16	32	22
7. Hospitality and Tourism	27	24	15	21	28	23
8. Human Services	16	15	23	15	26	19
9. Information Technology	<10	<10	<10	10	<10	<10
10. Law, Public Safety, Corrections, and Security	19	24	11	26	42	24
11. Manufacturing	65	39	42	63	47	51
12. Science, Technology, Engineering, and Mathematics	15	11	15	23	31	19
13. Transportation, Distribution, and Logistics	71	48	34	40	39	46
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.6 K-12 CTE Concentrator Dropouts; Number of CTE Concentrators who Dropped Out from K-12 Before Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***94***	***74***	***59***	***83***	***101***	***82***
Gender						
Female	20	25	18	22	38	25
Male	74	49	41	61	63	58
Race						
Black	33	21	21	27	41	29
White	59	49	34	51	55	50
Other	<10	<10	<10	<10	<10	<10
Race_Gender						
Black, Female	<10	<10	12	<10	16	10
Black, Male	28	14	<10	19	25	19
White, Female	14	17	<10	13	20	14
White, Male	45	32	28	38	35	36
Other, Female	<10	<10	<10	<10	<10	<10
Other, Male	<10	<10	<10	<10	<10	<10
Other Demographics						
1. Economically Disadvantaged	19	14	23	39	53	30
2. Children with Disabilities	<10	<10	<10	<10	<10	<10
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	<10	<10	<10	<10	<10	<10
Ecosystem 2	23	21	10	21	18	19
Ecosystem 3	12	<10	<10	<10	22	10
Ecosystem 4	<10	<10	<10	10	11	<10
Ecosystem 5	<10	<10	<10	10	13	<10
Ecosystem 6	18	15	11	13	12	14
Ecosystem 7	<10	<10	<10	<10	<10	<10
Ecosystem 8	12	12	<10	12	10	11
WIOA Region of School						
Delta	14	<10	<10	<10	26	12
MS Partnership	32	31	20	35	31	30
South Central	18	<10	16	17	22	16
Twin Districts	30	27	18	25	22	24
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	32	29	21	18	17	23
2. Architecture and Construction	10	11	<10	13	13	11
3. Arts, A/V Technology, and Communications	<10	<10	<10	<10	<10	<10
4. Business, Marketing, and Finance	<10	<10	<10	<10	<10	<10
5. Education and Training	<10	<10	<10	<10	<10	<10
6. Health Science	<10	<10	<10	<10	<10	<10
7. Hospitality and Tourism	<10	<10	<10	<10	<10	<10
8. Human Services	<10	<10	<10	<10	11	<10
9. Information Technology	<10	<10	<10	<10	<10	<10
10. Law, Public Safety, Corrections, and Security	<10	<10	<10	<10	11	<10
11. Manufacturing	15	<10	<10	18	15	13
12. Science, Technology, Engineering, and Mathematics	<10	<10	<10	<10	<10	<10
13. Transportation, Distribution, and Logistics	13	<10	<10	<10	10	<10
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.7 Grade of First K-12 CTE Enrollment; Frequency Tabulation of the Grade CTE Students First Enrolled in a K-12 CTE Course, Measured for Students who Graduated

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
9th Grade	1,768	1,946	2,009	2,395	2,693	2,162
10th Grade	6,364	5,843	6,125	5,741	6,200	6,055
11th Grade	4,311	4,248	4,544	4,129	3,750	4,196
12th Grade	416	436	456	338	583	446

A1.2.8 K-12 CTE Participants who Graduated with CTE Dual Credit; Number of K-12 CTE Participants who Graduated after Completing a CTE Dual Credit / Dual Enrollment Academic Program

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***343***	***298***	***509***	***613***	***1,009***	***554***
Gender						
Female	140	123	245	303	499	262
Male	203	175	264	310	510	292
Race						
Black	223	180	323	335	490	310
White	114	109	170	251	470	223
Other	<10	<10	16	27	49	21
Race_Gender						
Black, Female	112	90	187	198	273	172
Black, Male	111	90	136	137	217	138
White, Female	27	30	53	91	207	82
White, Male	87	79	117	160	263	141
Other, Female	<10	<10	<10	14	19	<10
Other, Male	<10	<10	11	13	30	13
Other Demographics						
1. Economically Disadvantaged	69	79	171	181	287	157
2. Children with Disabilities	11	<10	18	16	32	16
3. English learner	<10	<10	<10	<10	12	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	22	37	56	36	61	42
Ecosystem 2	<10	<10	<10	<10	15	<10
Ecosystem 3	<10	<10	<10	<10	<10	<10
Ecosystem 4	<10	27	83	24	41	36
Ecosystem 5	207	139	244	396	532	304
Ecosystem 6	50	34	37	85	140	69
Ecosystem 7	27	17	20	18	22	21
Ecosystem 8	26	39	65	48	191	74
WIOA Region of School						
Delta	<10	<10	23	29	53	23
MS Partnership	32	60	120	37	71	64
South Central	234	156	264	414	554	324
Twin Districts	76	73	102	133	331	143
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	41	31	44	42	75	47
2. Architecture and Construction	20	34	46	48	64	42
3. Arts, A/V Technology, and Communications	32	15	51	85	127	62
4. Business, Marketing, and Finance	30	27	85	76	198	83
5. Education and Training	37	12	<10	16	79	30
6. Health Science	39	62	92	149	254	119
7. Hospitality and Tourism	31	19	42	39	43	35
8. Human Services	29	33	95	63	223	89
9. Information Technology	23	28	42	15	69	35
10. Law, Public Safety, Corrections, and Security	<10	<10	<10	<10	11	<10
11. Manufacturing	70	46	73	99	113	80
12. Science, Technology, Engineering, and Mathematics	21	13	32	18	110	39
13. Transportation, Distribution, and Logistics	20	25	49	70	68	46
14. CTE Dual Credit Multi-Category	-	-	-	-	41	41

A1.2.9 K-12 CTE Concentrators who Graduated with CTE Dual Credit; Number of K-12 CTE Concentrators who Graduated after Completing a CTE Dual Credit / Dual Enrollment Academic Program

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***144***	***155***	***306***	***444***	***681***	***346***
Gender						
Female	55	64	133	205	338	159
Male	89	91	173	239	343	187
Race						
Black	85	87	178	216	339	181
White	56	63	115	207	311	150
Other	<10	<10	13	21	31	15
Race_Gender						
Black, Female	43	46	99	120	192	100
Black, Male	42	41	79	96	147	81
White, Female	11	16	30	75	135	53
White, Male	45	47	85	132	176	97
Other, Female	<10	<10	<10	10	11	<10
Other, Male	<10	<10	<10	11	20	<10
Other Demographics						
1. Economically Disadvantaged	33	44	94	121	206	100
2. Children with Disabilities	<10	<10	12	12	22	11
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	13	27	33	23	27	25
Ecosystem 2	<10	<10	<10	<10	10	<10
Ecosystem 3	<10	<10	<10	<10	<10	<10
Ecosystem 4	<10	13	35	10	19	16
Ecosystem 5	67	47	142	287	419	192
Ecosystem 6	24	17	29	75	87	46
Ecosystem 7	19	13	18	15	16	16
Ecosystem 8	13	34	47	31	99	45
WIOA Region of School						
Delta	<10	<10	14	15	17	11
MS Partnership	21	35	56	21	43	35
South Central	86	60	160	302	435	209
Twin Districts	37	51	76	106	186	91
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	18	16	22	17	13	17
2. Architecture and Construction	11	27	34	39	35	29
3. Arts, A/V Technology, and Communications	17	10	36	69	81	43
4. Business, Marketing, and Finance	19	14	30	34	66	33
5. Education and Training	<10	<10	<10	12	27	<10
6. Health Science	15	26	45	97	133	63
7. Hospitality and Tourism	11	10	30	20	25	19
8. Human Services	13	<10	21	41	197	56
9. Information Technology	13	18	23	<10	<10	14
10. Law, Public Safety, Corrections, and Security	<10	<10	<10	<10	<10	<10
11. Manufacturing	23	20	52	76	50	44
12. Science, Technology, Engineering, and Mathematics	<10	<10	13	<10	42	15
13. Transportation, Distribution, and Logistics	<10	<10	17	45	26	19
14. CTE Dual Credit Multi-Category	-	-	-	-	21	21

A1.2.10 K-12 CTE Participants who Graduated with Non-CTE Dual Credit; Number of K-12 CTE Participants who Graduated after Completing a Non-CTE Dual Credit / Dual Enrollment Academic Program

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***3,600***	***4,272***	***4,500***	***4,101***	***4,321***	***4,159***
Gender						
Female	2,267	2,705	2,918	2,670	2,754	2,663
Male	1,333	1,567	1,582	1,431	1,567	1,496
Race						
Black	1,395	1,826	1,719	1,510	1,511	1,592
White	2,046	2,244	2,537	2,330	2,528	2,337
Other	159	202	244	261	282	230
Race_Gender						
Black, Female	943	1,275	1,227	1,085	1,066	1,119
Black, Male	452	551	492	425	445	473
White, Female	1,240	1,315	1,543	1,414	1,526	1,408
White, Male	806	929	994	916	1,002	929
Other, Female	84	115	148	171	162	136
Other, Male	75	87	96	90	120	94
Other Demographics						
1. Economically Disadvantaged	720	1,055	1,185	1,382	1,377	1,144
2. Children with Disabilities	20	42	36	39	45	36
3. English learner	<10	15	20	23	44	22
4. Homeless	21	29	32	32	36	30
Ecosystem of School						
Ecosystem 1	311	385	435	357	361	370
Ecosystem 2	482	509	478	479	573	504
Ecosystem 3	179	257	179	192	189	199
Ecosystem 4	434	504	522	458	433	470
Ecosystem 5	494	729	727	623	649	644
Ecosystem 6	480	625	629	576	596	581
Ecosystem 7	205	250	307	278	293	267
Ecosystem 8	1,015	1,013	1,223	1,138	1,227	1,123
WIOA Region of School						
Delta	325	447	369	352	294	357
MS Partnership	1,081	1,208	1,245	1,134	1,262	1,186
South Central	699	979	1,034	901	942	911
Twin Districts	1,495	1,638	1,852	1,714	1,823	1,704
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	646	646	673	646	722	667
2. Architecture and Construction	193	279	255	233	260	244
3. Arts, A/V Technology, and Communications	142	214	278	219	202	211
4. Business, Marketing, and Finance	594	598	523	480	369	513
5. Education and Training	212	253	264	252	279	252
6. Health Science	1,213	1,406	1,553	1,501	1,509	1,436
7. Hospitality and Tourism	194	263	329	271	256	263
8. Human Services	136	222	226	184	254	204
9. Information Technology	64	70	71	106	137	90
10. Law, Public Safety, Corrections, and Security	115	152	166	153	211	159
11. Manufacturing	95	138	147	118	174	134
12. Science, Technology, Engineering, and Mathematics	284	355	359	333	390	344
13. Transportation, Distribution, and Logistics	139	154	181	131	103	142
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.11 K-12 CTE Concentrators who Graduated with Non-CTE Dual Credit; Number of K-12 CTE Concentrators who Graduated after Completing a Non-CTE Dual Credit / Dual Enrollment Academic Program

