# RURAL GRADUATE RETENTION AND STATE WORKFORCE CONTRIBUTIONS IN SOUTH CAROLINA

*Findings from Postsecondary Employment Outcomes (PSEO) Data*

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## Executive Summary

This analysis uses Postsecondary Employment Outcomes (PSEO) data to examine how graduates of rural- and urban-serving institutions in South Carolina differ in their earnings, employment locations, and contributions to the state's workforce. By comparing outcomes for associate and bachelor's degree graduates, the analysis highlights how the urbanicity of where students study shapes both individual economic trajectories and the extent to which graduates remain employed in South Carolina.

### *Key Findings*

- **Urban graduates' typically earn more**: Across disciplines, graduates of urban institutions in South Carolina earn more than graduates of rural institutions. Ten years after completing, bachelor's degree graduates of urban institutions earn approximately $62,200, compared with $55,000 for their peers from rural institutions. The gap is even larger among associate degree holders, with graduates of urban institutions earning about $55,600 ten years after graduation, compared to $46,900 for graduates of rural institutions. Overall earnings differences may be influenced by variation in the types of disciplines offered and degrees earned at urban and rural institutions.
- **Rural graduates are more likely to work in South Carolina:** Graduates from rural institutions, with both associate and bachelor's degrees, are more likely than graduates from rural institutions to remain employed in South Carolina after graduation. Ten years after completing, 58 percent of bachelor's degree graduates from rural institutions (n=19,166) are working in the state, compared with 51 percent of their peers from urban institutions (n=68,186). Associate degree graduates have higher in-state employment rates than bachelor's degree graduates across all time points, with associate degree graduates from rural institutions showing the strongest retention overall.

- **Industry of employment varies by geography:** Graduates of rural institutions, at both associate and bachelor's degree levels, are more likely to work in education, health care, public administration, and manufacturing – sectors that play a central role in many local economies across South Carolina. Graduates from urban institutions are more likely to enter professional and technical services, although substantial shares also work in education and health care. These differences in industry pathways may help explain observed geographic differences in earnings.

## *Implications*

These findings underscore the distinct and complementary roles that rural- and urban-serving institutions play in South Carolina's workforce. Rural institutions, particularly those primarily awarding associate degrees, serve as critical anchors for the state's labor supply, retaining graduates in high-need sectors that are less likely to attract out-of-state talent. While graduates of rural institutions earn less on average, their concentration in essential industries highlights a form of public value that is not fully captured by earnings alone.

For policymakers, this analysis suggests the importance of aligning postsecondary investments with both economic returns and workforce retention goals. Strategies to strengthen South Carolina's long-term workforce may benefit from recognizing the workforce-stabilizing role of rural institutions, supporting pathways that connect rural and urban institutions, and expanding in-state employment opportunities in higher-paying sectors. These insights are directly relevant to efforts under the South Carolina Statewide Education and Workforce Development Act (Act 67)[1] to address obstacles unique to rural communities and to ensure that postsecondary education contributes to sustained economic opportunity across the state.

[1] See Chapter 30, "Employment and Workforce - Workforce Development," Article 1 General Provisions, https://www.scstatehouse.gov/sess125_2023-2024/bills/3726.htm.

## Introduction

Ensuring a strong and resilient workforce is a central priority for South Carolina's economic future, particularly as the state seeks to address persistent regional disparities and strengthen opportunities in rural communities.[2] Colleges and universities play a critical role in this effort—not only by preparing students for employment, but also by influencing where graduates live, work, and contribute over the long term. Yet discussions of postsecondary value often emphasize earnings alone, overlooking the importance of workforce retention and the distinct roles that rural- and urban-serving institutions play in sustaining the state's labor force.

This report examines how the geographic location of an institution relates to graduates' economic outcomes and workforce contributions in South Carolina. Using Postsecondary Employment Outcomes (PSEO) data, we analyze differences in earnings, in-state retention, and industry of employment for associate and bachelor's degree graduates of rural- and urban-serving institutions. In doing so, we ask a central question: ***How do graduates' earnings, industries of employment, and migration patterns differ by the geographic location of their institution?***

Exploring earnings data alongside measures of in-state employment and industry participation provides a more complete picture of the public value institutions generate by anchoring talent in the state. The findings highlight the essential role rural institutions play in supplying and retaining workers in high-need sectors such as education, health care, public administration, and manufacturing, even as their graduates earn less on average than peers from urban institutions.

Taken together, these patterns offer important insights for policymakers, state agencies, and institutional leaders working to align higher education with workforce development goals. Understanding the complementary roles and varying outcomes of rural- and urban-serving institutions can inform strategies to strengthen South Carolina's talent pipeline, support rural communities, and ensure that public investments in higher education advance both economic opportunity and long-term workforce stability.

This research report was developed in collaboration between Ithaka S+R and the PSEO Coalition, with generous funding from the Strada Education Foundation. We also thank South Carolina's PSEO partners–the Commission on Higher Education, the Department of Employment and Workforce, the Education Oversight Committee, and the University of South Carolina–for their feedback on the analyses presented here.

[2] See Chapter 30, "Employment and Workforce - Workforce Development," Article 1 General Provisions, https://www.scstatehouse.gov/sess125_2023-2024/bills/3726.htm.

## Methodology and Limitations

PSEO data contain information on graduates' earnings and migration patterns. This analysis combines these data with institutional geographic classifications from the Integrated Postsecondary Education Data System (IPEDS) to examine how urban and rural institutions uniquely contribute to South Carolina's workforce. We use IPEDS locale codes and the NCES Education Demographic and Geographic Estimates (EDGE) Locale Framework to classify institutions, where areas classified as rural, distant or remote towns are "rural" and areas classified as city, suburban, or fringe towns are "urban."

Using these classifications, we assign each institution a binary rural or urban designation and merge this indicator with South Carolina PSEO data to analyze earnings, industry, and migration patterns by institutional urbanicity. We recognize that substantial variation exists within rural regions in South Carolina and that alternative definitions of rurality are possible. A complete list of institutions by urbanicity is provided in Appendix A.[3]

In South Carolina's PSEO data, we classify 42 institutions as urban and 22 as rural. In both groups, institutions are evenly split by degree level: among urban institutions, 21 primarily award bachelor's degrees and 21 award associate degrees; among rural institutions, 11 primarily award bachelor's degrees and 11 award associate degrees.

Results are pooled across all available graduation cohorts in South Carolina's PSEO data rather than reflecting a single graduating class. Across programs, graduates completed their degrees from as early as 2001 through 2019. The specific cohort years contributing to each program's estimates may vary depending on when degrees were awarded and whether the number of graduates meets the Census Bureau's disclosure thresholds.

The PSEO data includes some outcomes at the program-level for each institution and others at the institution-level. Program-level outcomes are reported at either the two-digit CIP level or the four-digit CIP level. Two-digit CIP codes represent broad fields of study (e.g., "Engineering" or "Health Professions"), which may encompass multiple majors or degree tracks, while four-digit CIP codes provide more detailed classifications (e.g., Mechanical Engineering or Nursing). Because this analysis examines outcomes reported at different levels of granularity, we present all program-level results using two-digit CIP codes.

As a result, findings should be interpreted as reflecting general patterns across disciplines rather than specific programs or majors. Results are reported statewide and do not adjust for institutional differences or student characteristics. While South Carolina's PSEO data provides

[3] Complete data are unavailable for Southern Methodist College; accordingly, the institution is omitted from this analysis.

