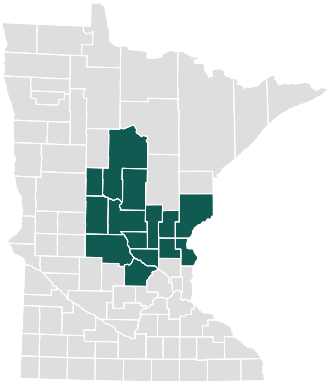
CENTER for RURAL POLICY & DEVELOPMENT

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Pathways After High School in Central Minnesota

Understanding Where Graduates Go After High School

NOVEMBER 2026



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“Pathways After High School” series, by Kelly Asche, Senior Researcher, Center for Rural Policy & Development

Center for Rural Policy & Development
PO Box 3185
Mankato, MN 56002

Major funding for research at the Center for Rural Policy & Development is provided by:

The Bush Foundation

The McKnight Foundation

Blandin Foundation

The State of Minnesota

- MN Department of Employment & Economic Development
- MN Department of Agriculture

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Pathways After High School

in Central Minnesota

Every year, students graduate from high schools across Greater Minnesota, beginning the transition to adulthood. Some continue on to college, others enter the workforce directly, and many move between education and work in the years that follow. Over time, these early transitions shape not only the individuals' careers but also the region's labor force, economic stability, and long-term population trends.

To better understand this important point in young people's lives, we undertook the project of examining what happens to Minnesota's high school graduates after they leave the K–12 system. Rather than focusing on a single point in time, however, we used data to follow graduates for more than a decade after high school. We did this to see if we could identify large patterns in how postsecondary education, workforce participation, and geographic mobility unfold over time and to see if we could discern decisions that put people on particular pathways. The goal was not to explain individual decisions or assign cause, but to gain insight into how education systems and workforce systems intersect in practice.

This report looks at high school graduates from Central Minnesota who graduated between 2008 and 2023. During our analysis, three broad patterns, or "pathways," emerged from the data.

- **The Postsecondary Credential Earner Pathway:** Just under half of high school graduates (48%) completed some kind of postsecondary credential. Among these "credential earners," a majority of them went on to stable, consistent workforce participation. Where they earned that credential strongly influenced whether they stayed in or returned to their home region or went elsewhere for work.
- **The Workforce-First Pathway:** Others entered the workforce directly without earning a credential. Among these graduates, where in the region they went to high school was most closely tied to whether they found consistent, stable employment within the region, largely because of the Twin Cities' pull on the eastern counties. Career and Technical Education (CTE) in high school was also associated with steady regional employment.
- **The Disconnected Pathway:** A third group experienced persistent disconnection from both postsecondary education and sustained employment, a condition that, for many, does not resolve on its own and is shaped by structural barriers that begin well before high school graduation.

Understanding that these distinct pathways exist — and what they mean — matters for regional planning and workforce development. Treating where

students go after high school as if each were on a random, unique path that started the day after graduation hides the fact that there are a few large-scale patterns that connect high school to the workforce. Looking instead at the pathways students are actually grouped into gives a clearer picture of how they ended up where they did.

About the Data

This analysis draws on linked administrative data provided by the state. Using anonymized records, we were able to connect data across systems, creating a longitudinal view of educational pathways and employment outcomes after high school that wasn't visible before. Three primary data sources were used:

High School Records. Courses taken; participation in CTE; Minnesota Comprehensive Assessment and ACT test scores; and indicators for special populations such as students of color, students in special education, or those qualifying for free or reduced-price lunch. Together, these records described students' academic preparation and learning experiences prior to graduation.

Postsecondary Records. Enrollment, persistence, and completion data drawn from Minnesota's public higher education systems and the National Student Clearinghouse. These records capture both in-state and out-of-state attendance and identify the types and locations of institutions students attended.

Employment Records. Wage and employment records from the Minnesota Department of Employment and Economic Development (DEED) captured employment within Minnesota, including hours worked, employer attachment, and indicators of job stability. Employment outside Minnesota was not directly observed.

Note: The findings in this report should be interpreted as *associations* only and not *causes.* The analysis highlights *where outcomes tended to cluster,* offering context for regional planning, but we are not able to say definitively that the presence of a certain characteristic *caused* an outcome, only the degree to which it made that outcome more likely. Read the "Limitations" section in the Appendix for a more thorough discussion on how we use "predictability" and "likelihood" in this report.

The entire dataset was split into individuals who graduated from five distinct regions. This report focuses on the Central region: the 14 counties of Economic Development Regions 5, 7E and 7W, which are Benton, Cass, Chisago, Crow Wing, Isanti, Kanabec, Mille Lacs, Morrison, Pine, Sherburne, Stearns, Todd, Wadena and Wright. This analysis examined 137,622 individuals who graduated from school districts within this region from 2008 to 2023.