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***2,423***	***2,849***	***2,990***	***2,882***	***3,088***	***2,846***
Gender						
Female	1,566	1,853	1,982	1,930	1,997	1,866
Male	857	996	1,008	952	1,091	981
Race						
Black	939	1,207	1,158	1,087	1,156	1,109
White	1,365	1,497	1,675	1,601	1,732	1,574
Other	119	145	157	194	200	163
Race_Gender						
Black, Female	647	865	845	802	819	796
Black, Male	292	342	313	285	337	314
White, Female	851	901	1,040	997	1,064	971
White, Male	514	596	635	604	668	603
Other, Female	68	87	97	131	114	99
Other, Male	51	58	60	63	86	64
Other Demographics						
1. Economically Disadvantaged	479	710	819	979	1,011	800
2. Children with Disabilities	10	31	23	30	35	26
3. English learner	<10	<10	11	20	32	15
4. Homeless	15	21	23	23	25	21
Ecosystem of School						
Ecosystem 1	210	260	264	220	251	241
Ecosystem 2	298	300	271	256	310	287
Ecosystem 3	110	146	117	131	140	129
Ecosystem 4	284	314	321	343	307	314
Ecosystem 5	277	474	463	416	498	426
Ecosystem 6	329	427	423	406	405	398
Ecosystem 7	133	172	216	214	221	191
Ecosystem 8	782	756	915	896	956	861
WIOA Region of School						
Delta	216	275	238	243	225	239
MS Partnership	686	745	735	707	783	731
South Central	410	646	679	630	719	617
Twin Districts	1,111	1,183	1,338	1,302	1,361	1,259
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	326	337	295	272	267	299
2. Architecture and Construction	130	146	147	149	173	149
3. Arts, A/V Technology, and Communications	76	120	138	113	113	112
4. Business, Marketing, and Finance	307	326	272	280	214	280
5. Education and Training	122	166	184	174	194	168
6. Health Science	933	1,087	1,174	1,202	1,173	1,114
7. Hospitality and Tourism	107	144	179	158	149	147
8. Human Services	85	130	162	124	212	143
9. Information Technology	41	41	47	51	62	48
10. Law, Public Safety, Corrections, and Security	44	67	89	85	144	86
11. Manufacturing	54	95	85	81	122	87
12. Science, Technology, Engineering, and Mathematics	189	194	224	221	295	225
13. Transportation, Distribution, and Logistics	75	76	87	77	69	77
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.12 Work-Based Learning for K-12 CTE Participants; Number of K-12 CTE Participants who Completed a Work-Based Learning Course Prior to K-12 Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***870***	***1,015***	***1,145***	***1,115***	***1,943***	***1,218***
Gender						
Female	456	533	635	592	1,025	648
Male	414	482	510	523	918	569
Race						
Black	322	376	447	488	769	480
White	512	602	643	563	1,060	676
Other	36	37	55	64	114	61
Race_Gender						
Black, Female	215	251	311	290	456	305
Black, Male	107	125	136	198	313	176
White, Female	227	266	296	267	517	315
White, Male	285	336	347	296	543	361
Other, Female	14	16	28	35	52	29
Other, Male	22	21	27	29	62	32
Other Demographics						
1. Economically Disadvantaged	208	242	285	376	643	351
2. Children with Disabilities	14	13	29	34	57	29
3. English learner	<10	<10	<10	<10	24	10
4. Homeless	<10	10	<10	12	13	10
Ecosystem of School						
Ecosystem 1	54	61	85	80	117	79
Ecosystem 2	245	225	230	190	301	238
Ecosystem 3	29	49	28	21	71	40
Ecosystem 4	65	69	102	76	125	87
Ecosystem 5	124	151	203	313	408	240
Ecosystem 6	77	111	122	99	312	144
Ecosystem 7	30	30	30	27	98	43
Ecosystem 8	246	319	345	309	511	346
WIOA Region of School						
Delta	65	92	93	77	144	94
MS Partnership	328	312	352	290	470	350
South Central	154	181	233	340	506	283
Twin Districts	323	430	467	408	823	490
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	181	185	196	167	333	212
2. Architecture and Construction	105	110	107	86	172	116
3. Arts, A/V Technology, and Communications	55	54	55	60	138	72
4. Business, Marketing, and Finance	78	114	82	71	149	99
5. Education and Training	54	64	66	73	140	79
6. Health Science	174	218	282	300	469	289
7. Hospitality and Tourism	40	71	97	104	128	88
8. Human Services	48	38	64	85	258	99
9. Information Technology	21	24	15	20	37	23
10. Law, Public Safety, Corrections, and Security	36	26	52	32	90	47
11. Manufacturing	63	108	116	125	208	124
12. Science, Technology, Engineering, and Mathematics	48	57	77	51	124	71
13. Transportation, Distribution, and Logistics	107	100	103	84	122	103
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.13 Work-Based Learning for K-12 CTE Concentrators; Number of K-12 CTE Concentrators who Completed a Work-Based Learning Course Prior to K-12 Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***675***	***791***	***918***	***867***	***1,558***	***962***
Gender						
Female	343	405	510	447	816	504
Male	332	386	408	420	742	458
Race						
Black	237	287	348	348	611	366
White	409	472	529	467	861	548
Other	29	32	41	52	86	48
Race_Gender						
Black, Female	158	190	239	204	357	230
Black, Male	79	97	109	144	254	137
White, Female	172	200	248	216	419	251
White, Male	237	272	281	251	442	297
Other, Female	13	15	23	27	40	24
Other, Male	16	17	18	25	46	24
Other Demographics						
1. Economically Disadvantaged	159	186	211	285	517	272
2. Children with Disabilities	12	<10	23	27	45	23
3. English learner	<10	<10	<10	<10	22	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	30	46	49	54	89	54
Ecosystem 2	176	136	162	124	215	163
Ecosystem 3	22	31	21	20	51	29
Ecosystem 4	39	41	69	53	101	61
Ecosystem 5	98	124	180	220	349	194
Ecosystem 6	64	107	111	90	248	124
Ecosystem 7	20	21	23	26	79	34
Ecosystem 8	226	285	303	280	426	304
WIOA Region of School						
Delta	47	67	66	60	106	69
MS Partnership	220	187	235	191	350	237
South Central	118	145	203	246	428	228
Twin Districts	290	392	414	370	674	428
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	102	101	116	72	160	110
2. Architecture and Construction	72	82	84	69	122	86
3. Arts, A/V Technology, and Communications	48	42	38	41	84	51
4. Business, Marketing, and Finance	46	82	61	55	70	63
5. Education and Training	38	47	49	53	103	58
6. Health Science	139	177	240	233	357	229
7. Hospitality and Tourism	27	51	76	69	80	61
8. Human Services	37	29	41	68	236	82
9. Information Technology	12	14	<10	15	28	15
10. Law, Public Safety, Corrections, and Security	19	17	28	23	64	30
11. Manufacturing	48	97	84	91	163	97
12. Science, Technology, Engineering, and Mathematics	44	40	56	39	95	55
13. Transportation, Distribution, and Logistics	80	57	74	60	91	72
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.14 Enrollment of K-12 CTE Participants at Mississippi Community College; Number of K-12 CTE Participants who Graduated K-12 and Subsequently Enrolled in Mississippi Community College within One Year of Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***6,785***	***6,365***	***6,133***	***5,573***	***5,815***	***6,134***
Gender						
Female	3,762	3,556	3,550	3,170	3,280	3,464
Male	3,023	2,809	2,583	2,403	2,535	2,671
Race						
Black	3,393	3,058	2,862	2,545	2,525	2,877
White	3,173	3,075	3,011	2,750	2,962	2,994
Other	219	232	260	278	328	263
Race_Gender						
Black, Female	1,999	1,858	1,777	1,563	1,533	1,746
Black, Male	1,394	1,200	1,085	982	992	1,131
White, Female	1,655	1,575	1,623	1,434	1,574	1,572
White, Male	1,518	1,500	1,388	1,316	1,388	1,422
Other, Female	108	123	150	173	173	145
Other, Male	111	109	110	105	155	118
Other Demographics						
1. Economically Disadvantaged	1,557	1,634	1,792	2,089	1,972	1,809
2. Children with Disabilities	129	114	152	189	182	153
3. English learner	21	33	36	33	65	38
4. Homeless	49	37	36	51	46	44
Ecosystem of School						
Ecosystem 1	428	447	430	376	373	411
Ecosystem 2	942	886	831	736	819	843
Ecosystem 3	414	409	350	265	287	345
Ecosystem 4	821	779	837	719	702	772
Ecosystem 5	1,000	862	824	847	846	876
Ecosystem 6	1,080	999	930	862	948	964
Ecosystem 7	573	555	485	455	471	508
Ecosystem 8	1,527	1,428	1,446	1,313	1,369	1,417
WIOA Region of School						
Delta	639	646	567	461	456	554
MS Partnership	1,966	1,875	1,881	1,635	1,725	1,816
South Central	1,573	1,417	1,309	1,302	1,317	1,384
Twin Districts	2,607	2,427	2,376	2,175	2,317	2,380
Major						
Agriculture and Life Sciences	223	203	254	187	213	216
Architecture, Art, and Design	<10	<10	12	20	14	12
Arts and Sciences	3,615	3,124	2,977	2,648	2,626	2,998
Business	421	365	416	383	435	404
Education	1,031	1,096	1,047	965	1,016	1,031
Engineering	444	468	472	408	447	448
Fine Arts	211	253	220	217	209	222
Legal Studies	123	148	140	129	116	131
Production	696	695	582	599	631	641
Undeclared	17	<10	13	17	108	32
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	1,388	1,240	1,178	1,080	1,114	1,200

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
2. Architecture and Construction	575	610	533	473	505	539
3. Arts, A/V Technology, and Communications	305	316	322	320	282	309
4. Business, Marketing, and Finance	944	758	594	532	525	671
5. Education and Training	486	455	447	382	393	433
6. Health Science	1,553	1,422	1,576	1,488	1,508	1,509
7. Hospitality and Tourism	497	454	509	440	405	461
8. Human Services	381	378	376	316	439	378
9. Information Technology	131	109	125	127	169	132
10. Law, Public Safety, Corrections, and Security	246	270	272	252	340	276
11. Manufacturing	374	414	356	352	387	377
12. Science, Technology, Engineering, and Mathematics	364	397	379	362	373	375
13. Transportation, Distribution, and Logistics	498	429	374	304	266	374
14. CTE Dual Credit Multi-Category	-	-	-	-	17	17

A1.2.15 Enrollment of K-12 CTE Concentrators at Mississippi Community College; Number of K-12 CTE Concentrators who Graduated K-12 and Subsequently Enrolled in Mississippi Community College within One Year of Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***4,458***	***4,255***	***3,964***	***3,773***	***4,016***	***4,093***
Gender						
Female	2,469	2,441	2,338	2,211	2,283	2,348
Male	1,989	1,814	1,626	1,562	1,733	1,745
Race						
Black	2,125	1,986	1,787	1,676	1,739	1,863
White	2,178	2,122	2,014	1,901	2,059	2,055
Other	155	147	163	196	218	176
Race_Gender						
Black, Female	1,266	1,269	1,155	1,075	1,066	1,166
Black, Male	859	717	632	601	673	696
White, Female	1,126	1,088	1,089	1,006	1,108	1,083
White, Male	1,052	1,034	925	895	951	971
Other, Female	77	84	94	130	109	99
Other, Male	78	63	69	66	109	77
Other Demographics						
1. Economically Disadvantaged	1,035	1,085	1,147	1,425	1,407	1,220
2. Children with Disabilities	86	82	103	113	128	102
3. English learner	15	17	22	28	40	24
4. Homeless	28	20	25	40	33	29
Ecosystem of School						
Ecosystem 1	245	279	231	214	243	242
Ecosystem 2	614	550	494	402	475	507
Ecosystem 3	277	259	243	176	209	233
Ecosystem 4	502	451	486	493	457	478
Ecosystem 5	588	541	503	555	614	560
Ecosystem 6	707	688	608	563	659	645
Ecosystem 7	393	368	331	337	322	350
Ecosystem 8	1,132	1,119	1,068	1,033	1,037	1,078
WIOA Region of School						
Delta	404	408	358	304	328	360
MS Partnership	1,234	1,131	1,096	981	1,056	1,100
South Central	981	909	834	892	936	910
Twin Districts	1,839	1,807	1,676	1,596	1,696	1,723
Major						
Agriculture and Life Sciences	150	140	156	117	144	141
Architecture, Art, and Design	<10	<10	<10	12	10	<10
Arts and Sciences	2,329	2,069	1,919	1,806	1,834	1,991
Business	272	236	237	226	276	249
Education	645	696	671	665	684	672
Engineering	332	348	321	270	308	316
Fine Arts	148	163	138	144	142	147
Legal Studies	72	82	88	94	81	83
Production	499	513	417	432	473	467
Undeclared	<10	<10	<10	<10	64	18
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	746	649	514	448	423	556

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
2. Architecture and Construction	363	368	303	288	346	334
3. Arts, A/V Technology, and Communications	193	187	168	184	157	178
4. Business, Marketing, and Finance	451	451	320	288	284	359
5. Education and Training	265	298	287	252	280	276
6. Health Science	1,088	1,049	1,121	1,122	1,083	1,093
7. Hospitality and Tourism	295	273	276	259	244	269
8. Human Services	264	258	234	216	361	267
9. Information Technology	75	61	81	53	81	70
10. Law, Public Safety, Corrections, and Security	108	127	147	150	213	149
11. Manufacturing	228	265	237	246	267	249
12. Science, Technology, Engineering, and Mathematics	230	220	218	221	232	224
13. Transportation, Distribution, and Logistics	309	226	201	187	168	218
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.16 Enrollment of K-12 CTE Participants at Mississippi Public University; Number of K-12 CTE Participants who Graduated K-12 and Subsequently Enrolled in Mississippi Public University within One Year of Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***1,664***	***1,524***	***1,469***	***1,503***	***1,781***	***1,588***
Gender						
Female	1,036	954	951	991	1,146	1,016
Male	628	570	518	512	635	573
Race						
Black	992	861	781	774	920	866
White	599	609	616	637	764	645
Other	73	54	72	92	97	78
Race_Gender						
Black, Female	651	590	557	549	637	597
Black, Male	341	271	224	225	283	269
White, Female	346	335	361	384	450	375
White, Male	253	274	255	253	314	270
Other, Female	39	29	33	58	59	44
Other, Male	34	25	39	34	38	34
Other Demographics						
1. Economically Disadvantaged	340	407	328	432	534	408
2. Children with Disabilities	<10	12	<10	<10	13	10
3. English learner	<10	<10	<10	<10	10	<10
4. Homeless	<10	10	<10	14	14	11
Ecosystem of School						
Ecosystem 1	156	114	140	123	111	129
Ecosystem 2	139	112	122	131	153	131
Ecosystem 3	175	179	114	114	148	146
Ecosystem 4	157	142	171	157	166	159
Ecosystem 5	377	389	319	361	498	389
Ecosystem 6	153	142	139	147	182	153
Ecosystem 7	126	120	99	110	90	109
Ecosystem 8	381	326	365	360	433	373
WIOA Region of School						
Delta	251	211	171	174	190	199
MS Partnership	376	336	376	351	388	365
South Central	503	509	418	471	588	498
Twin Districts	534	468	504	507	615	526
Major						
Agriculture and Life Sciences	326	295	307	310	322	312
Architecture, Art, and Design	10	<10	12	15	11	11
Arts and Sciences	436	369	363	367	438	395
Business	179	155	143	157	190	165
Education	354	344	334	361	375	354
Engineering	235	236	202	212	318	241
Fine Arts	61	55	59	38	61	55
Legal Studies	62	56	48	43	59	54
Production	<10	<10	<10	<10	<10	<10
Undeclared	<10	<10	<10	<10	<10	<10
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	187	147	142	141	173	158