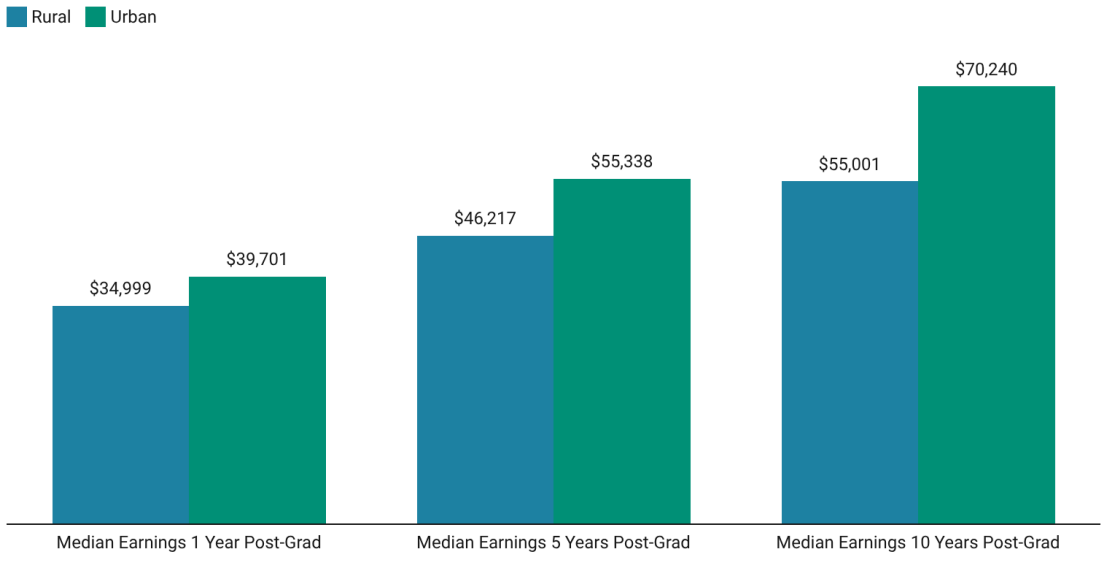
relatively broad coverage, capturing approximately 86 percent of graduates, the results are not fully representative of all graduates statewide. Further, the PSEO data provide numbers and rates of total employment and in-state employment, but not unemployment. All figures related to employment reflect the share of employed graduates and do not factor in unemployment totals or trends.

## Key Questions and Findings

### *Do earnings outcomes differ by the urbanicity of institution attended?*

At one-, five-, and 10-years post-graduation, graduates of urban institutions earn more, on average, than graduates of rural institutions with the same level of degree. Figure 1 presents median earnings for bachelor's degree graduates by institutional urbanicity, and Figure 2 presents median earnings for associate degree graduates by institutional urbanicity.

**Figure 1. Median Bachelor's Degree Earnings by Urbanicity**




*Note: Earnings weighted by number of graduates.*
*Source: U.S. Census Bureau Post-Secondary Employment Outcomes (PSEO).*

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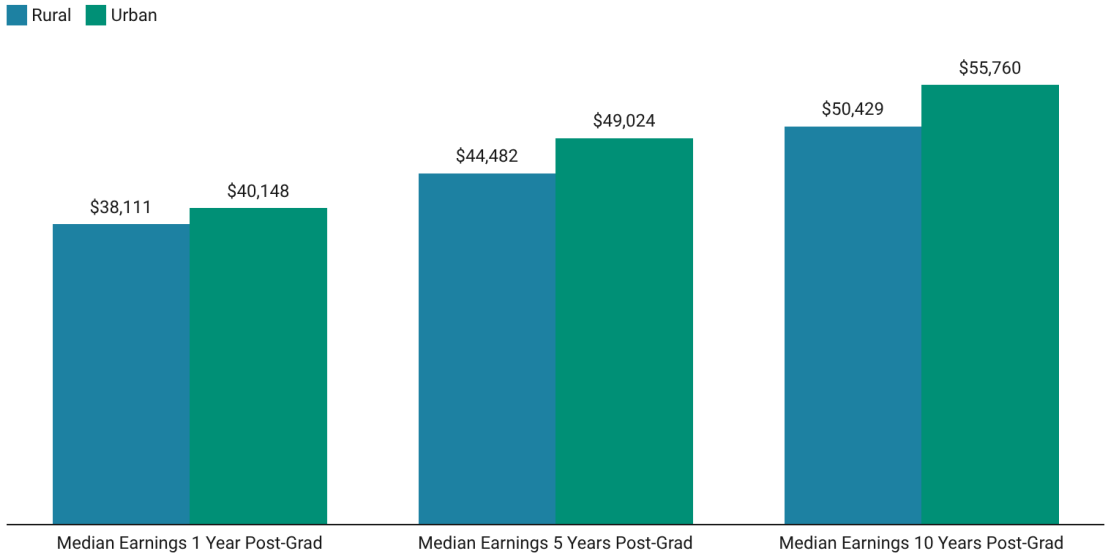
**Figure 2. Median Associate Degree Earnings by Urbanicity**




*Note: Earnings weighted by number of graduates.*
*Source: U.S. Census Bureau Post-Secondary Employment Outcomes (PSEO).*

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Across degree levels, graduates of urban institutions realize a clear annual earnings premium relative to graduates of rural institutions. Bachelor's degree graduates who attended urban institutions in South Carolina earn $4,702 more per year one-year after graduation and $15,239 per year more 10 years after graduation than their peers from rural institutions. This pattern is less pronounced for associate degree graduates: those from urban institutions earn $2,037 more annually one year after graduation and $5,331 more 10 years after graduation than their peers from rural institutions. These data also allow us to compare annual earnings differences for bachelor's and associates degree graduates within similar geographies.

Among graduates of rural institutions, associate degree graduates initially earn more than bachelor's degree graduates. One year after graduation, associate graduates earn $3,112 more than bachelor's graduates. This pattern reverses within five years and by 10 years after graduation, bachelor's graduates earn $4,572 more per year than associate graduates, an earnings premium of nearly nine percent.

Earnings differences are smaller among graduates of urban institutions early in their careers. One year after graduation, associate degree graduates earn $477 more than bachelor's degree graduates, on average. Over time, however, bachelor's graduates pull ahead substantially, earning $14,480 or 23 percent more per year by 10 years after graduation.

At one and five years after graduation, associate degree graduates from urban institutions earn more than bachelor's degree graduates from rural institutions. By ten years after graduation, earnings for these two groups converge and are broadly similar. This comparison underscores the importance of geography, program selection, and early labor market access in shaping short- and mid-term earnings, sometimes outweighing differences in degree level.

Several factors may contribute to earnings differences observed between graduates of rural and urban institutions. Graduates of urban institutions may be more likely to reside in higher wage areas and more competitive labor markets, both within South Carolina and beyond. Urban graduates, on average, may also be concentrated in fields associated with higher earnings. While PSEO data allows us to distinguish between in-state and out-of-state employment and earnings by program, they do not capture sub-state geographic variation, limiting our ability to assess how local labor markets shape outcomes. In addition, earnings outcomes vary substantially across institutions within each urbanicity category, as shown in Appendices B and C, suggesting that institutional context and program mix also play an important role.

From a policy perspective, these findings highlight the importance of taking a longer-term view when assessing economic returns to higher education. Early-career earnings alone can obscure longer-term trajectories, particularly for bachelor's degree holders, whose earnings premiums often emerge several years after graduation. At the same time, the results suggest that associate degrees, especially those earned at urban institutions, can provide strong early economic returns, and in some cases, rival bachelor's-level earnings for much of the first decade after graduation. Together, these patterns warrant closer examination of program-level outcomes, differences in fields of study, and the institutional and labor market factors that shape graduates' earnings trajectories over time.