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
2. Architecture and Construction	117	100	74	76	102	94
3. Arts, A/V Technology, and Communications	95	99	116	102	119	106
4. Business, Marketing, and Finance	246	213	203	190	195	209
5. Education and Training	113	81	80	104	118	99
6. Health Science	507	511	499	555	606	536
7. Hospitality and Tourism	105	92	106	102	133	108
8. Human Services	88	77	84	83	130	92
9. Information Technology	30	29	37	58	85	48
10. Law, Public Safety, Corrections, and Security	78	68	63	54	85	70
11. Manufacturing	37	31	34	26	48	35
12. Science, Technology, Engineering, and Mathematics	170	177	157	153	216	175
13. Transportation, Distribution, and Logistics	62	60	50	30	37	48
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.17 Enrollment of K-12 CTE Concentrators at Mississippi Public University; Number of K-12 CTE Concentrators who Graduated K-12 and Subsequently Enrolled in Mississippi Public University within One Year of Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***1,076***	***1,002***	***946***	***996***	***1,175***	***1,039***
Gender						
Female	698	625	631	661	780	679
Male	378	377	315	335	395	360
Race						
Black	654	541	531	498	646	574
White	373	417	372	430	464	411
Other	49	44	43	68	65	54
Race_Gender						
Black, Female	452	372	381	355	457	403
Black, Male	202	169	150	143	189	171
White, Female	217	230	228	263	280	244
White, Male	156	187	144	167	184	168
Other, Female	29	23	22	43	43	32
Other, Male	20	21	21	25	22	22
Other Demographics						
1. Economically Disadvantaged	220	259	224	276	367	269
2. Children with Disabilities	<10	<10	<10	<10	10	<10
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	10	<10	<10	13	<10
Ecosystem of School						
Ecosystem 1	100	77	82	79	75	83
Ecosystem 2	79	63	55	63	69	66
Ecosystem 3	113	94	72	74	100	91
Ecosystem 4	104	90	104	105	108	102
Ecosystem 5	216	256	204	243	361	256
Ecosystem 6	106	106	103	100	116	106
Ecosystem 7	88	76	73	75	63	75
Ecosystem 8	270	240	253	257	283	261
WIOA Region of School						
Delta	165	117	109	115	131	127
MS Partnership	231	207	204	206	221	214
South Central	304	332	277	318	424	331
Twin Districts	376	346	356	357	399	367
Major						
Agriculture and Life Sciences	230	199	206	216	234	217
Architecture, Art, and Design	<10	<10	<10	<10	<10	<10
Arts and Sciences	251	239	229	245	265	246
Business	110	98	84	88	112	98
Education	250	232	230	243	271	245
Engineering	154	160	124	144	206	158

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Fine Arts	39	33	37	28	35	34
Legal Studies	36	34	28	23	39	32
Production	<10	<10	<10	<10	<10	<10
Undeclared	<10	<10	<10	<10	<10	<10
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	105	88	64	51	61	74
2. Architecture and Construction	70	47	49	42	70	56
3. Arts, A/V Technology, and Communications	60	56	55	58	56	57
4. Business, Marketing, and Finance	137	113	102	96	96	109
5. Education and Training	47	52	48	67	62	55
6. Health Science	375	391	369	421	421	395
7. Hospitality and Tourism	62	49	61	54	69	59
8. Human Services	56	40	43	57	108	61
9. Information Technology	21	21	18	21	24	21
10. Law, Public Safety, Corrections, and Security	25	29	37	24	46	32
11. Manufacturing	19	19	14	18	32	20
12. Science, Technology, Engineering, and Mathematics	98	107	89	97	145	107
13. Transportation, Distribution, and Logistics	25	28	26	19	22	24
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.18 College Retention of K-12 CTE Participants; Number of K-12 CTE Participants who Enrolled in Community College after K-12 Graduation and then Continued to be Enrolled in the Subsequent Fall Semester of the Second Academic Year

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***4,413***	***4,131***	***3,818***	***3,618***	***3,874***	***3,971***
Gender						
Female	2,542	2,446	2,311	2,141	2,269	2,342
Male	1,871	1,685	1,507	1,477	1,605	1,629
Race						
Black	2,106	1,924	1,730	1,603	1,629	1,798
White	2,152	2,046	1,920	1,825	2,012	1,991
Other	155	161	168	190	233	181
Race_Gender						
Black, Female	1,317	1,259	1,136	1,044	1,030	1,157
Black, Male	789	665	594	559	599	641
White, Female	1,153	1,094	1,075	980	1,109	1,082
White, Male	999	952	845	845	903	909
Other, Female	72	93	100	117	130	102
Other, Male	83	68	68	73	103	79
Other Demographics						
1. Economically Disadvantaged	990	1,037	1,105	1,300	1,297	1,146
2. Children with Disabilities	76	61	80	108	103	86
3. English learner	15	22	26	20	48	26
4. Homeless	32	23	16	30	34	27
Ecosystem of School						
Ecosystem 1	275	286	266	239	246	262
Ecosystem 2	654	590	532	483	578	567
Ecosystem 3	248	275	214	169	175	216
Ecosystem 4	547	484	493	421	494	488
Ecosystem 5	641	586	533	530	554	569
Ecosystem 6	654	617	539	553	600	593
Ecosystem 7	382	373	315	316	333	344
Ecosystem 8	1,012	920	926	907	894	932
WIOA Region of School						
Delta	387	419	345	290	284	345
MS Partnership	1,337	1,216	1,160	1,022	1,209	1,189
South Central	1,023	959	848	846	887	913
Twin Districts	1,666	1,537	1,465	1,460	1,494	1,524
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	875	793	734	690	748	768
2. Architecture and Construction	351	359	305	273	302	318
3. Arts, A/V Technology, and Communications	232	213	186	201	183	203
4. Business, Marketing, and Finance	612	513	395	339	340	440
5. Education and Training	319	291	291	242	287	286

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	1,110	1,027	1,093	1,052	1,089	1,074
7. Hospitality and Tourism	299	291	287	288	254	284
8. Human Services	234	252	220	200	289	239
9. Information Technology	88	80	90	77	112	89
10. Law, Public Safety, Corrections, and Security	139	180	161	149	210	168
11. Manufacturing	203	206	177	185	218	198
12. Science, Technology, Engineering, and Mathematics	267	268	232	254	250	254
13. Transportation, Distribution, and Logistics	297	239	190	194	148	214
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.19 College Retention of K-12 CTE Concentrators; Number of K-12 CTE Concentrators who Enrolled in Community College after K-12 Graduation and then Continued to be Enrolled in the Subsequent Fall Semester of the Second Academic Year

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***3,016***	***2,818***	***2,522***	***2,522***	***2,722***	***2,720***
Gender						
Female	1,750	1,731	1,566	1,545	1,612	1,641
Male	1,266	1,087	956	977	1,110	1,079
Race						
Black	1,377	1,293	1,113	1,091	1,136	1,202
White	1,523	1,423	1,297	1,296	1,432	1,394
Other	116	102	112	135	154	124
Race_Gender						
Black, Female	882	893	755	742	726	800
Black, Male	495	400	358	349	410	402
White, Female	813	773	745	714	801	769
White, Male	710	650	552	582	631	625
Other, Female	55	65	66	89	85	72
Other, Male	61	37	46	46	69	52
Other Demographics						
1. Economically Disadvantaged	684	700	730	918	951	797
2. Children with Disabilities	53	42	56	66	72	58
3. English learner	11	10	17	18	29	17
4. Homeless	19	16	12	23	24	19
Ecosystem of School						
Ecosystem 1	173	180	153	142	169	163
Ecosystem 2	434	364	325	278	332	347
Ecosystem 3	179	174	145	115	130	149
Ecosystem 4	350	291	286	306	338	314
Ecosystem 5	387	373	331	347	399	367
Ecosystem 6	442	435	364	370	432	409
Ecosystem 7	268	255	215	237	229	241
Ecosystem 8	783	746	703	727	693	730
WIOA Region of School						
Delta	259	259	220	196	212	229
MS Partnership	877	750	689	645	757	744
South Central	655	628	546	584	628	608
Twin Districts	1,225	1,181	1,067	1,097	1,125	1,139
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	459	409	315	300	282	353
2. Architecture and Construction	237	219	178	178	214	205
3. Arts, A/V Technology, and Communications	152	121	100	120	103	119
4. Business, Marketing, and Finance	311	304	214	187	191	241
5. Education and Training	188	199	199	166	212	193

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	815	775	792	807	799	798
7. Hospitality and Tourism	174	183	151	175	158	168
8. Human Services	170	173	143	143	238	173
9. Information Technology	53	46	56	37	58	50
10. Law, Public Safety, Corrections, and Security	61	89	89	92	135	93
11. Manufacturing	128	132	124	129	154	133
12. Science, Technology, Engineering, and Mathematics	173	156	145	161	160	159
13. Transportation, Distribution, and Logistics	197	120	102	122	100	128
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.20 University Retention of K-12 CTE Participants; Number of K-12 CTE Participants who Enrolled in Public University after K-12 Graduation and then Continued to be Enrolled in the Subsequent Fall Semester of the Second Academic Year

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***1,215***	***1,171***	***1,075***	***1,145***	***1,385***	***1,198***
Gender						
Female	781	752	699	758	890	776
Male	434	419	376	387	495	422
Race						
Black	693	632	538	552	663	616
White	464	496	478	516	636	518
Other	58	43	59	77	86	65
Race_Gender						
Black, Female	468	449	390	393	459	432
Black, Male	225	183	148	159	204	184
White, Female	281	281	281	316	379	308
White, Male	183	215	197	200	257	210
Other, Female	32	22	28	49	52	37
Other, Male	26	21	31	28	34	28
Other Demographics						
1. Economically Disadvantaged	241	300	232	300	391	293
2. Children with Disabilities	<10	12	<10	<10	10	<10
3. English learner	<10	<10	<10	<10	10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	116	96	110	97	83	100
Ecosystem 2	113	89	99	105	126	106
Ecosystem 3	109	113	75	76	101	95
Ecosystem 4	106	114	107	115	121	113
Ecosystem 5	293	315	253	278	412	310
Ecosystem 6	105	111	97	111	129	111
Ecosystem 7	85	90	67	90	69	80
Ecosystem 8	288	243	267	273	344	283
WIOA Region of School						
Delta	161	134	118	119	132	133
MS Partnership	283	278	273	274	299	281
South Central	378	405	320	368	481	390
Twin Districts	393	354	364	384	473	394
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	153	120	95	108	133	122
2. Architecture and Construction	65	64	45	53	79	61
3. Arts, A/V Technology, and Communications	77	78	93	73	87	82
4. Business, Marketing, and Finance	175	158	151	142	148	155
5. Education and Training	81	63	49	79	88	72

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	400	425	396	443	506	434
7. Hospitality and Tourism	62	64	74	70	95	73
8. Human Services	66	53	56	63	97	67
9. Information Technology	22	26	27	46	68	38
10. Law, Public Safety, Corrections, and Security	49	51	40	40	66	49
11. Manufacturing	23	23	24	13	36	24
12. Science, Technology, Engineering, and Mathematics	133	131	110	120	175	134
13. Transportation, Distribution, and Logistics	32	35	32	22	26	29
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.21 University Retention of K-12 CTE Concentrators; Number of K-12 CTE Concentrators who Enrolled in Public University after K-12 Graduation and then Continued to be Enrolled in the Subsequent Fall Semester of the Second Academic Year

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***793***	***784***	***697***	***758***	***922***	***791***
Gender						
Female	524	501	471	506	618	524
Male	269	283	226	252	304	267
Race						
Black	461	408	375	356	475	415
White	293	343	287	345	390	332
Other	39	33	35	57	57	44
Race_Gender						
Black, Female	326	288	273	256	339	296
Black, Male	135	120	102	100	136	119
White, Female	175	197	179	214	242	201
White, Male	118	146	108	131	148	130
Other, Female	23	16	19	36	37	26
Other, Male	16	17	16	21	20	18
Other Demographics						
1. Economically Disadvantaged	162	191	159	186	273	194
2. Children with Disabilities	<10	<10	<10	<10	<10	<10
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	73	66	67	66	57	66
Ecosystem 2	66	52	44	47	57	53
Ecosystem 3	68	59	53	49	69	60
Ecosystem 4	69	73	63	76	79	72
Ecosystem 5	171	215	161	189	306	208
Ecosystem 6	71	84	73	76	80	77
Ecosystem 7	64	57	49	60	51	56
Ecosystem 8	211	178	187	195	223	199
WIOA Region of School						
Delta	103	74	81	79	91	86
MS Partnership	173	176	146	159	171	165
South Central	235	272	210	249	357	265
Twin Districts	282	262	260	271	303	276
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	89	77	48	37	47	60
2. Architecture and Construction	37	30	27	29	54	35
3. Arts, A/V Technology, and Communications	48	45	46	39	42	44
4. Business, Marketing, and Finance	93	82	73	70	67	77
5. Education and Training	37	41	28	54	48	42

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	300	326	298	338	353	323
7. Hospitality and Tourism	38	32	43	37	49	40
8. Human Services	39	26	30	40	83	44
9. Information Technology	17	18	12	16	21	17
10. Law, Public Safety, Corrections, and Security	13	23	24	20	36	23
11. Manufacturing	10	12	10	11	24	13
12. Science, Technology, Engineering, and Mathematics	78	83	62	78	116	83
13. Transportation, Distribution, and Logistics	14	19	17	12	14	15
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.22 College Alignment of K-12 CTE Participants; Number of K-12 CTE Participants who Enrolled in a Mississippi Community College after K-12 Graduation and Subsequently Declare a Major that is Aligned with their K-12 CTE Cluster

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***513***	***531***	***514***	***394***	***439***	***478***
Gender						
Female	155	162	178	108	125	146
Male	358	369	336	286	314	333
Race						
Black	236	241	233	167	173	210
White	256	274	255	208	235	246
Other	21	16	26	19	31	23
Race_Gender						
Black, Female	93	97	111	54	60	83
Black, Male	143	144	122	113	113	127
White, Female	59	58	60	47	55	56
White, Male	197	216	195	161	180	190
Other, Female	<10	<10	<10	<10	10	<10
Other, Male	18	<10	19	12	21	16
Other Demographics						
1. Economically Disadvantaged	118	136	154	163	162	147
2. Children with Disabilities	18	16	18	28	29	22
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	32	32	32	31	33	32
Ecosystem 2	65	56	52	45	55	55
Ecosystem 3	32	24	33	22	18	26
Ecosystem 4	40	54	56	55	44	50
Ecosystem 5	79	74	60	46	59	64
Ecosystem 6	91	81	90	68	80	82
Ecosystem 7	41	55	32	29	28	37
Ecosystem 8	133	155	159	98	122	133
WIOA Region of School						
Delta	50	38	45	32	31	39
MS Partnership	119	128	128	121	119	123
South Central	120	129	92	75	87	101
Twin Districts	224	236	249	166	202	215
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	22	17	19	14	12	17
2. Architecture and Construction	98	102	91	88	87	93
3. Arts, A/V Technology, and Communications	16	28	21	19	11	19
4. Business, Marketing, and Finance	37	44	40	21	30	34
5. Education and Training	<10	<10	<10	<10	<10	<10

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	56	45	62	18	32	43
7. Hospitality and Tourism	23	38	29	31	28	30
8. Human Services	44	40	42	28	30	37
9. Information Technology	25	<10	24	11	20	17
10. Law, Public Safety, Corrections, and Security	<10	<10	<10	<10	<10	<10
11. Manufacturing	95	123	111	96	120	109
12. Science, Technology, Engineering, and Mathematics	<10	<10	<10	<10	<10	<10
13. Transportation, Distribution, and Logistics	90	82	65	61	64	72
14. CTE Dual Credit Multi-Category	-	-	-	-	-	-

A1.2.23 College Alignment of K-12 CTE Concentrators; Number of K-12 CTE Concentrators who Enrolled in a Mississippi Community College after K-12 Graduation and Subsequently Declare a Major that is Aligned with their K-12 CTE Cluster

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***389***	***413***	***378***	***304***	***346***	***366***
Gender						
Female	121	130	127	83	103	113
Male	268	283	251	221	243	253
Race						
Black	166	172	165	127	127	151
White	205	226	195	160	192	196
Other	18	15	18	17	27	19
Race_Gender						
Black, Female	70	77	77	41	49	63
Black, Male	96	95	88	86	78	89
White, Female	49	46	43	36	45	44
White, Male	156	180	152	124	147	152
Other, Female	<10	<10	<10	<10	<10	<10
Other, Male	16	<10	11	11	18	13
Other Demographics						
1. Economically Disadvantaged	98	108	109	126	131	114
2. Children with Disabilities	12	15	17	23	23	18
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	21	24	28	25	23	24
Ecosystem 2	54	41	39	24	39	39
Ecosystem 3	24	18	22	15	17	19
Ecosystem 4	33	32	42	38	37	36
Ecosystem 5	52	52	37	37	47	45
Ecosystem 6	65	63	60	54	63	61
Ecosystem 7	31	42	24	25	21	29
Ecosystem 8	109	141	126	86	99	112
WIOA Region of School						
Delta	35	26	32	23	22	28
MS Partnership	97	89	99	79	94	92
South Central	83	94	61	62	68	74
Twin Districts	174	204	186	140	162	173
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	18	15	<10	<10	<10	11
2. Architecture and Construction	75	82	66	66	69	72
3. Arts, A/V Technology, and Communications	13	24	16	17	11	16
4. Business, Marketing, and Finance	25	37	35	15	18	26
5. Education and Training	<10	<10	<10	<10	<10	<10

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	36	27	36	14	27	28
7. Hospitality and Tourism	21	33	24	25	25	26
8. Human Services	37	34	34	21	28	31
9. Information Technology	22	<10	22	<10	16	15
10. Law, Public Safety, Corrections, and Security	<10	<10	<10	<10	<10	<10
11. Manufacturing	65	94	88	81	93	84
12. Science, Technology, Engineering, and Mathematics	<10	<10	<10	<10	<10	<10
13. Transportation, Distribution, and Logistics	73	59	44	46	49	54
14. CTE Dual Credit Multi-Category	-	-	-	-	-	-

A1.2.24 University Alignment of K-12 CTE Participants; Number of K-12 CTE Participants who Enrolled in a Mississippi Public University after K-12 Graduation and Subsequently Declare a Major that is Aligned with their K-12 CTE Cluster

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***440***	***424***	***409***	***420***	***502***	***439***
Gender						
Female	272	237	245	265	292	262
Male	168	187	164	155	210	177
Race						
Black	233	213	202	177	218	209
White	183	189	182	210	252	203
Other	24	22	25	33	32	27
Race_Gender						
Black, Female	161	141	140	130	148	144
Black, Male	72	72	62	47	70	65
White, Female	99	88	92	118	129	105
White, Male	84	101	90	92	123	98
Other, Female	12	<10	13	17	15	13
Other, Male	12	14	12	16	17	14
Other Demographics						
1. Economically Disadvantaged	89	106	90	125	111	104
2. Children with Disabilities	<10	<10	<10	<10	<10	<10
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	37	23	33	34	26	31
Ecosystem 2	34	31	34	41	37	35
Ecosystem 3	22	34	18	15	30	24
Ecosystem 4	53	44	49	48	42	47
Ecosystem 5	91	101	93	94	152	106
Ecosystem 6	42	36	43	35	49	41
Ecosystem 7	39	30	20	31	21	28
Ecosystem 8	122	125	119	122	145	127
WIOA Region of School						
Delta	30	38	28	24	40	32
MS Partnership	116	94	106	114	95	105
South Central	130	131	113	125	173	134
Twin Districts	164	161	162	157	194	168
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	21	26	18	16	20	20
2. Architecture and Construction	14	11	15	12	20	14
3. Arts, A/V Technology, and Communications	19	17	19	17	14	17
4. Business, Marketing, and Finance	54	45	46	46	46	47
5. Education and Training	37	29	24	27	34	30

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	139	133	138	154	139	141
7. Hospitality and Tourism	14	13	19	<10	15	14
8. Human Services	13	<10	<10	<10	13	10
9. Information Technology	21	16	20	26	49	26
10. Law, Public Safety, Corrections, and Security	17	<10	11	12	17	13
11. Manufacturing	<10	<10	<10	<10	<10	<10
12. Science, Technology, Engineering, and Mathematics	86	111	85	94	130	101
13. Transportation, Distribution, and Logistics	<10	<10	<10	<10	<10	<10
14. CTE Dual Credit Multi-Category	-	-	-	-	-	-

A1.2.25 University Alignment of K-12 CTE Concentrators; Number of K-12 CTE Concentrators who Enrolled in a Mississippi Public University after K-12 Graduation and Subsequently Declare a Major that is Aligned with their K-12 CTE Cluster

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***318***	***318***	***297***	***297***	***345***	***315***
Gender						
Female	202	176	189	190	213	194
Male	116	142	108	107	132	121
Race						
Black	164	155	153	119	155	149
White	138	146	124	152	168	146
Other	16	17	20	26	22	20
Race_Gender						
Black, Female	114	103	108	88	108	104
Black, Male	50	52	45	31	47	45
White, Female	79	67	70	88	91	79
White, Male	59	79	54	64	77	67
Other, Female	<10	<10	11	14	14	11
Other, Male	<10	11	<10	12	<10	<10
Other Demographics						
1. Economically Disadvantaged	70	80	72	76	80	76
2. Children with Disabilities	<10	<10	<10	<10	<10	<10
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	25	20	23	21	22	22
Ecosystem 2	24	20	17	19	19	20
Ecosystem 3	18	24	14	10	18	17
Ecosystem 4	33	32	39	37	30	34
Ecosystem 5	59	72	63	72	110	75
Ecosystem 6	32	29	37	27	34	32
Ecosystem 7	32	20	15	17	12	19
Ecosystem 8	95	101	89	94	100	96
WIOA Region of School						
Delta	23	27	22	14	27	23
MS Partnership	77	69	71	73	62	70
South Central	91	92	78	89	122	94
Twin Districts	127	130	126	121	134	128
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	12	21	13	<10	10	13
2. Architecture and Construction	10	<10	12	<10	16	11
3. Arts, A/V Technology, and Communications	12	14	10	11	<10	11
4. Business, Marketing, and Finance	38	30	29	24	21	28
5. Education and Training	22	22	20	21	21	21

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	116	113	118	125	116	118
7. Hospitality and Tourism	10	10	14	<10	11	10
8. Human Services	<10	<10	<10	<10	11	<10
9. Information Technology	17	10	12	14	16	14
10. Law, Public Safety, Corrections, and Security	<10	<10	10	<10	12	<10
11. Manufacturing	<10	<10	<10	<10	<10	<10
12. Science, Technology, Engineering, and Mathematics	61	78	51	66	96	70
13. Transportation, Distribution, and Logistics	<10	<10	<10	<10	<10	<10
14. CTE Dual Credit Multi-Category	-	-	-	-	-	-

A1.2.26 Employment of K-12 CTE Participants; Number of K-12 CTE Participants Employed within One Year of K-12 Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***2,914***	***2,971***	***3,781***	***3,862***	***3,847***	***3,475***
Gender						
Female	1,150	1,150	1,542	1,648	1,617	1,421
Male	1,764	1,821	2,239	2,214	2,230	2,054
Race						
Black	1,433	1,419	1,992	2,015	1,971	1,766
White	1,387	1,425	1,639	1,663	1,676	1,558
Other	94	127	150	184	200	151
Race_Gender						
Black, Female	647	638	923	956	922	817
Black, Male	786	781	1,069	1,059	1,049	949
White, Female	457	454	557	616	609	539
White, Male	930	971	1,082	1,047	1,067	1,019
Other, Female	46	58	62	76	86	66
Other, Male	48	69	88	108	114	85
Other Demographics						
1. Economically Disadvantaged	656	772	1,217	1,469	1,401	1,103
2. Children with Disabilities	82	111	153	209	197	150
3. English learner	<10	23	31	45	57	33
4. Homeless	34	25	49	43	33	37
Ecosystem of School						
Ecosystem 1	239	268	337	316	260	284
Ecosystem 2	435	453	539	504	508	488
Ecosystem 3	155	148	211	284	266	213
Ecosystem 4	307	332	438	421	448	389
Ecosystem 5	434	385	566	578	729	538
Ecosystem 6	409	483	545	535	517	498
Ecosystem 7	197	221	292	333	294	267
Ecosystem 8	738	681	853	891	825	798
WIOA Region of School						
Delta	272	264	360	446	382	345
MS Partnership	864	937	1,165	1,079	1,100	1,029
South Central	631	606	858	911	1,023	806
Twin Districts	1,147	1,164	1,398	1,426	1,342	1,295
Industry						
Accommodation/Leisure	957	922	1,150	1,183	1,111	1,065
Administrative and Waste Services	333	360	428	393	358	374
Construction	159	178	194	194	234	192
Educational Services	28	26	16	22	25	23
Financial Activities	18	19	14	22	32	21
Health Care and Social Assistance	111	111	141	146	161	134
Information	<10	<10	10	17	24	14
Management of Companies and Enterprises	25	32	<10	12	11	16