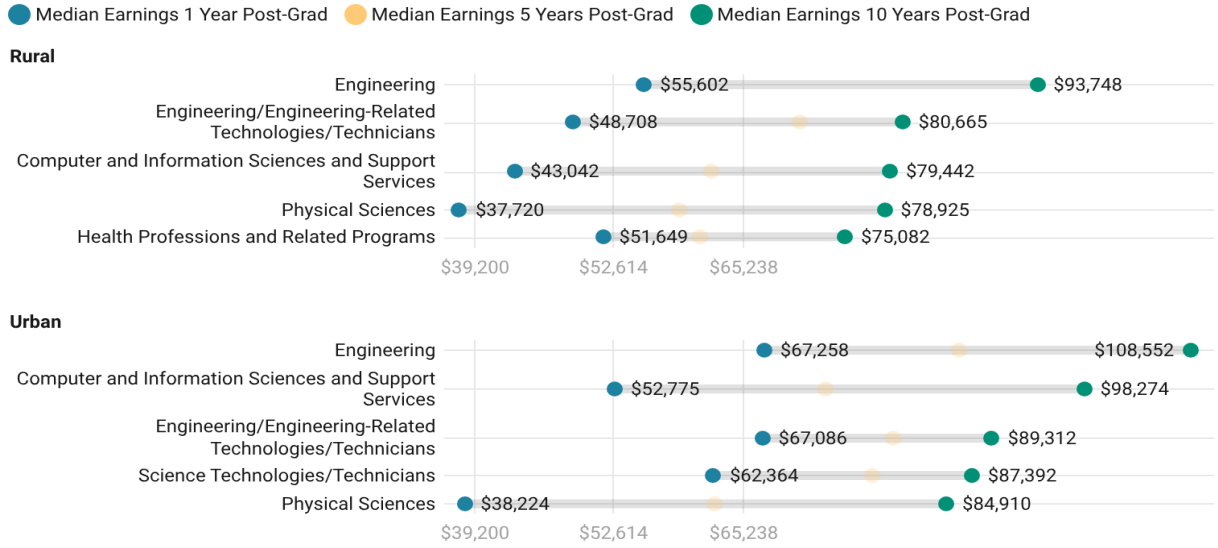
## *Do earnings by program of study[4] differ for graduates from rural and urban institutions?*

When it comes to the highest earning programs, slight differences emerge between graduates from rural and urban institutions. Table 1 presents the top five highest paying bachelor's degrees for students who attended rural and urban institutions, sorted by 10-year earnings and geography. Table 2 displays the same information for the top five highest paying associate

[4] PSEO program-level analyses rely on two-digit CIP codes, which represent broad academic disciplines. These categories may encompass multiple specific majors or subfields. For example, Multi/Interdisciplinary Studies includes programs as varied as Historic Preservation, Neuroscience, and Mathematics and Computer Science. These internal differences are not visible in the public PSEO data, which limits conclusions about individual majors.

degrees for rural and urban institutions. Missing data appear as dashes, but do not impact the rankings.

## Figure 3. Median Earnings for Top Bachelor's Degrees by Urbanicity




*Note: Median South Carolina bachelor's weighted degree earnings at one-, five-, and 10-years marked on chart.*
*Source: U.S. Census Bureau Post-Secondary Employment Outcomes (PSEO).*

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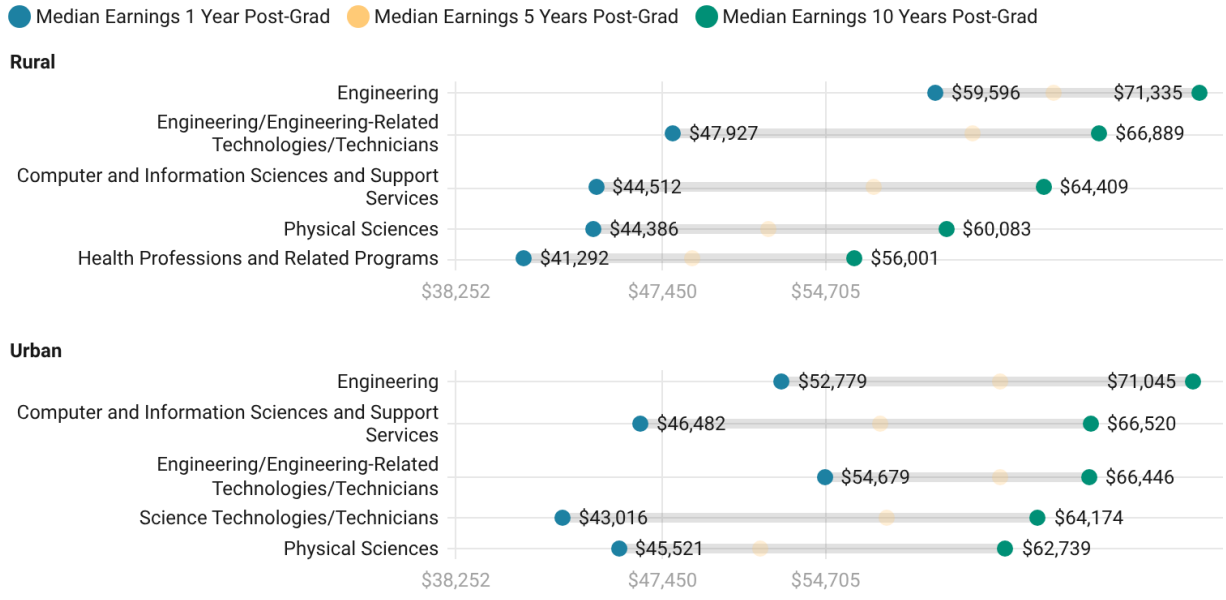
## Figure 4. Median Earnings for Top Associate Degrees by Urbanicity




*Note: Median South Carolina bachelor's weighted degree earnings at one-, five-, and 10-years marked on chart.*
*Source: U.S. Census Bureau Post-Secondary Employment Outcomes (PSEO).*

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For bachelor's degrees, the highest earning fields are largely consistent across rural and urban institutions. Engineering, Computer and Information Sciences, and Physical Sciences all rank among the top five programs for earnings, regardless of institutional location. A similar pattern appears among associate degree graduates, where Engineering, Health Professions, and Mechanic and Repair Technologies consistently emerge as top-earning programs for both rural and urban graduates.

Despite these similarities, the tables reveal substantial earnings differences by institutional urbanicity. Engineering is the top-paying bachelor's-level field for both urban and rural graduates, but urban graduates earn nearly $12,000 more per year than rural graduates one year after graduation and nearly $15,000 more per year 10 years later, indicating an early earnings advantage that persists over time. In other fields, like Physical Sciences, earnings differences are smaller early on but widen as graduates' careers progress.

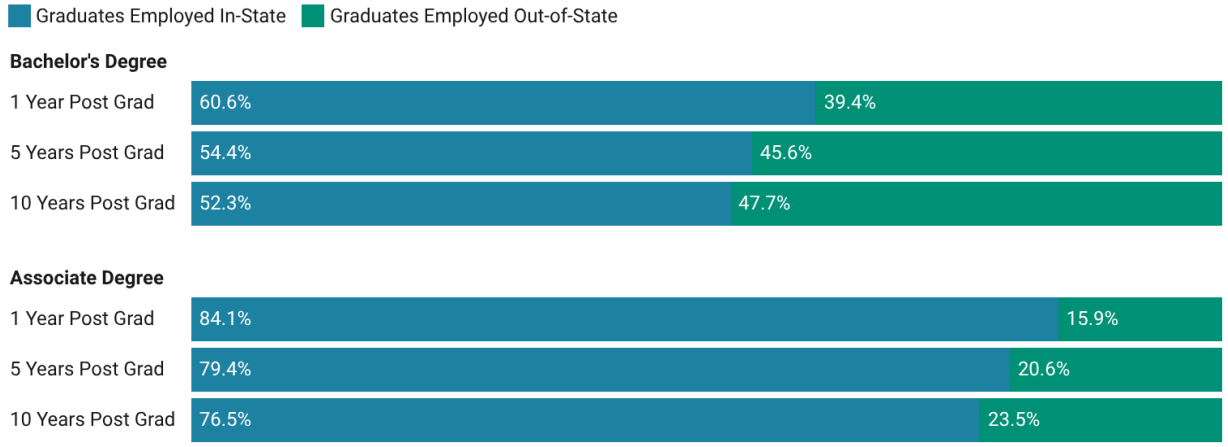
At the associate degree level, outcomes are more mixed. In some fields, rural graduates earn as much as, or more than, their urban counterparts. For example, rural associate degree graduates in the Health Professions earn nearly $5,000 more per year than urban graduates both one and 10 years after graduation, potentially reflecting strong regional demand and investments in rural health care infrastructure. In contrast, other fields such as Engineering-Related Technologies, show little differences in earnings by institutional location.

Taken together, these findings highlight how institutional urbanicity interacts with students' field of study and level of degree to shape earnings outcomes. They suggest that while program choice matters, geography also plays a meaningful role in determining economic returns. From a policy perspective this points to opportunities to strengthen educational pathways that better connect rural and urban institutions - such as transfer agreements and coordinated workforce partnerships - to support alignment with local, regional, and statewide workforce needs.

## *Does institution type influence whether graduates remain employed in South Carolina?*

In South Carolina, associate degree graduates are more likely than bachelor's degree graduates to remain employed in the state in the short- and medium-terms. Figure 3 shows the share of associate and bachelor's degree graduates employed in South Carolina and outside of South Carolina at one-, five-, and 10-years after graduation. For both degree levels, in-state employment is highest one year after graduation and declines over time.

## Figure 5. In-State Labor Force Participation by Degree Type




*Source: U.S. Census Bureau Post-Secondary Employment Outcomes (PSEO).*

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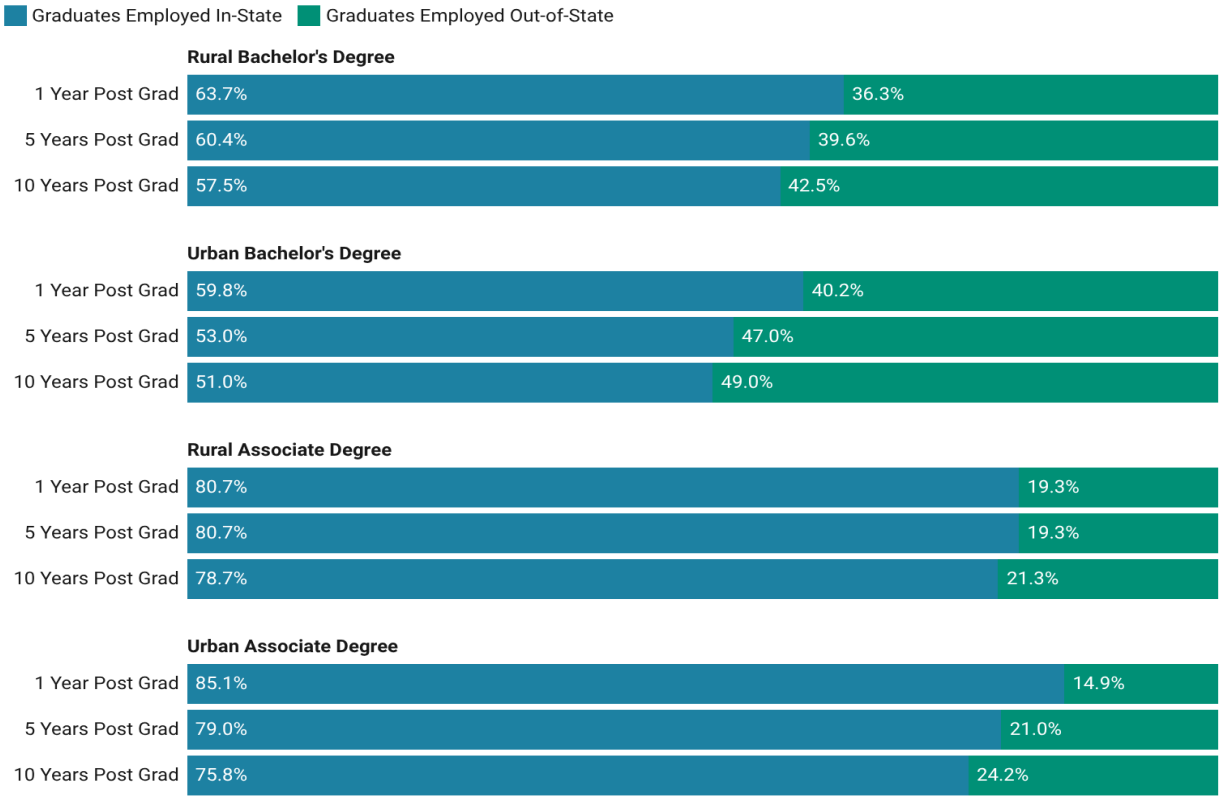
Overall, bachelor's degree graduates are more geographically mobile than associate degree graduates and as their careers progress, are more likely to work out of state. Both groups show an increasing out-of-state employment over time, which suggests that lifestyle factors as well as employment factors could be at play. Further analysis of the characteristics and industries of graduates who leave the state shortly after graduation could yield valuable insights for workforce alignment and retention strategies aimed at encouraging graduates to remain in South Carolina. Additional comparisons to migration patterns in other states, as well as exploring institution-level variation within South Carolina, would further contextualize these findings.

### *Does institution urbanicity influence in-state retention?*

The urbanicity of the institution attended is closely related to graduates' likelihood of remaining employed in South Carolina. Figure 4 shows in-state retention rates at one, five, and 10-years after graduation by both degree level and institutional urbanicity. Across all time points, associate degree graduates are more likely than bachelor's degree graduates to remain in state, regardless of whether they attended an urban or rural institution. Among bachelor's degree graduates, those who attended rural institutions are consistently more likely to be employed in South Carolina than their peers from urban institutions, though in-state retention declines over time for both groups.

## Figure 6. In-State Labor Force Participation by Degree and Institution Urbanicity




*Source: U.S. Census Bureau Post-Secondary Employment Outcomes (PSEO).*
Created with Datawrapper

A notable exception to the broader patterns of increasing out-of-state employment over time appears among associate degree graduates from rural institutions. Unlike other groups, rural associate degree graduates are nearly as likely to remain in-state 10 years after graduation as they are at one year after graduation. This stability contrasts with the pattern observed among associate degree graduates at urban institutions, whose likelihood of working out of state increases over time and more closely resembles that of bachelor's degree graduates.

Taken together, these findings show that associate degree graduates from rural institutions are the most likely to remain in South Carolina throughout their careers. In contrast, bachelor's degree graduates—regardless of institutional location—are substantially more likely to leave the state at every time point. From a policy perspective, strategies aimed at strengthening in-state workforce retention may therefore have the greatest impact if they focus on bachelor's degree graduates and associate degree graduates from urban institutions, where out-migration is more pronounced.

## *Which industries are graduates who stay in South Carolina working in?*

Previously we examined which fields of study are associated with the highest median earnings by degree level and institutional geography. We now turn to a related question: Which industries are mostly likely to employ graduates who remain working in South Carolina, particularly those who attended rural institutions?

To answer this question, we examine the distribution of graduates working in South Carolina across industries, using North American Industry Classification System (NAICS)[5] sector codes available in the PSEO data. For each industry, we calculate the share of employed graduates working in South Carolina out of all graduates employed in that sector. We focus on outcomes five years after graduation, allowing graduates time to transition to their longer-term fields of employment. Table 1 displays the five industries employing the largest number of in-state bachelor's degree graduates five years after graduation, for both rural and urban institutions. The table is sorted by the total employment in the industry, whether those employed in South Carolina or elsewhere.