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Manufacturing	345	367	523	513	494	448
Natural Resources	37	32	28	37	23	31
Other Services (except Public Administration)	64	51	68	67	92	68
Professional, Scientific, and Technical Services	32	24	30	41	48	35
Public Administration	50	61	54	53	57	55
Transportation and Warehousing	66	55	124	120	167	106
Utilities	<10	<10	<10	<10	11	<10
Wholesale/Retail Trade	671	707	990	1,031	996	879
Industry not reported	<10	13	<10	<10	<10	<10
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	632	607	793	770	723	705
2. Architecture and Construction	376	387	510	470	458	440
3. Arts, A/V Technology, and Communications	103	126	135	190	194	150
4. Business, Marketing, and Finance	388	284	359	340	316	337
5. Education and Training	120	146	180	224	198	174
6. Health Science	323	373	438	491	500	425
7. Hospitality and Tourism	201	236	325	306	319	277
8. Human Services	144	144	236	227	302	211
9. Information Technology	47	53	51	66	83	60
10. Law, Public Safety, Corrections, and Security	122	157	184	208	247	184
11. Manufacturing	316	383	488	494	518	440
12. Science, Technology, Engineering, and Mathematics	152	149	203	211	223	188
13. Transportation, Distribution, and Logistics	420	385	444	383	377	402
14. CTE Dual Credit Multi-Category	-	-	-	-	15	15

A1.2.27 Employment of K-12 CTE Concentrators; Number of K-12 CTE Concentrators Employed within One Year of K-12 Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***1,865***	***1,878***	***2,321***	***2,417***	***2,417***	***2,180***
Gender						
Female	713	691	935	1,018	983	868
Male	1,152	1,187	1,386	1,399	1,434	1,312
Race						
Black	847	829	1,160	1,212	1,197	1,049
White	961	963	1,071	1,097	1,102	1,039
Other	57	86	90	108	118	92
Race_Gender						
Black, Female	382	378	550	581	559	490
Black, Male	465	451	610	631	638	559
White, Female	302	275	345	392	370	337
White, Male	659	688	726	705	732	702
Other, Female	29	38	40	45	54	41
Other, Male	28	48	50	63	64	51
Other Demographics						
1. Economically Disadvantaged	415	476	756	924	899	694
2. Children with Disabilities	54	71	80	133	110	90
3. English learner	<10	16	21	27	26	19
4. Homeless	22	17	29	24	15	21
Ecosystem of School						
Ecosystem 1	135	159	174	173	150	158
Ecosystem 2	291	297	295	285	309	295
Ecosystem 3	98	94	136	194	165	137
Ecosystem 4	195	189	254	233	245	223
Ecosystem 5	252	226	372	379	484	343
Ecosystem 6	253	311	330	332	327	311
Ecosystem 7	122	127	179	230	196	171
Ecosystem 8	519	475	581	591	541	541
WIOA Region of School						
Delta	174	165	209	296	239	217
MS Partnership	545	574	650	589	630	598
South Central	374	353	551	609	680	513
Twin Districts	772	786	911	923	868	852
Industry						
Accommodation/Leisure	587	556	699	733	693	654
Administrative and Waste Services	211	211	261	222	210	223
Construction	106	128	116	130	152	126
Educational Services	18	17	<10	17	14	15
Financial Activities	11	10	10	16	22	14
Health Care and Social Assistance	72	68	86	96	92	83
Information	<10	<10	<10	12	18	10
Management of Companies and Enterprises	17	11	<10	<10	<10	<10

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Manufacturing	224	238	317	312	296	277
Natural Resources	26	27	11	24	14	20
Other Services (except Public Administration)	47	40	46	37	65	47
Professional, Scientific, and Technical Services	22	14	23	27	37	25
Public Administration	32	48	36	36	44	39
Transportation and Warehousing	37	28	68	86	103	64
Utilities	<10	<10	<10	<10	<10	<10
Wholesale/Retail Trade	440	464	625	654	642	565
Industry not reported	<10	<10	<10	<10	<10	<10
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	337	315	344	323	292	322
2. Architecture and Construction	232	245	322	292	293	277
3. Arts, A/V Technology, and Communications	61	71	75	103	100	82
4. Business, Marketing, and Finance	167	139	198	178	147	166
5. Education and Training	68	85	121	145	110	106
6. Health Science	209	227	272	320	287	263
7. Hospitality and Tourism	125	145	175	166	167	156
8. Human Services	96	95	143	153	232	144
9. Information Technology	23	28	29	26	31	27
10. Law, Public Safety, Corrections, and Security	63	63	93	114	151	97
11. Manufacturing	203	259	297	325	332	283
12. Science, Technology, Engineering, and Mathematics	93	56	84	95	101	86
13. Transportation, Distribution, and Logistics	264	225	247	241	233	242
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10

A1.2.28 Average Annualized Earnings of Employed K-12 CTE Participants; Earnings of K-12 CTE Participants who are Employed within One Year of K-12 Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***$11,563***	***$11,965***	***$13,010***	***$14,534***	***$15,338***	***$13,424***
Gender						
Female	$9,176	$9,902	$10,067	$12,474	$11,740	$10,793
Male	$13,625	$14,103	$15,498	$17,575	$18,772	$16,054
Race						
Black	$9,814	$10,354	$11,135	$12,820	$13,456	$11,576
White	$13,284	$13,930	$15,789	$17,388	$17,631	$15,554
Other	$13,796	$12,052	$15,734	$18,722	$17,880	$16,396
Race_Gender						
Black, Female	$8,664	$9,802	$9,656	$12,148	$11,602	$10,500
Black, Male	$10,751	$11,031	$12,384	$13,855	$15,345	$12,880
White, Female	$9,683	$9,739	$10,676	$12,618	$11,719	$11,030
White, Male	$16,383	$16,489	$18,711	$21,439	$23,993	$19,148
Other, Female	$13,079	$11,347	$12,454	$14,477	$16,844	$13,562
Other, Male	$17,852	$12,995	$21,361	$23,673	$19,233	$19,161
Other Demographics						
1. Economically Disadvantaged	$12,591	$11,669	$11,884	$14,665	$14,865	$13,481
2. Children with Disabilities	$13,685	$13,828	$15,795	$13,846	$15,869	$14,508
3. English learner	---	$15,857	$14,303	$26,707	$19,648	$18,737
4. Homeless	$10,231	$9,116	$11,548	$16,999	$15,134	$12,618
Ecosystem of School						
Ecosystem 1	$11,312	$11,347	$12,693	$14,465	$16,219	$12,798
Ecosystem 2	$13,587	$12,673	$14,100	$18,349	$18,575	$15,626
Ecosystem 3	$8,285	$8,114	$9,399	$11,512	$11,799	$9,900
Ecosystem 4	$11,602	$11,772	$12,831	$15,002	$15,002	$13,613
Ecosystem 5	$10,969	$11,561	$11,692	$14,206	$15,225	$13,174
Ecosystem 6	$13,200	$13,055	$14,161	$14,175	$15,915	$14,163
Ecosystem 7	$11,317	$11,669	$12,566	$13,793	$13,723	$12,690
Ecosystem 8	$10,928	$12,539	$13,214	$14,621	$15,493	$13,316
WIOA Region of School						
Delta	$8,449	$9,064	$9,857	$12,182	$12,425	$10,625
MS Partnership	$13,303	$11,950	$13,740	$16,750	$16,995	$14,464
South Central	$11,010	$11,569	$12,048	$14,081	$14,510	$13,113
Twin Districts	$11,312	$12,578	$13,532	$14,553	$15,709	$13,675
Industry						
Accommodation/Leisure	$8,820	$9,346	$9,758	$12,039	$12,004	$10,417
Administrative and Waste Services	$13,261	$9,497	$12,754	$14,039	$16,201	$12,993
Construction	$23,226	$23,864	$22,675	$27,597	$32,642	$25,570
Educational Services	$13,869	$6,714	$9,297	$18,986	$17,911	$15,350
Financial Activities	$15,207	$15,827	$15,485	$15,407	$25,468	$18,462
Health Care and Social Assistance	$12,042	$12,110	$11,607	$12,139	$15,194	$12,728
Information	---	---	$8,619	$6,717	$13,032	$10,396
Management of Companies and Enterprises	$12,931	$9,344	---	$10,724	$14,499	$10,753

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Manufacturing	$19,926	$19,768	$21,720	$23,428	$23,868	$21,918
Natural Resources	$30,195	$17,875	$17,610	$28,694	$40,311	$26,852
Other Services (except Public Administration)	$12,464	$16,198	$17,640	$20,299	$20,503	$17,640
Professional, Scientific, and Technical Services	$12,895	$12,723	$15,605	$17,972	$10,387	$13,934
Public Administration	$22,355	$13,907	$19,021	$23,932	$26,646	$21,660
Transportation and Warehousing	$14,376	$11,667	$13,745	$17,035	$17,522	$14,893
Utilities	---	---	---	---	$34,640	---
Wholesale/Retail Trade	$10,117	$12,940	$13,039	$14,241	$14,023	$13,126
Industry not reported	---	$16,000	---	---	---	---
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	$13,515	$14,208	$15,679	$17,726	$19,199	$16,219
2. Architecture and Construction	$13,820	$12,951	$15,312	$17,965	$17,610	$15,394
3. Arts, A/V Technology, and Communications	$8,759	$9,505	$11,558	$13,446	$12,808	$11,700
4. Business, Marketing, and Finance	$10,307	$11,076	$10,597	$13,295	$13,339	$11,515
5. Education and Training	$9,969	$8,482	$9,847	$11,761	$11,586	$10,609
6. Health Science	$8,604	$10,296	$9,033	$11,634	$10,599	$10,304
7. Hospitality and Tourism	$10,032	$11,561	$11,082	$12,988	$13,709	$11,991
8. Human Services	$8,895	$8,995	$10,203	$11,318	$13,179	$10,645
9. Information Technology	$8,547	$14,477	$11,514	$11,226	$15,990	$12,044
10. Law, Public Safety, Corrections, and Security	$12,062	$11,027	$12,902	$12,946	$15,858	$13,068
11. Manufacturing	$16,500	$15,162	$17,369	$19,719	$21,250	$18,309
12. Science, Technology, Engineering, and Mathematics	$10,636	$11,319	$12,120	$14,408	$14,953	$12,991
13. Transportation, Distribution, and Logistics	$14,995	$13,820	$15,832	$20,640	$20,958	$16,879
14. CTE Dual Credit Multi-Category	-	-	-	-	$17,911	$17,911

A1.2.29 Average Annualized Earnings of Employed K-12 CTE Concentrators; Earnings of K-12 CTE Concentrators who are Employed within One Year of K-12 Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***$11,633***	***$12,751***	***$13,564***	***$14,926***	***$15,848***	***$13,852***
Gender						
Female	$9,634	$11,013	$10,278	$12,341	$11,928	$11,113
Male	$13,758	$14,670	$16,270	$18,392	$20,465	$16,738
Race						
Black	$9,773	$11,087	$11,357	$12,755	$13,909	$11,737
White	$13,263	$15,142	$16,650	$17,802	$18,608	$16,270
Other	$15,010	$12,214	$15,434	$18,331	$17,563	$16,398
Race_Gender						
Black, Female	$9,358	$10,890	$9,842	$11,654	$11,780	$10,805
Black, Male	$10,059	$11,161	$12,996	$13,913	$15,980	$13,037
White, Female	$9,832	$10,999	$11,268	$12,728	$11,632	$11,187
White, Male	$16,490	$17,528	$18,969	$22,366	$24,924	$19,747
Other, Female	$13,079	$11,964	$12,108	$13,597	$16,844	$13,326
Other, Male	$18,861	$12,298	$21,624	$24,611	$20,194	$20,194
Other Demographics						
1. Economically Disadvantaged	$11,660	$13,203	$12,831	$15,651	$15,083	$13,944
2. Children with Disabilities	$13,585	$15,464	$15,672	$14,362	$15,562	$15,008
3. English learner	---	$16,751	$12,251	$27,934	$20,589	$18,709
4. Homeless	$11,624	$11,573	$12,084	$16,355	$15,531	$12,618
Ecosystem of School						
Ecosystem 1	$10,473	$11,627	$14,607	$12,710	$15,415	$12,707
Ecosystem 2	$13,587	$14,874	$16,178	$19,307	$19,396	$16,325
Ecosystem 3	$8,589	$8,264	$9,088	$10,951	$14,205	$10,391
Ecosystem 4	$13,155	$13,965	$15,519	$16,595	$15,946	$14,631
Ecosystem 5	$11,480	$11,795	$11,610	$13,946	$15,862	$13,345
Ecosystem 6	$13,200	$14,075	$13,560	$16,177	$17,323	$14,939
Ecosystem 7	$12,375	$11,669	$13,313	$15,750	$12,956	$13,300
Ecosystem 8	$10,844	$13,829	$14,242	$14,752	$15,858	$13,754
WIOA Region of School						
Delta	$10,041	$10,426	$9,842	$11,687	$14,096	$11,406
MS Partnership	$13,153	$13,688	$15,659	$17,507	$17,464	$15,249
South Central	$11,564	$11,732	$12,215	$14,302	$14,734	$13,326
Twin Districts	$11,253	$13,829	$13,944	$15,344	$16,098	$14,026
Industry						
Accommodation/Leisure	$9,155	$9,679	$9,698	$11,739	$12,577	$10,559
Administrative and Waste Services	$13,138	$10,252	$13,339	$13,430	$17,448	$13,166
Construction	$23,904	$26,885	$22,729	$28,269	$34,723	$27,045
Educational Services	$15,689	$29,380	---	$10,808	$28,351	$17,712
Financial Activities	$14,026	$16,476	$18,462	$15,407	$24,019	$18,823
Health Care and Social Assistance	$10,935	$12,630	$9,974	$12,058	$14,284	$11,816
Information	---	---	---	$8,702	$10,396	$10,412
Management of Companies and Enterprises	$12,931	$10,182	---	---	---	---

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Manufacturing	$19,385	$22,123	$24,138	$25,548	$26,850	$23,139
Natural Resources	$31,050	$17,353	$29,876	$28,040	$42,432	$29,450
Other Services (except Public Administration)	$13,225	$16,999	$18,128	$23,289	$21,586	$18,519
Professional, Scientific, and Technical Services	$13,215	$14,151	$16,320	$20,302	$10,622	$14,807
Public Administration	$22,476	$13,907	$22,391	$23,000	$31,690	$22,347
Transportation and Warehousing	$11,660	$10,436	$14,509	$17,279	$18,800	$15,406
Utilities	---	---	---	---	---	---
Wholesale/Retail Trade	$10,062	$13,475	$14,925	$14,766	$13,910	$13,611
Industry not reported	---	---	---	---	---	---
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	$13,515	$16,672	$16,952	$20,026	$20,503	$17,090
2. Architecture and Construction	$13,819	$12,400	$16,420	$18,331	$17,786	$15,683
3. Arts, A/V Technology, and Communications	$9,651	$10,064	$12,132	$13,307	$14,220	$12,502
4. Business, Marketing, and Finance	$9,972	$12,684	$11,303	$12,981	$11,895	$11,847
5. Education and Training	$9,995	$11,367	$9,077	$10,812	$11,729	$10,812
6. Health Science	$8,057	$11,482	$8,887	$11,062	$10,396	$9,848
7. Hospitality and Tourism	$10,742	$11,876	$11,629	$12,755	$14,077	$12,209
8. Human Services	$9,912	$8,783	$11,135	$11,318	$13,644	$11,213
9. Information Technology	$8,664	$14,066	$8,224	$11,963	$14,269	$12,088
10. Law, Public Safety, Corrections, and Security	$10,936	$12,494	$12,637	$14,112	$16,360	$13,688
11. Manufacturing	$15,401	$16,023	$17,622	$21,356	$23,820	$18,848
12. Science, Technology, Engineering, and Mathematics	$11,066	$11,024	$12,221	$14,158	$14,473	$13,266
13. Transportation, Distribution, and Logistics	$15,001	$15,297	$16,351	$21,147	$21,813	$17,394
14. CTE Dual Credit Multi-Category	-	-	-	-	---	---

A1.2.30 Workforce Alignment of K-12 CTE Participants; Number of K-12 CTE Participants who are Employed in an Aligned Industry within One Year of K-12 Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***754***	***733***	***926***	***925***	***944***	***856***
Gender						
Female	246	243	336	339	315	296
Male	508	490	590	586	629	561
Race						
Black	330	325	453	447	424	396
White	404	370	443	439	474	426
Other	20	38	30	39	46	35
Race_Gender						
Black, Female	137	127	192	195	176	165
Black, Male	193	198	261	252	248	230
White, Female	99	97	135	132	121	117
White, Male	305	273	308	307	353	309
Other, Female	10	19	<10	12	18	14
Other, Male	10	19	21	27	28	21
Other Demographics						
1. Economically Disadvantaged	170	183	302	356	326	267
2. Children with Disabilities	23	32	51	43	53	40
3. English learner	<10	10	<10	10	16	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	66	67	70	69	62	67
Ecosystem 2	105	100	123	120	143	118
Ecosystem 3	34	37	45	48	46	42
Ecosystem 4	79	104	132	103	120	108
Ecosystem 5	111	91	138	141	156	127
Ecosystem 6	104	126	130	115	120	119
Ecosystem 7	47	38	56	72	73	57
Ecosystem 8	208	170	232	257	224	218
WIOA Region of School						
Delta	65	64	77	83	72	72
MS Partnership	219	244	293	257	299	262
South Central	158	129	194	213	229	185
Twin Districts	312	296	362	372	344	337
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	81	86	103	96	97	93
2. Architecture and Construction	42	34	35	57	46	43
3. Arts, A/V Technology, and Communications	<10	<10	<10	<10	<10	<10
4. Business, Marketing, and Finance	126	83	94	107	93	101
5. Education and Training	<10	<10	<10	<10	<10	<10

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	37	31	44	43	45	40
7. Hospitality and Tourism	146	168	237	217	223	198
8. Human Services	10	12	18	30	19	18
9. Information Technology	<10	<10	<10	<10	<10	<10
10. Law, Public Safety, Corrections, and Security	19	24	29	37	33	28
11. Manufacturing	71	85	109	108	123	99
12. Science, Technology, Engineering, and Mathematics	53	49	59	67	70	60
13. Transportation, Distribution, and Logistics	183	175	208	169	202	187
14. CTE Dual Credit Multi-Category	-	-	-	-	-	-

A1.2.31 Workforce Alignment of K-12 CTE Concentrators; Number of K-12 CTE Concentrators who are Employed in an Aligned Industry within One Year of K-12 Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***452***	***453***	***531***	***564***	***544***	***509***
Gender						
Female	142	140	205	199	176	172
Male	310	313	326	365	368	336
Race						
Black	191	171	255	253	223	219
White	252	256	260	288	291	269
Other	<10	26	16	23	30	21
Race_Gender						
Black, Female	77	73	118	112	95	95
Black, Male	114	98	137	141	128	124
White, Female	60	57	82	79	72	70
White, Male	192	199	178	209	219	199
Other, Female	<10	10	<10	<10	<10	<10
Other, Male	<10	16	11	15	21	13
Other Demographics						
1. Economically Disadvantaged	103	112	173	209	186	157
2. Children with Disabilities	14	18	26	27	30	23
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	<10	<10	<10	<10	<10	<10
Ecosystem of School						
Ecosystem 1	36	39	37	35	31	36
Ecosystem 2	60	60	60	71	82	67
Ecosystem 3	20	22	26	30	29	25
Ecosystem 4	53	53	57	41	58	52
Ecosystem 5	70	48	91	89	83	76
Ecosystem 6	57	85	81	78	72	75
Ecosystem 7	27	19	31	51	42	34
Ecosystem 8	129	127	148	169	147	144
WIOA Region of School						
Delta	38	38	41	50	41	42
MS Partnership	131	136	139	127	159	138
South Central	97	67	122	140	125	110
Twin Districts	186	212	229	247	219	219
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	49	54	50	50	44	49
2. Architecture and Construction	28	28	25	43	33	31
3. Arts, A/V Technology, and Communications	<10	<10	<10	<10	<10	<10
4. Business, Marketing, and Finance	52	44	54	69	45	53
5. Education and Training	<10	<10	<10	<10	<10	<10

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
6. Health Science	26	19	25	27	24	24
7. Hospitality and Tourism	88	109	137	123	123	116
8. Human Services	<10	11	13	21	18	14
9. Information Technology	<10	<10	<10	<10	<10	<10
10. Law, Public Safety, Corrections, and Security	<10	11	15	16	20	14
11. Manufacturing	41	62	70	84	79	67
12. Science, Technology, Engineering, and Mathematics	32	16	20	26	26	24
13. Transportation, Distribution, and Logistics	119	102	124	102	129	115
14. CTE Dual Credit Multi-Category	-	-	-	-	-	-

A1.2.32 Receipt of Public Assistance for K-12 CTE Participants; Number of K-12 CTE Participants Receive Public Assistance Benefits within One Year of Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***1,130***	***1,436***	***1,762***	***1,274***	***1,214***	***1,363***
Gender						
Female	529	688	875	639	594	665
Male	601	748	887	635	620	698
Race						
Black	830	950	1,317	1,004	945	1,009
White	268	429	391	227	224	308
Other	32	57	54	43	45	46
Race_Gender						
Black, Female	408	469	683	522	464	509
Black, Male	422	481	634	482	481	500
White, Female	106	186	164	101	105	132
White, Male	162	243	227	126	119	175
Other, Female	15	33	28	16	25	23
Other, Male	17	24	26	27	20	23
Other Demographics						
1. Economically Disadvantaged	296	432	652	548	510	488
2. Children with Disabilities	24	57	79	93	71	65
3. English learner	<10	10	<10	<10	13	<10
4. Homeless	18	21	36	22	17	23
Ecosystem of School						
Ecosystem 1	92	112	148	99	72	105
Ecosystem 2	86	168	190	96	89	126
Ecosystem 3	141	157	182	182	194	171
Ecosystem 4	126	180	219	143	154	164
Ecosystem 5	176	197	309	232	266	236
Ecosystem 6	156	193	239	165	135	178
Ecosystem 7	111	136	163	147	122	136
Ecosystem 8	242	293	312	210	182	248
WIOA Region of School						
Delta	215	236	286	261	245	249
MS Partnership	230	381	453	259	264	317
South Central	287	333	472	379	388	372
Twin Districts	398	486	551	375	317	425
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	179	218	278	206	159	208
2. Architecture and Construction	159	207	243	158	156	185
3. Arts, A/V Technology, and Communications	37	57	74	71	68	61
4. Business, Marketing, and Finance	210	169	201	133	107	164
5. Education and Training	56	86	100	90	79	82
6. Health Science	122	157	220	151	155	161
7. Hospitality and Tourism	81	132	169	100	111	119

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
8. Human Services	81	100	156	97	150	117
9. Information Technology	14	23	18	35	24	23
10. Law, Public Safety, Corrections, and Security	41	91	102	87	81	80
11. Manufacturing	98	145	177	128	147	139
12. Science, Technology, Engineering, and Mathematics	57	85	85	61	70	72
13. Transportation, Distribution, and Logistics	151	162	177	106	91	137
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10
Public Assistance						
SNAP	1,118	1,018	1,279	1,244	1,185	1,169
TANF	21	14	11	10	<10	12
UI	15	667	781	48	44	311

A1.2.33 Receipt of Public Assistance for K-12 CTE Concentrators; Number of K-12 CTE Concentrators who Receive Public Assistance Benefits within One Year of Graduation

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
Total	***689***	***885***	***1,034***	***767***	***734***	***822***
Gender						
Female	324	413	519	394	356	401
Male	365	472	515	373	378	421
Race						
Black	489	567	754	599	565	595
White	178	280	248	151	141	200
Other	22	38	32	17	28	27
Race_Gender						
Black, Female	243	281	402	323	279	306
Black, Male	246	286	352	276	286	289
White, Female	71	112	100	68	64	83
White, Male	107	168	148	83	77	117
Other, Female	10	20	17	<10	13	13
Other, Male	12	18	15	14	15	15
Other Demographics						
1. Economically Disadvantaged	180	262	393	330	311	295
2. Children with Disabilities	13	31	39	61	39	37
3. English learner	<10	<10	<10	<10	<10	<10
4. Homeless	12	12	19	14	<10	13
Ecosystem of School						
Ecosystem 1	48	66	65	58	34	54
Ecosystem 2	56	98	92	57	49	70
Ecosystem 3	85	104	122	124	123	112
Ecosystem 4	81	97	113	66	86	89
Ecosystem 5	101	116	201	152	184	151
Ecosystem 6	78	127	132	81	69	97
Ecosystem 7	74	75	96	96	74	83
Ecosystem 8	166	202	213	133	115	166
WIOA Region of School						
Delta	128	154	168	174	149	155
MS Partnership	142	211	224	131	143	170
South Central	175	191	297	248	258	234
Twin Districts	244	329	345	214	184	263
Data after this point will not sum to total row due to students enrolling in multiple programs						
CTE Clusters						
1. Agriculture, Food, and Natural Resources	86	115	105	84	67	91
2. Architecture and Construction	103	120	147	94	90	111
3. Arts, A/V Technology, and Communications	20	33	36	41	35	33
4. Business, Marketing, and Finance	95	83	106	71	51	81
5. Education and Training	32	53	67	59	46	51
6. Health Science	74	88	122	92	85	92
7. Hospitality and Tourism	46	81	85	56	54	64

	AY2018	AY2019	AY2020	AY2021	AY2022	Average
8. Human Services	59	72	103	70	114	84
9. Information Technology	<10	15	10	12	<10	10
10. Law, Public Safety, Corrections, and Security	20	38	48	45	42	39
11. Manufacturing	59	95	104	71	85	83
12. Science, Technology, Engineering, and Mathematics	32	30	33	27	19	28
13. Transportation, Distribution, and Logistics	85	88	90	59	58	76
14. CTE Dual Credit Multi-Category	-	-	-	-	<10	<10
Public Assistance						
SNAP	685	620	749	749	716	704
TANF	15	11	<10	<10	<10	<10
UI	<10	411	466	32	29	189

Appendix 2: Sensitivity Analysis

Sensitivity analysis measures the extent to which a model's outputs are affected by hypothetical changes in the background data and assumptions. This is especially important when those variables are inherently uncertain. This analysis allows us to identify a plausible range of potential results that would occur if the value of any of the variables is in fact different from what was expected. In this section we test the sensitivity of the model to the following input factors: 1) the discount rate and 2) the attribution factors.