*Table 1. In-State Employment for Bachelor's Degree Graduates After 5 Years*

| Urbanicity | Industry | Number of Graduates Employed in Industry In-State | Percentage of Graduates Employed In-State (out of total employed in sector) | Total Employment (5 Years Post-Grad) |
|---|---|---|---|---|
| **Rural** | Educational Services | 6,415 | 70.4% | 9,112 |
| **Rural** | Health Care and Social Assistance | 4,731 | 64.4% | 7,342 |
| **Rural** | Public Administration | 2,947 | 70.0% | 4,210 |
| **Rural** | Manufacturing | 1,900 | 60.0% | 3,167 |
| **Rural** | Finance and Insurance | 1,873 | 64.9% | 2,885 |
| **Urban** | Educational Services | 19,916 | 65.3% | 30,482 |
| **Urban** | Health Care and Social Assistance | 14,943 | 56.2% | 26,609 |
| **Urban** | Professional, Scientific, and Technical Services | 9,675 | 42.2% | 22,941 |
| **Urban** | Public Administration | 7,597 | 66.8% | 11,367 |
| **Urban** | Manufacturing | 6,369 | 53.3% | 11,939 |

At the bachelor's level, educational services is the largest employer of in-state graduates, followed closely by Health Care and Social Assistance. Public administration and manufacturing industries in South Carolina also employ substantial shares of graduates, particularly among

[5] From the U.S. Census Bureau, "The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. It was developed to allow for a high level of comparability in business statistics among the three North American countries."

those who attended rural institutions. Only 42 percent of graduates working in Professional, Scientific, and Technical Services are employed in South Carolina five years after graduation, but this still represents over 9,600 graduates. These patterns underscore the importance of public-service-oriented career pathways in South Carolina and suggest that higher education pipelines into education, health care, and government are relatively strong, produce a relatively high volume of workers, and are effective at retaining graduates in the state. A similar pattern emerges for associate degree graduates. Table 2 shows the five most industries employing the largest number of in-state associate degree graduates five years after graduation.[6]

*Table 2. In-State Employment for Associate Degree Graduates After 5 Years*

| Urbanicity | Industry | Number of Graduates Employed in Industry In-State | Percentage of Graduates Employed In-State (out of total employed in sector) | Total Employment (5 Years Post-Grad) |
|---|---|---|---|---|
| **Rural** | Health Care and Social Assistance | 6,132 | 85.7% | 7,159 |
| **Rural** | Manufacturing | 2,679 | 85.8% | 3,123 |
| **Rural** | Public Administration | 1,468 | 84.9% | 1,729 |
| **Rural** | Educational Services | 1,443 | 83.3% | 1,732 |
| **Rural** | Retail Trade | 1,122 | 72.8% | 1,542 |
| **Urban** | Health Care and Social Assistance | 19,984 | 81.6% | 24,483 |
| **Urban** | Manufacturing | 6,055 | 81.8% | 7,400 |
| **Urban** | Public Administration | 4,115 | 84.2% | 4,887 |
| **Urban** | Educational Services | 4,054 | 81.2% | 4,993 |
| **Urban** | Retail Trade | 3,780 | 73.9% | 5,115 |

Healthcare and Social Assistance is by far the largest employer of associate degree graduates in South Carolina, regardless of institutional urbanicity. Manufacturing, public administration, educational services, and retail trade also employ large numbers of associate degree graduates from both urban and rural institutions. Notably, the top five industries are identical for rural and urban associate degree graduates, and in-state employment rates within these sectors are consistently high. Taken together, these findings suggest that associate degree graduates, from both rural and urban institutions, are earning degrees in fields closely aligned with South Carolina's core workforce needs. The similarity in industry employment patterns across institutional geography indicates that associate degree programs play an essential and

[6] For more detail, Appendix D lists in- and out-of-state employment by sector for all sectors, broken down by degree type and urbanicity.

consistent role in supplying workers to key sectors of the state economy, particularly health care and manufacturing.

## *Which industries are graduates who leave South Carolina working in?*

Which industries draw the largest numbers of South Carolina's college graduates out of state? Tables 3 and 4 summarize the industries employing the greatest numbers of bachelor's and associate degree graduates working outside South Carolina five years after graduation.[7]

Five years after graduation, 40 percent of bachelor's degree graduates who attended rural institutions are employed outside of South Carolina, compared with 47 percent of bachelor's degree graduates from urban institutions. Table 6 shows that out-of-state employment among bachelor's degree graduates is concentrated in a small number of industries, though the dominant sectors slightly differ by institutional urbanicity.

*Table 3. Out-of-state Employment for Bachelor's Degree Graduates After 5 Years*

| Urbanicity | Industry | Number of Graduates Employed in Industry out-of-state | Percentage of Graduates Employed out-of-state (out of total employed in sector) | Total Employment (5 Years Post-Grad) |
|---|---|---|---|---|
| **Rural** | Educational Services | 2,697 | 29.6% | 9,112 |
| **Rural** | Health Care and Social Assistance | 2,611 | 35.6% | 7,342 |
| **Rural** | Retail Trade | 1,525 | 51.5% | 2,960 |
| **Rural** | Manufacturing | 1,267 | 40.0% | 3,167 |
| **Rural** | Public Administration | 1,263 | 30.0% | 4,210 |
| **Urban** | Professional, Scientific, and Technical Services | 13,266 | 57.8% | 22,941 |
| **Urban** | Health Care and Social Assistance | 11,666 | 43.8% | 26,609 |
| **Urban** | Educational Services | 10,566 | 34.7% | 30,482 |
| **Urban** | Finance and Insurance | 6,531 | 50.9% | 12,827 |
| **Urban** | Manufacturing | 5,570 | 46.7% | 11,939 |

Among bachelor's degree graduates from urban institutions, professional, scientific, and technical services accounts for the largest share of out-of-state employment, with nearly

[7] Complete versions of these tables are available in Appendix D.

13,300 graduates (more than half of total employed graduates in the field) working in this sector outside South Carolina. Health care and educational services also employ substantial numbers of urban bachelor's graduates out of state. Competition from nearby science and technology hubs, such as North Carolina's Research Triangle, may help explain the out-migration of graduates in professional and technical fields. These patterns suggest that attracting or expanding employers in these sectors could help South Carolina better retain this segment of its workforce.

For bachelor's degree graduates from rural institutions, out-of-state employment is more evenly distributed across education, health care, retail trade, manufacturing, and public administration. Overall, smaller shares of graduates from rural institutions seek employment out of state compared with their peers from urban institutions, though a meaningful portion still pursue opportunities elsewhere, particularly in retail trade and manufacturing.

Out-of-state employment is less common among associate degree graduates compared to bachelor's degree graduates. Table 4 shows the industries employing the largest numbers of associate degree graduates working outside South Carolina. The rates of out-of-state employment across institutional urbanicity for associate degree graduates are more similar than bachelor's degree graduates. Five years after graduation, 19 percent of associate degree graduates from rural institutions are employed out of state, compared with 21 percent of associate degree graduates from urban institutions.

As with bachelor's degree graduates, Health Care and Social Assistance and Manufacturing are the leading out-of-state industries for associate degree graduates, regardless of institutional urbanicity. Retail trade also appears prominently, particularly among rural associate degree graduates working out of state. The presence of retail trade among top out-of-state industries may indicate weaker alignment between some associate degree programs and available in-state opportunities, with graduates leaving the state for work but remaining in lower-wage or less stable employment.

*Table 4. out-of-state Employment for Associate Degree Graduates After 5 Years*

| Urbanicity | Industry | Number of Graduates Employed in Industry out-of-state | Percentage of Graduates Employed out-of-state (out of total employed in sector) | Total Employment (5 Years Post-Grad) |
|---|---|---|---|---|
| **Rural** | Health Care and Social Assistance | 1,027 | 14.4% | 7,159 |
| **Rural** | Manufacturing | 444 | 14.2% | 3,123 |
| **Rural** | Retail Trade | 420 | 27.2% | 1,542 |
| **Rural** | Administrative and Support and Waste Management and Remediation Services | 325 | 28.0% | 1,162 |
| **Rural** | Educational Services | 289 | 16.7% | 1,732 |
| **Urban** | Health Care and Social Assistance | 4,499 | 18.4% | 24,483 |
| **Urban** | Manufacturing | 1,345 | 18.2% | 7,400 |
| **Urban** | Retail Trade | 1,335 | 26.1% | 5,115 |
| **Urban** | Professional, Scientific, and Technical Services | 1,117 | 25.2% | 4,439 |
| **Urban** | Administrative and Support and Waste Management and Remediation Services | 1,080 | 28.0% | 3,851 |

Notably, many of the same industries appear among both in-state and out-of-state employment destinations. Health care and Social Assistance is the largest employer of associate degree graduates both within and outside South Carolina, and Manufacturing shows a similar pattern, though to a lesser extent. Among bachelor's degree graduates, particularly those from rural institutions, educational services also feature prominently in both in-state and out-of-state employment. These patterns suggest that while South Carolina's educational pipelines into key sectors are strong, the availability of in-state employment opportunities may not be sufficient to absorb all graduates. Expanding educational pathways without corresponding growth in in-state employment risks investing in a workforce that ultimately contributes to economic activity elsewhere.

## Next Steps for Additional Analyses

This analysis highlights several opportunities to deepen understanding of how South Carolina's higher education system aligns with workforce needs across geographic contexts. Future work could build on these findings in ways that provide more actionable insights for policymakers and institutional leaders.

First, disaggregating outcomes by graduation cohort would allow for analysis of changes over time, including whether urban–rural differences in earnings, migration, or industry alignment are widening or narrowing for more recent graduates. Such trend analyses could help assess how shifts in the state's economy, labor market, or higher education policies are influencing graduate outcomes.

Second, institutional characteristics such as size, sector, and mission may mediate some of the relationships observed here. Future research could explore whether differences attributed to urbanicity are partly explained by institutional scale or by the concentration of programs offered at larger, urban institutions versus smaller, rural colleges.

Third, this analysis could be extended using additional data to examine outcomes for short-term credentials and graduate programs. Understanding how certificate and advanced degree pathways contribute to in-state retention and workforce alignment would offer a more comprehensive view of the state's talent pipeline.

Finally, placing South Carolina's results in a broader context through comparisons with other states participating in PSEO would help distinguish state-specific dynamics from more general patterns. Cross-state comparisons could inform whether South Carolina's rural institutions are uniquely effective at retaining graduates or whether similar patterns emerge elsewhere, providing additional guidance for workforce and higher education policy.

## Conclusion

This analysis demonstrates that rural-serving institutions play a distinct and essential role in South Carolina's workforce ecosystem, one that is not fully captured by earnings measures alone. While graduates of urban institutions earn more on average, graduates of rural institutions are more likely to remain employed in South Carolina over time, particularly in sectors that are foundational to the state's economic and civic life, including education, health care, public administration, and manufacturing. These patterns underscore the importance of

considering both individual economic outcomes and collective workforce contributions when evaluating postsecondary value.

The findings also highlight meaningful differences by degree level. Associate degree graduates—many of whom attend rural institutions—exhibit the strongest in-state retention across all time horizons and are closely aligned with South Carolina's core workforce needs. Bachelor's degree graduates, by contrast, are more geographically mobile, especially those from urban institutions, and are more likely to leave the state for employment in professional and technical fields. This mobility suggests that South Carolina faces a dual challenge: retaining highly educated talent while also sustaining the pipelines that supply workers to essential public-service and production-oriented sectors.

Taken together, these results suggest that rural- and urban-serving institutions play complementary roles in advancing the state's workforce goals. Rural institutions help anchor talent locally and sustain high-need industries, while urban institutions contribute to higher-earning pathways that may require stronger in-state employer demand to retain graduates. For policymakers, these findings point to the need for differentiated strategies that recognize the workforce-stabilizing role of rural colleges, strengthen transfer and career pathways across institutions, and align postsecondary investments with the geographic distribution of employment opportunities.

More broadly, this analysis illustrates the value of PSEO data in informing workforce and higher education policy. By linking earnings, migration, and industry outcomes, PSEO data provide a more complete picture of how postsecondary education contributes to both economic opportunity and workforce stability. Leveraging these insights can help South Carolina design policies that not only prepare students for work, but also ensure that public investments in higher education translate into durable benefits for communities across the state, particularly in rural regions where talent retention is most critical.

# Appendix A. South Carolina PSEO Institutions by Urbanicity

| Institution Name | Urbanicity | Degree Awarded |
|---|---|---|
| Aiken Technical College | Urban | Associates |
| Allen University | Urban | Bachelor's |
| Central Carolina Technical College | Urban | Associates |
| Charleston Southern University | Urban | Associates |
| Citadel, the Military College of South Carolina | Rural | Bachelor's |
| Claflin University | Urban | Bachelor's |
| Clemson University | Urban | Bachelor's |
| Coastal Carolina University | Rural | Bachelor's |
| Coker University | Urban | Bachelor's |
| College of Charleston | Urban | Bachelor's |
| Columbia College of South Carolina | Urban | Bachelor's |
| Columbia International University | Urban | Associates |
| Converse College | Rural | Bachelor's |
| Denmark Technical College | Urban | Associates |
| Erskine College | Rural | Bachelor's |
| Florence - Darlington Technical College | Rural | Bachelor's |
| Francis Marion University | Urban | Associates |
| Furman University | Rural | Bachelor's |
| Greenville Technical College | Rural | Associates |
| Horry Georgetown Technical College | Rural | Bachelor's |
| Lander University | Rural | Bachelor's |
| Limestone University | Urban | Associates |
| Midlands Technical College - Airport Campus | Urban | Bachelor's |
| Morris College | Urban | Associates |
| Newberry College | Urban | Bachelor's |
| North Greenville University | Urban | Associates |
| Northeastern Technical College | Rural | Bachelor's |
| Orangeburg Calhoun Technical College | Rural | Associates |
| Piedmont Technical College | Rural | Bachelor's |
| Presbyterian College | Urban | Bachelor's |
| Sherman College of Straight Chiropractic | Urban | Associates |
| South Carolina State University | Rural | Bachelor's |
| South University - Columbia | Urban | Associates |
| Southern Wesleyan University | Rural | Associates |
| Spartanburg Community College | Urban | Associates |
| Spartanburg Methodist College | Urban | Bachelor's |
| Technical College of the Lowcountry - Beaufort Campus | Urban | Bachelor's |
| Tri-County Technical College | Urban | Associates |
| Trident Technical College | Urban | Bachelor's |
| University of South Carolina - Aiken | Urban | Associates |
| University of South Carolina - Beaufort | Urban | Bachelor's |
| University of South Carolina - Columbia | Rural | Associates |
| University of South Carolina - Lancaster | Rural | Associates |
| University of South Carolina - Salkehatchie | Rural | Bachelor's |
| University of South Carolina - Sumter | Urban | Associates |

| | | |
|---|---|---|
| University of South Carolina - Union | Rural | Associates |
| University of South Carolina Upstate | Rural | Associates |
| Voorhees College | Rural | Associates |
| Williamsburg Technical College | Urban | Bachelor's |
| Winthrop University | Urban | Associates |
| Wofford College | Urban | Bachelor's |
| York Technical College | Urban | Associates |