A2.1 Sensitivity of the Dampening Factor, Or Attribution

The attribution factors is one of the most difficult assumptions to calculate. The attribution factor determines how much of the increased earnings participants experience after exiting a program can be attributed to Mississippi CTE programs. There are other factors beyond the service offered by the organization that may lead to a participants' increased earnings or new jobs. For example, participants receiving training may attend a program to improve their welding capabilities but may in fact be offered a job regardless of completion due to soft connections and skills unrelated to the program. To address this, an attribution factor is applied to dampen results. However, because it is uncertain how much of their increased earnings is attributable to the organization, a sensitivity analysis is conducted around each of the attribution factors.

In this study, we assume a 90% attribution rate.[12] We vary the attribution rates for participants, on either side by increasing the attribution rate (Dampening) by 10%, 25%, and 50%, and then reducing it by 10%, 25%, and 50%.

Table A9.1: Sensitivity Analysis of Dampening Factor, Or Attribution

Region-Program	% Assumption Variation	-50.0%	-25.0%	-10.0%	Base Case	10.0%	25.0%	50.0%
	Dampening	45.0%	67.5%	81.0%	90.0%	99.0%	112.5%	135.0%
E1 Associate Applied Science	PV of benefits (millions)	$1.7	$1.5	$2.0	$11.0	$2.6	$3.1	$3.9
	NPV (millions)	-$3.2	-$3.4	-$2.9	$6.1	-$2.3	-$1.8	-$1.0
	B/C	0.3	0.3	0.4	2.3	0.5	0.6	0.8
E1 Career/ Tech. Cert.	PV of benefits (millions)	$0.3	$0.2	$0.3	$1.8	$0.4	$0.5	$0.7
	NPV (millions)	-$0.6	-$0.6	-$0.5	$0.9	-$0.4	-$0.3	-$0.2
	B/C	0.3	0.3	0.4	2.1	0.5	0.6	0.8
E2 Associate Applied Science	PV of benefits (millions)	$7.5	$7.7	$9.9	$48.0	$12.8	$15.0	$18.7
	NPV (millions)	-$9.5	-$9.3	-$7.1	$31.0	-$4.1	-$1.9	$1.7
	B/C	0.4	0.5	0.6	2.8	0.8	0.9	1.1
E2 Career/ Tech. Cert.	PV of benefits (millions)	$1.5	$2.0	$2.4	$8.9	$2.4	$2.0	$2.6
	NPV (millions)	-$4.7	-$4.1	-$3.8	$2.7	-$3.8	-$4.2	-$3.5
	B/C	0.2	0.3	0.4	1.4	0.4	0.3	0.4

[12] These values are based on the baseline forecasts for the 10-year Treasury rate published by the Congressional Budget Office and the real treasury interest rates recommended by the Office of Management and Budget for 10-year investments. See the Congressional Budget Office "Table 4. Projection of Borrower Interest Rates: CBO's June 2017 Baseline" and the Office of Management and Budget "Circular A-94 Appendix C."

Region-Program	% Assumption Variation	-50.0%	-25.0%	-10.0%	Base Case	10.0%	25.0%	50.0%
	Dampening	45.0%	67.5%	81.0%	90.0%	99.0%	112.5%	135.0%
E3 Associate Applied Science	PV of benefits (millions)	$0.8	$1.3	$1.7	$7.2	$2.1	$2.4	$3.0
	NPV (millions)	-$3.2	-$2.6	-$2.3	$3.2	-$1.9	-$1.5	-$1.0
	B/C	0.2	0.3	0.4	1.8	0.5	0.6	0.8
E3 Career/ Tech. Cert.	PV of benefits (millions)	$0.4	$0.5	$0.6	$2.3	$0.7	$0.6	$0.6
	NPV (millions)	-$3.7	-$3.6	-$3.5	-$1.8	-$3.4	-$3.5	-$3.5
	B/C	0.1	0.1	0.2	0.6	0.2	0.2	0.2
E4 Associate Applied Science	PV of benefits (millions)	$7.7	$13.8	$17.4	$78.3	$22.2	$25.8	$31.9
	NPV (millions)	-$7.9	-$1.9	$1.7	$62.7	$6.6	$10.2	$16.2
	B/C	0.5	0.9	1.1	5.0	1.4	1.7	2.0
E4 Career/ Tech. Cert.	PV of benefits (millions)	$1.5	$2.1	$2.4	$9.2	$1.8	$2.3	$3.0
	NPV (millions)	-$2.4	-$1.9	-$1.5	$5.3	-$2.1	-$1.7	-$1.0
	B/C	0.4	0.5	0.6	2.3	0.5	0.6	0.7
E5 Associate Applied Science	PV of benefits (millions)	$11.1	$11.7	$15.0	$70.8	$19.3	$22.6	$28.0
	NPV (millions)	$1.5	$2.1	$5.3	$61.2	$9.6	$12.9	$18.3
	B/C	1.2	1.2	1.6	7.3	2.0	2.3	2.9
E5 Career/ Tech. Cert.	PV of benefits (millions)	$1.4	$1.8	$2.0	$7.1	$2.4	$2.6	$2.4
	NPV (millions)	-$1.2	-$0.8	-$0.6	$4.5	-$0.2	$0.0	-$0.1
	B/C	0.5	0.7	0.8	2.7	0.9	1.0	0.9
E6 Associate Applied Science	PV of benefits (millions)	$6.2	$8.8	$11.2	$52.2	$14.4	$16.8	$20.9
	NPV (millions)	-$10.6	-$8.0	-$5.6	$35.3	-$2.4	$0.0	$4.0
	B/C	0.4	0.5	0.7	3.1	0.9	1.0	1.2
E6 Career/ Tech. Cert.	PV of benefits (millions)	$2.2	$2.9	$2.3	$13.7	$3.1	$3.7	$4.8
	NPV (millions)	-$4.9	-$4.2	-$4.9	$6.6	-$4.0	-$3.4	-$2.3
	B/C	0.3	0.4	0.3	1.9	0.4	0.5	0.7
E7 Associate Applied Science	PV of benefits (millions)	$2.6	$3.9	$5.0	$22.9	$6.4	$7.4	$9.2
	NPV (millions)	-$4.1	-$2.8	-$1.7	$16.2	-$0.3	$0.7	$2.5
	B/C	0.4	0.6	0.7	3.4	1.0	1.1	1.4
E7 Career/ Tech. Cert.	PV of benefits (millions)	$1.4	$1.5	$2.0	$9.7	$2.6	$3.0	$3.8
	NPV (millions)	-$1.8	-$1.7	-$1.3	$6.5	-$0.7	-$0.2	$0.5
	B/C	0.4	0.5	0.6	3.0	0.8	0.9	1.2
E8 Associate Applied Science	PV of benefits (millions)	$12.2	$12.7	$16.2	$77.9	$21.0	$24.6	$30.6
	NPV (millions)	-$15.5	-$15.0	-$11.4	$50.3	-$6.6	-$3.0	$3.0
	B/C	0.4	0.5	0.6	2.8	0.8	0.9	1.1
E8 Career/ Tech. Cert.	PV of benefits (millions)	$2.6	$3.5	$3.1	$15.7	$3.4	$4.1	$5.3
	NPV (millions)	-$6.2	-$5.2	-$5.6	$6.9	-$5.4	-$4.7	-$3.5
	B/C	0.3	0.4	0.4	1.8	0.4	0.5	0.6
All MS K-12 CTE	PV of benefits (millions)	$12.6	$16.2	$18.4	$66.3	$21.3	$23.5	$27.1
	NPV (millions)	-$93.2	-$89.6	-$87.4	-$39.6	-$84.5	-$82.4	-$78.7
	B/C	0.1	0.2	0.2	0.6	0.2	0.2	0.3

Source: Lightcast Impact Model

As demonstrated in Table A9.1, an increase in the attribution rate leads to a corresponding decrease in the expected returns, and vice versa.

Appendix 3: Glossary of Terms

Alternative use of funds	A measure of how monies that are currently used to fund the organization might otherwise have been used if the organization did not exist.
Asset value	Capitalized value of a stream of future returns. Asset value measures what someone would have to pay today for an instrument that provides the same stream of future revenues.
Attrition rate	Rate at which participants leave the workforce due to out-migration, unemployment, retirement, or death.
Benefit-cost ratio	Present value of benefits divided by present value of costs. If the benefit-cost ratio is greater than 1, then benefits exceed costs, and the investment is feasible.
Discounting	Expressing future revenues and costs in present value terms.
Earnings (labor income)	Income that is received as a result of labor; i.e., wages.
Economics	Study of the allocation of scarce resources among alternative and competing ends. Economics is not normative (what ought to be done), but positive (describes what is, or how people are likely to behave in response to economic changes).
Externalities	Impacts (positive and negative) for which there is no compensation. Positive externalities of training include improved social behaviors such as lower crime, reduced welfare and unemployment, and improved health. Educational institutions do not receive compensation for these benefits, but benefits still occur because training is statistically proven to lead to improved social behaviors.
Gross Regional Product	Measure of the final value of all goods and services produced in a region after netting out the cost of goods used in production. Alternatively, Gross Regional Product (GRP) equals the combined incomes of all factors of production; i.e., labor, land and capital. These include wages, salaries, proprietors' incomes, profits, rents, and other. GRP is also sometimes called value added or added income.
Initial effect	Income generated by the initial injection of monies into the economy through the payroll of AccelerateMS.
Input-output analysis	Relationship between a given set of demands for final goods and services and the implied amounts of manufactured inputs, raw

	materials, and labor that this requires. When institutions pay wages and salaries and spend money for supplies in the region, they also generate earnings in all sectors of the economy, thereby increasing the demand for goods and services and jobs.
Multiplier effect	Additional income created in the economy as AccelerateMS spends money in the region. It consists of the income created by the supply chain of the industries initially affected by the spending of AccelerateMS (i.e., the direct effect), income created by the supply chain of the initial supply chain (i.e., the indirect effect), and the income created by the increased spending of the household sector (i.e., the induced effect).
NAICS	The North American Industry Classification System (NAICS) classifies North American business establishment in order to better collect, analyze, and publish statistical data related to the business economy.
Net cash flow	Benefits minus costs, i.e., the sum of revenues accruing from an investment minus costs incurred.
Net present value	Net cash flow discounted to the present. All future cash flows are collapsed into one number, which, if positive, indicates feasibility. The result is expressed as a monetary measure.
Non-labor income	Income received from investments, such as rent, interest, and dividends.
Opportunity cost	Benefits Mississippi from alternative B once a decision is made to allocate resources to alternative A. Or, if individuals choose to attend college, they forego earnings that they would have received had they chose instead to work full-time. Mississippi earnings, therefore, are the “price tag” of choosing to attend college.

Appendix 4: Example of Sales versus Income

Lightcast's economic impact study differs from many other studies because we prefer to report the impacts in terms of income rather than sales (or output). Income is synonymous with value added Gross Regional Product (GRP). Sales include all the intermediary costs associated with producing goods and services. Income is a net measure that excludes these intermediary costs:

$$Income = Sales - Intermediary\ Costs$$

For this reason, income is a more meaningful measure of new economic activity than reporting sales. This is evidenced by the use of gross domestic product (GDP) – a measure of income – by economists when considering the economic growth or size of a country. The difference is GRP reflects a region and GDP a country.

To demonstrate the difference between income and sales, let us consider an example of a baker's production of a loaf of bread. The baker buys the ingredients such as eggs, flour, and yeast for $2.00. He uses capital such as a mixer to combine the ingredients and an oven to bake the bread and convert it into a final product. Overhead costs for these steps are $1.00. Total intermediary costs are $3.00. The baker then sells the loaf of bread for $5.00.

The sales amount of the loaf of bread is $5.00. The income from the loaf of bread is equal to the sales amount less the intermediary costs:

$$Income = \$5.00 - \$3.00 = \$2.00$$

In our analysis, we provide context behind the income figures by also reporting the associated number of jobs. The impacts are also reported in sales and earnings terms for reference.

Appendix 5: Lightcast MR-SAM

Lightcast's MR-SAM represents the flow of all economic transactions in a given region. It replaces Lightcast's previous input-output (IO) model, which operated with some 1,000 industries, four layers of government, a single household consumption sector, and an investment sector. The old IO model was used to simulate the ripple effects (*i.e.*, multipliers) in the regional economy as a result of industries entering or exiting the region. The MR-SAM model performs the same tasks as the old IO model, but it also does much more. Along with the same 1,000 industries, government, household and investment sectors embedded in the old IO tool, the MR-SAM exhibits much more functionality, a greater amount of data, and a higher level of detail on the demographic and occupational components of jobs (16 demographic cohorts and about 750 occupations are characterized).

This appendix presents a high-level overview of the MR-SAM. Additional documentation on the technical aspects of the model is available upon request.