## Appendix B. Median Bachelor's Earnings by Urbanicity and Institution

| Urbanicity | Institution | Median Earnings 1 Year Post-Grad | Median Earnings 5 Years Post-Grad | Median Earnings 10 Years Post-Grad |
|---|---|---|---|---|
| Rural | Claflin University | 33,112 | 42,694 | 50,003 |
| Rural | Coker University | 33,946 | 43,028 | 50,306 |
| Rural | Erskine College | 33,321 | 49,074 | 60,935 |
| Rural | Francis Marion University | 34,877 | 46,091 | 55,500 |
| Rural | Lander University | 35,467 | 46,912 | 55,152 |
| Rural | Limestone University | 40,541 | 48,994 | 55,835 |
| Rural | Newberry College | 36,031 | 46,900 | 56,020 |
| Rural | North Greenville University | 31,727 | 43,341 | 53,081 |
| Rural | Presbyterian College | 37,552 | 52,525 | 66,687 |
| Rural | South Carolina State University | 31,209 | 44,747 | 53,677 |
| Rural | Voorhees College | 32,887 | 41,032 | 46,824 |
| Urban | Allen University | 28,416 | 36,057 | 42,949 |
| Urban | Charleston Southern University | 38,440 | 48,110 | 58,461 |
| Urban | Citadel, the Military College | 47,641 | 64,371 | 85,734 |
| Urban | Clemson University | 46,082 | 64,496 | 84,288 |
| Urban | Coastal Carolina University | 32,545 | 49,480 | 60,601 |
| Urban | College of Charleston | 35,149 | 52,390 | 67,706 |
| Urban | Columbia College of South Carolina | 38,414 | 44,277 | 53,310 |
| Urban | Columbia International University | 29,544 | 39,597 | 49,528 |
| Urban | Converse College | 34,310 | 44,204 | 54,173 |
| Urban | Furman University | 39,004 | 59,072 | 79,271 |
| Urban | Morris College | 29,495 | 37,311 | 42,220 |
| Urban | South University - Columbia | 43,680 | 50,208 | 53,310 |
| Urban | Southern Wesleyan University | 44,834 | 54,117 | 61,407 |
| Urban | University of South Carolina - Aiken | 38,146 | 48,742 | 58,954 |
| Urban | University of South Carolina - Beaufort | 37,250 | 50,004 | 58,042 |
| Urban | University of South Carolina - Columbia | 40,065 | 56,273 | 71,293 |
| Urban | University of South Carolina Upstate | 40,825 | 50,262 | 59,342 |
| Urban | Winthrop University | 34,941 | 47,748 | 57,521 |

## Appendix C. Median Associate Earnings by Urbanicity and Institution

| Urbanicity | Institution | Median Earnings 1 Year Post-Grad | Median Earnings 5 Years Post-Grad | Median Earnings 10 Years Post-Grad |
|---|---|---|---|---|
| Rural | Denmark Technical College | 26,972 | 30,495 | 34,454 |
| Rural | Florence - Darlington Technical College | 43,227 | 50,418 | 57,922 |
| Rural | Limestone University | 43,296 | 47,791 | 54,809 |
| Rural | North Greenville University | 30,352 | 36,569 | 40,415 |
| Rural | Northeastern Technical College | 37,887 | 42,716 | 50,063 |
| Rural | Orangeburg Calhoun Technical College | 44,942 | 49,953 | 53,581 |
| Rural | Piedmont Technical College | 37,706 | 44,147 | 49,952 |
| Rural | University of South Carolina - Lancaster | 31,032 | 43,240 | 50,941 |
| Rural | University of South Carolina - Salkehatchie | 25,680 | 36,819 | 43,679 |
| Rural | University of South Carolina - Union | 25,603 | 37,404 | 45,035 |
| Rural | Williamsburg Technical College | 27,583 | 30,341 | 34,661 |
| Urban | Aiken Technical College | 42,184 | 50,301 | 54,162 |
| Urban | Central Carolina Technical College | 43,027 | 47,739 | 54,445 |
| Urban | Columbia International University | | 32,928 | |
| Urban | Greenville Technical College | 43,611 | 52,361 | 58,956 |
| Urban | Horry Georgetown Technical College | 35,603 | 45,466 | 52,994 |
| Urban | Midlands Technical College | 40,067 | 48,322 | 55,551 |
| Urban | South University - Columbia | 31,837 | 37,117 | 39,087 |
| Urban | Southern Wesleyan University | 50,797 | 55,542 | 62,657 |
| Urban | Spartanburg Community College | 38,939 | 46,529 | 52,576 |
| Urban | Spartanburg Methodist College | 23,057 | 36,788 | 47,377 |
| Urban | Technical College of the Lowcountry - | 45,374 | 49,791 | 54,658 |
| Urban | Tri-County Technical College | 41,300 | 49,875 | 55,400 |
| Urban | Trident Technical College | 41,656 | 51,107 | 58,598 |
| Urban | University of South Carolina - Aiken | 59,482 | 71,612 | 76,951 |
| Urban | University of South Carolina - Beaufort | 31,424 | 48,983 | 55,788 |
| Urban | University of South Carolina - Columbia | | 52,420 | 52,865 |
| Urban | University of South Carolina - Sumter | 27,699 | 41,300 | 48,492 |
| Urban | University of South Carolina Upstate | 58,501 | 68,691 | 65,618 |
| Urban | York Technical College | 39,010 | 47,897 | 53,993 |

## Appendix D: In-State and Out-of-State Workforce Retention After Five Years

| Degree | Urbanicity | NAICS Industry | Total Employed 5 Years Post-Graduation | Total Employed In-State 5 Years Post-Graduation | % Employed In-State 5 Years Post-Graduation | Total Employed Out-of-State 5 Years Post-Graduation | % Employed Out-of-State 5 Years Post-Graduation |
|---|---|---|---|---|---|---|---|
| Bachelor's | Rural | Educational Services | 9,112 | 6,415 | 70.4% | 2,697 | 29.6% |
| Bachelor's | Rural | Health Care and Social Assistance | 7,342 | 4,731 | 64.4% | 2,611 | 35.6% |
| Bachelor's | Rural | Retail Trade | 2,960 | 1,435 | 48.5% | 1,525 | 51.5% |
| Bachelor's | Rural | Manufacturing | 3,167 | 1,900 | 60.0% | 1,267 | 40.0% |
| Bachelor's | Rural | Public Administration | 4,210 | 2,947 | 70.0% | 1,263 | 30.0% |
| Bachelor's | Rural | Professional, Scientific, and Technical Services | 2,513 | 1,283 | 51.1% | 1,230 | 48.9% |
| Bachelor's | Rural | Administrative and Support and Waste Management and remediation Services | 2,300 | 1,218 | 53.0% | 1,082 | 47.0% |
| Bachelor's | Rural | Finance and Insurance | 2,885 | 1,873 | 64.9% | 1,012 | 35.1% |
| Bachelor's | Rural | Accommodation and Food Services | 1,394 | 543 | 39.0% | 851 | 61.0% |
| Bachelor's | Rural | Wholesale Trade | 1,141 | 599 | 52.5% | 542 | 47.5% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Bachelor's | Rural | Transportation and Warehousing | 896 | 361 | 40.3% | 535 | 59.7% |
| Bachelor's | Rural | Construction | 878 | 404 | 46.0% | 474 | 54.0% |
| Bachelor's | Rural | Information | 916 | 514 | 56.1% | 402 | 43.9% |
| Bachelor's | Rural | Other Services (except Public Administration) | 663 | 304 | 45.9% | 359 | 54.1% |
| Bachelor's | Rural | Real Estate and Rental and Leasing | 559 | 291 | 52.1% | 268 | 47.9% |
| Bachelor's | Rural | Management of Companies and Enterprises | 456 | 244 | 53.5% | 212 | 46.5% |
| Bachelor's | Rural | Arts, Entertainment, and Recreation | 354 | 150 | 42.4% | 204 | 57.6% |
| Bachelor's | Rural | Agriculture, Forestry, Fishing and Hunting | 183 | 75 | 41.0% | 108 | 59.0% |
| Bachelor's | Rural | Utilities | 386 | 288 | 74.6% | 98 | 25.4% |
| Bachelor's | Rural | Mining, Quarrying, and Oil and Gas Extraction | 51 | 19 | 37.3% | 32 | 62.7% |
| Bachelor's | Urban | Professional, Scientific, and Technical Services | 22,941 | 9,675 | 42.2% | 13,266 | 57.8% |
| Bachelor's | Urban | Health Care and Social Assistance | 26,609 | 14,943 | 56.2% | 11,666 | 43.8% |
| Bachelor's | Urban | Educational Services | 30,482 | 19,916 | 65.3% | 10,566 | 34.7% |
| Bachelor's | Urban | Finance and Insurance | 12,827 | 6,296 | 49.1% | 6,531 | 50.9% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Bachelor's | Urban | Manufacturing | 11,939 | 6,369 | 53.3% | 5,570 | 46.7% |
| Bachelor's | Urban | Retail Trade | 10,876 | 5,378 | 49.4% | 5,498 | 50.6% |
| Bachelor's | Urban | Administrative and Support and Waste Management and Remediation Services | 8,475 | 3,966 | 46.8% | 4,509 | 53.2% |
| Bachelor's | Urban | Accommodation and Food Services | 8,310 | 3,955 | 47.6% | 4,355 | 52.4% |
| Bachelor's | Urban | Wholesale Trade | 7,547 | 3,468 | 46.0% | 4,079 | 54.0% |
| Bachelor's | Urban | Public Administration | 11,367 | 7,597 | 66.8% | 3,770 | 33.2% |
| Bachelor's | Urban | Information | 5,137 | 2,269 | 44.2% | 2,868 | 55.8% |
| Bachelor's | Urban | Construction | 4,768 | 2,429 | 50.9% | 2,339 | 49.1% |
| Bachelor's | Urban | Other Services (except Public Administration) | 3,330 | 1,489 | 44.7% | 1,841 | 55.3% |
| Bachelor's | Urban | Management of Companies and Enterprises | 2,932 | 1,216 | 41.5% | 1,716 | 58.5% |
| Bachelor's | Urban | Arts, Entertainment, and Recreation | 2,732 | 1,097 | 40.2% | 1,635 | 59.8% |
| Bachelor's | Urban | Transportation and Warehousing | 2,942 | 1,366 | 46.4% | 1,576 | 53.6% |
| Bachelor's | Urban | Real Estate and Rental and Leasing | 2,860 | 1,582 | 55.3% | 1,278 | 44.7% |
| Bachelor's | Urban | Utilities | 1,200 | 962 | 80.2% | 238 | 19.8% |
| Bachelor's | Urban | Agriculture, Forestry, | 413 | 226 | 54.7% | 187 | 45.3% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Fishing and Hunting | | | | | |
| Bachelor's | Urban | Mining, Quarrying, and Oil and Gas Extraction | 136 | 34 | 25.0% | 102 | 75.0% |
| Associates | Rural | Health Care and Social Assistance | 7,159 | 6,132 | 85.7% | 1,027 | 14.3% |
| Associates | Rural | Manufacturing | 3,123 | 2,679 | 85.8% | 444 | 14.2% |
| Associates | Rural | Retail Trade | 1,542 | 1,122 | 72.8% | 420 | 27.2% |
| Associates | Rural | Administrative and Support and Waste Management and Remediation Services | 1,162 | 837 | 72.0% | 325 | 28.0% |
| Associates | Rural | Educational Services | 1,732 | 1,443 | 83.3% | 289 | 16.7% |
| Associates | Rural | Public Administration | 1,729 | 1,468 | 84.9% | 261 | 15.1% |
| Associates | Rural | Wholesale Trade | 530 | 309 | 58.3% | 221 | 41.7% |
| Associates | Rural | Professional, Scientific, and Technical Services | 691 | 476 | 68.9% | 215 | 31.1% |
| Associates | Rural | Finance and Insurance | 998 | 794 | 79.6% | 204 | 20.4% |
| Associates | Rural | Accommodation and Food Services | 504 | 329 | 65.3% | 175 | 34.7% |
| Associates | Rural | Construction | 396 | 281 | 71.0% | 115 | 29.0% |
| Associates | Rural | Transportation and Warehousing | 281 | 192 | 68.3% | 89 | 31.7% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Associates | Rural | Other Services (except Public Administration) | 385 | 300 | 77.9% | 85 | 22.1% |
| Associates | Rural | Information | 213 | 152 | 71.4% | 61 | 28.6% |
| Associates | Rural | Real Estate and Rental and Leasing | 131 | 88 | 67.2% | 43 | 32.8% |
| Associates | Rural | Management of Companies and Enterprises | 188 | 148 | 78.7% | 40 | 21.3% |
| Associates | Rural | Arts, Entertainment, and Recreation | 74 | 39 | 52.7% | 35 | 47.3% |
| Associates | Rural | Agriculture, Forestry, Fishing and Hunting | 42 | 27 | 64.3% | 15 | 35.7% |
| Associates | Rural | Utilities | 211 | 201 | 95.3% | 10 | 4.7% |
| Associates | Rural | Mining, Quarrying, and Oil and Gas Extraction | 7 | 3 | 42.9% | 4 | 57.1% |
| Associates | Urban | Health Care and Social Assistance | 24,483 | 19,984 | 81.6% | 4,499 | 18.4% |
| Associates | Urban | Manufacturing | 7,400 | 6,055 | 81.8% | 1,345 | 18.2% |
| Associates | Urban | Retail Trade | 5,115 | 3,780 | 73.9% | 1,335 | 26.1% |
| Associates | Urban | Professional, Scientific, and Technical Services | 4,439 | 3,322 | 74.8% | 1,117 | 25.2% |
| Associates | Urban | Administrative and Support and Waste Management and Remediation Services | 3,851 | 2,771 | 72.0% | 1,080 | 28.0% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Associates | Urban | Educational Services | 4,993 | 4,054 | 81.2% | 939 | 18.8% |
| Associates | Urban | Accommodation and Food Services | 2,847 | 2,029 | 71.3% | 818 | 28.7% |
| Associates | Urban | Public Administration | 4,887 | 4,115 | 84.2% | 772 | 15.8% |
| Associates | Urban | Finance and Insurance | 2,925 | 2,275 | 77.8% | 650 | 22.2% |
| Associates | Urban | Construction | 1,833 | 1,322 | 72.1% | 511 | 27.9% |
| Associates | Urban | Wholesale Trade | 1,716 | 1,248 | 72.7% | 468 | 27.3% |
| Associates | Urban | Transportation and Warehousing | 1,229 | 919 | 74.8% | 310 | 25.2% |
| Associates | Urban | Information | 1,294 | 1,010 | 78.1% | 284 | 21.9% |
| Associates | Urban | Other Services (except Public Administration) | 984 | 759 | 77.1% | 225 | 22.9% |
| Associates | Urban | Arts, Entertainment, and Recreation | 497 | 308 | 62.0% | 189 | 38.0% |
| Associates | Urban | Real Estate and Rental and Leasing | 656 | 518 | 79.0% | 138 | 21.0% |
| Associates | Urban | Management of Companies and Enterprises | 779 | 657 | 84.3% | 122 | 15.7% |
| Associates | Urban | Utilities | 721 | 681 | 94.5% | 40 | 5.5% |
| Associates | Urban | Agriculture, Forestry, Fishing and Hunting | 89 | 65 | 73.0% | 24 | 27.0% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Associates | Urban | Mining, Quarrying, and Oil and Gas Extraction | 22 | 9 | 40.9% | 13 | 59.1% |