A5.1 Data sources for the model

The Lightcast MR-SAM model relies on a number of internal and external data sources, mostly compiled by the federal government. What follows is a listing and short explanation of our sources. The use of these data will be covered in more detail later in this appendix.

Lightcast Data are produced from many data sources to produce detailed industry, occupation, and demographic jobs and earnings data at the local level. This information (especially sales-to-jobs ratios derived from jobs and earnings-to-sales ratios) is used to help regionalize the national matrices as well as to disaggregate them into more detailed industries than are normally available.

BEA Make and Use Tables (MUT) are the basis for input-output models in the U.S. The *make* table is a matrix that describes the amount of each commodity made by each industry in a given year. Industries are placed in the rows and commodities in the columns. The *use* table is a matrix that describes the amount of each commodity used by each industry in a given year. In the use table, commodities are placed in the rows and industries in the columns. The BEA produces two different sets of MUTs, the benchmark and the summary. The benchmark set contains about 500 sectors and is released every five years, with a five-year lag time (e.g., 2002 benchmark MUTs were released in 2007). The summary set contains about 80 sectors and is released every year, with a two-year lag (e.g., 2010 summary MUTs were released in late 2011/early 2012). The MUTs are used in the Lightcast MR-SAM model to produce an industry-by-industry matrix describing all industry purchases from all industries.

BEA Gross Domestic Product by State (GSP) describes gross domestic product from the value added (also known as added income) perspective. Value added is equal to employee compensation, gross operating surplus, and taxes on production and imports, less subsidies. Each of these components is reported for each state and an aggregate group of industries.

This dataset is updated once per year, with a one-year lag. The Lightcast MR-SAM model makes use of this data as a control and pegs certain pieces of the model to values from this dataset.

BEA National Income and Product Accounts (NIPA) cover a wide variety of economic measures for the nation, including gross domestic product (GDP), sources of output, and distribution of income. This dataset is updated periodically throughout the year and can be between a month and several years old depending on the specific account. NIPA data are used in many of the Lightcast MR-SAM processes as both controls and seeds.

BEA Local Area Income (LPI) encapsulates multiple tables with geographies down to the county level. The following two tables are specifically used: CA05 (Personal income and earnings by industry) and CA91 (Gross flow of earnings). CA91 is used when creating the commuting submodel and CA05 is used in several processes to help with place-of-work and place-of-residence differences, as well as to calculate personal income, transfers, dividends, interest, and rent.

Bureau of Labor Statistics Consumer Expenditure Survey (CEX) reports on the buying habits of consumers along with some information as to their income, consumer unit, and demographics. Lightcast utilizes this data heavily in the creation of the national demographic by income type consumption on industries.

Census of Government's (CoG) state and local government finance dataset is used specifically to aid breaking out state and local data that is reported in the MUTs. This allows Lightcast to have unique production functions for each of its state and local government sectors.

Census' OnTheMap (OTM) is a collection of three datasets for the census block level for multiple years. **Origin-Destination** (OD) offers job totals associated with both home census blocks and a work census block. **Residence Area Characteristics** (RAC) offers jobs totaled by home census block. **Workplace Area Characteristics** (WAC) offers jobs totaled by work census block. All three of these are used in the commuting submodel to gain better estimates of earnings by industry that may be counted as commuting. This dataset has holes for specific years and regions. These holes are filled with Census' Journey-to-Work described later.

Census' Current Population Survey (CPS) is used as the basis for the demographic breakout data of the MR-SAM model. This set is used to estimate the ratios of demographic cohorts and their income for the three different income categories (i.e., wages, property income, and transfers).

Census' Journey-to-Work (JtW) is part of the 2000 Census and describes the amount of commuting jobs between counties. This set is used to fill in the areas where OTM does not have data.

Census' American Community Survey (ACS) **Public Use Microdata Sample** (PUMS) is the replacement for Census' long form and is used by Lightcast to fill the holes in the CPS data.

Oak Ridge National Lab (ORNL) County-to-County Distance Matrix (Skim Tree) contains a matrix of distances and network impedances between each county via various modes of transportation such as highway, railroad, water, and combined highway-rail. Also included in this set are minimum impedances utilizing the best combination of paths. The ORNL distance matrix is used in Lightcast's gravitational flows model that estimates the amount of trade between counties in the country.

A5.2 Overview of the MR-SAM model

Lightcast's MR-SAM modeling system is a comparative static model in the same general class as RIMS II (Bureau of Economic Analysis) and IMPLAN (Minnesota Implan Group). The MR-SAM model is thus not an econometric model, the primary example of which is PolicyInsight by REMI. It relies on a matrix representation of industry-to-industry purchasing patterns originally based on national data which are regionalized with the use of local data and mathematical manipulation (i.e., non-survey methods). Models of this type estimate the ripple effects of changes in jobs, earnings, or sales in one or more industries upon other industries in a region.

The Lightcast MR-SAM model shows final equilibrium impacts – that is, the user enters a change that perturbs the economy and the model shows the changes required to establish a new equilibrium. As such, it is not a dynamic model that shows year-by-year changes over time (as REMI's does).

A5.2.1 National SAM

Following standard practice, the SAM model appears as a square matrix, with each row sum exactly equaling the corresponding column sum. Reflecting its kinship with the standard Leontief input-output framework, individual SAM elements show accounting flows between row and column sectors during a chosen base year. Read across rows, SAM entries show the flow of funds into column accounts (also known as receipts or the appropriation of funds by those column accounts). Read down columns, SAM entries show the flow of funds into row accounts (also known as expenditures or the dispersal of funds to those row accounts).

The SAM may be broken into three different aggregation layers: broad accounts, sub-accounts, and detailed accounts. The broad layer is the most aggregate and will be covered first. Broad accounts cover between one and four sub-accounts, which in turn cover many detailed accounts. This appendix will not discuss detailed accounts directly because of their number. For example, in the industry broad account, there are two sub-accounts and over 1,000 detailed accounts.

A5.2.2 Multi-regional aspect of the MR-SAM

Multi-regional (MR) describes a non-survey model that has the ability to analyze the transactions and ripple effects (i.e., multipliers) of not just a single region, but multiple regions interacting with each other. Regions in this case are made up of a collection of counties.

Lightcast's multi-regional model is built off of gravitational flows, assuming that the larger a county's economy, the more influence it will have on the surrounding counties' purchases and sales. The equation behind this model is essentially the same that Isaac Newton used to calculate the gravitational pull between planets and stars. In Newton's equation, the masses of both objects are multiplied, then divided by the distance separating them and multiplied by a constant. In Lightcast's model, the masses are replaced with the supply of a sector for one county and the demand for that same sector from another county. The distance is replaced with an impedance value that takes into account the distance, type of roads, rail lines, and other modes of transportation. Once this is calculated for every county-to-county pair, a set of mathematical operations is performed to make sure all counties absorb the correct amount of supply from every county and the correct amount of demand from every county. These operations produce more than 200 million data points.

A5.2.3 Components of the Lightcast MR-SAM model

The Lightcast MR-SAM is built from a number of different components that are gathered together to display information whenever a user selects a region. What follows is a description of each of these components and how each is created. Lightcast's internally created data are used to a great extent throughout the processes described below, but its creation is not described in this appendix.

A5.2.4 County Earnings Distribution Matrix

The county earnings distribution matrices describe the earnings spent by every industry on every occupation for a year – i.e., earnings by occupation. The matrices are built utilizing Lightcast's industry earnings, occupational average earnings, and staffing patterns.

Each matrix starts with a region's staffing pattern matrix which is multiplied by the industry jobs vector. This produces the number of occupational jobs in each industry for the region. Next, the occupational average hourly earnings per job are multiplied by 2,080 hours, which converts the average hourly earnings into a yearly estimate. Then the matrix of occupational jobs is multiplied by the occupational annual earnings per job, converting it into earnings values. Last, all earnings are adjusted to match the known industry totals. This is a fairly simple process, but one that is very important. These matrices describe the place-of-work earnings used by the MR-SAM.

A5.2.5 Commuting Model

The commuting sub-model is an integral part of Lightcast's MR-SAM model. It allows the regional and multi-regional models to know what amount of the earnings can be attributed to place-of-residence vs. place-of-work. The commuting data describe the flow of earnings from any county to any other county (including within the counties themselves). For this situation, the commuted earnings are not just a single value describing total earnings flows over a complete year, but are broken out by occupation and demographic. Breaking out the earnings

allows for analysis of place-of-residence and place-of-work earnings. These data are created using Bureau of Labor Statistics' OnTheMap dataset, Census' Journey-to-Work, BEA's LPI CA91 and CA05 tables, and some of Lightcast's data. The process incorporates the cleanup and disaggregation of the OnTheMap data, the estimation of a closed system of county inflows and outflows of earnings, and the creation of finalized commuting data.

A5.2.6 National SAM

The national SAM as described above is made up of several different components. Many of the elements discussed are filled in with values from the national Z matrix – or industry-to-industry transaction matrix. This matrix is built from BEA data that describe which industries make and use what commodities at the national level. These data are manipulated with some industry standard equations to produce the national Z matrix. The data in the Z matrix act as the basis for the majority of the data in the national SAM. The rest of the values are filled in with data from the county earnings distribution matrices, the commuting data, and the BEA's National Income and Product Accounts.

One of the major issues that affect any SAM project is the combination of data from multiple sources that may not be consistent with one another. Matrix balancing is the broad name for the techniques used to correct this problem. Lightcast uses a modification of the "diagonal similarity scaling" algorithm to balance the national SAM.

A5.2.7 Gravitational Flows Model

The most important piece of the Lightcast MR-SAM model is the gravitational flows model that produces county-by-county regional purchasing coefficients (RPCs). RPCs estimate how much an industry purchases from other industries inside and outside of the defined region. This information is critical for calculating all IO models.

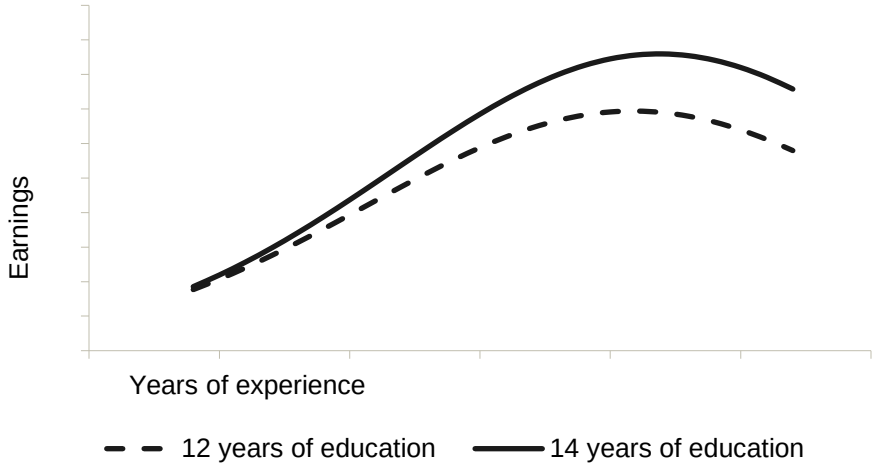
Gravity modeling starts with the creation of an impedance matrix that values the difficulty of moving a product from county to county. For each sector, an impedance matrix is created based on a set of distance impedance methods for that sector. A distance impedance method is one of the measurements reported in the Oak Ridge National Laboratory's County-to-County Distance Matrix. In this matrix, every county-to-county relationship is accounted for in six measures: great-circle distance, highway impedance, rail miles, rail impedance, water impedance, and highway-rail-highway impedance. Next, using the impedance information, the trade flows for each industry in every county are solved for. The result is an estimate of multi-regional flows from every county to every county. These flows are divided by each respective county's demand to produce multi-regional RPCs.

Appendix 6: The Mincer Function

Human capital theory holds that earnings levels do not remain constant; rather, they start relatively low and gradually increase as the worker gains more experience. Research also shows that the earnings increment between educated and non-educated workers grows through time. These basic patterns in earnings over time were originally identified by Jacob Mincer, who viewed the lifecycle earnings distribution as a function with the key elements being earnings, years of training, and work experience, with age serving as a proxy for experience.[13] While some have criticized Mincer's earnings function, it is still upheld in recent data and has served as the foundation for a variety of research pertaining to labor economics. Those critical of the Mincer function point to several unobserved factors such as ability, socioeconomic status, and family background that also help explain higher earnings. Failure to account for these factors results in what is known as an "ability bias." Research by Card (1999 and 2001) suggests that the benefits estimated using Mincer's function are biased upwards by 10% or less. As such, we reduce the estimated benefits by 10%. We use state-specific and education-level-specific Mincer coefficients.

Figure A4.1 illustrates several important points about the Mincer function. First, as demonstrated by the shape of the curves, an individual's earnings initially increase at an increasing rate, then increase at a decreasing rate, reach a maximum somewhere well after the midpoint of the working career, and then decline in later years. Second, individuals with higher levels of training reach their maximum earnings at an older age compared to individuals with lower levels of training (recall that age serves as a proxy for years of experience). And third, the benefits of training, as measured by the difference in earnings between education levels, increase with age.

Figure A6.1: Lifecycle change in earnings, 12 years versus 14 years of training



[13] See Mincer (1958 and 1974).