Research regions by number of individuals in dataset

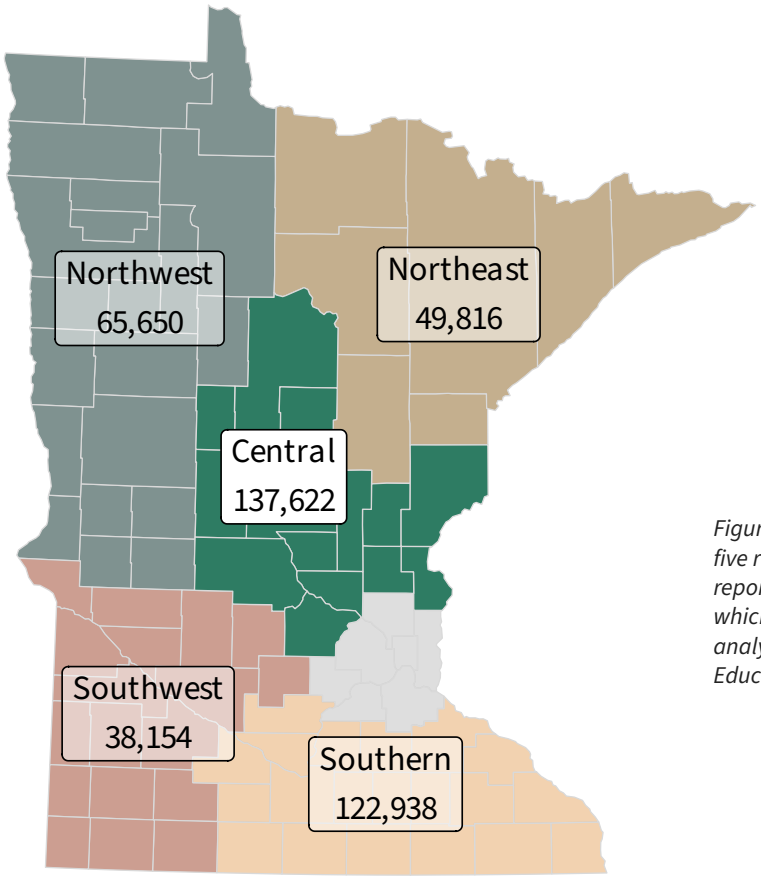


Figure 1: The full dataset was split into five regions during the analysis. This report focuses on the Central region, which had 137,622 individuals in the analysis. Data: MN Office of Higher Education, SLEDS

Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Tracking Outcomes Over Time

Each graduate's workforce and/or education status was assessed every year after high school. Rather than looking at a single point in time, we tracked patterns across multiple years after high school graduation, with particular attention to outcomes at Year 1 (short-term transition), Year 5 (mid-term attachment to an employer or career), and Year 10 (longer-term employment patterns). This reduced the influence of short-term fluctuations and highlighted relationships that held up over time.

Each year, individuals were assigned to one of five mutually exclusive categories, based on their situation at the time:

Sustained Workforce Participation—Central (Regional Employment). Worked 1,000 hours or more that year with a single employer in the Central Minnesota region — stable, in-region employment. This is the employment situation *most directly tied to the region's own economy:* it represents a graduate's labor and skills directly benefiting Central Minnesota.

Sustained Workforce Participation—MN. Worked 1,000 or more hours that year with a single employer elsewhere in Minnesota — stable employment, but outside the region. This category reflects a "leakage" of workforce investment: the graduate is stably employed, but the region isn't the one benefiting. It's central to understanding regional retention.

Non-sustained Workforce Participation. Had a record of Minnesota employment but fell short of the sustained threshold of 1,000 hours and wasn't enrolled in postsecondary education. They typically worked part-time or intermittently. While it may have been by choice, this can signal underemployment or economic instability, which matters for workforce development planning.

Attending Postsecondary. Enrolled in postsecondary education without meeting the sustained employment threshold — often full-time students or those newly transitioning out of high school. This category represents continued investment in education rather than disengagement since many move into the workforce categories in later years.

No Minnesota Employment Record, Not Attending Postsecondary. No observed MN employment or enrollment record for the year. Includes people working in other states, in the military or other federal employment, the self-employed, a stay-at-home parent, or someone otherwise outside the labor force. This category mixes very different situations — an out-of-state career move looks the same in the data as true disconnection from work and school — so it needs to be interpreted carefully rather than treated as a single "disconnected" outcome.

The Findings: Paths Taken by High School Graduates

Finding 1: Where students went after high school

Figure 2 charts how many Central Minnesota students ended up in each of the five categories each year after high school.

For many students, the first step was further education. In the first year after graduation, nearly half of Central Minnesota's graduates (49.5%) were enrolled in a postsecondary institution, whether a local community college, a technical program, or a four-year university. Another 20% were in the non-sustained workforce category, not surprising for recent high school graduates; 13% had sustained employment in the region, while 8% had sustained employment somewhere else in Minnesota, and 10% had no Minnesota employment record.

These percentages shift over time, however. At Year 5, most high school graduates had completed their postsecondary journeys and settled into more stable employment patterns. The distribution in Central Minnesota was approximately 22% in sustained workforce participation within the

Workforce outcomes by years after graduating high school

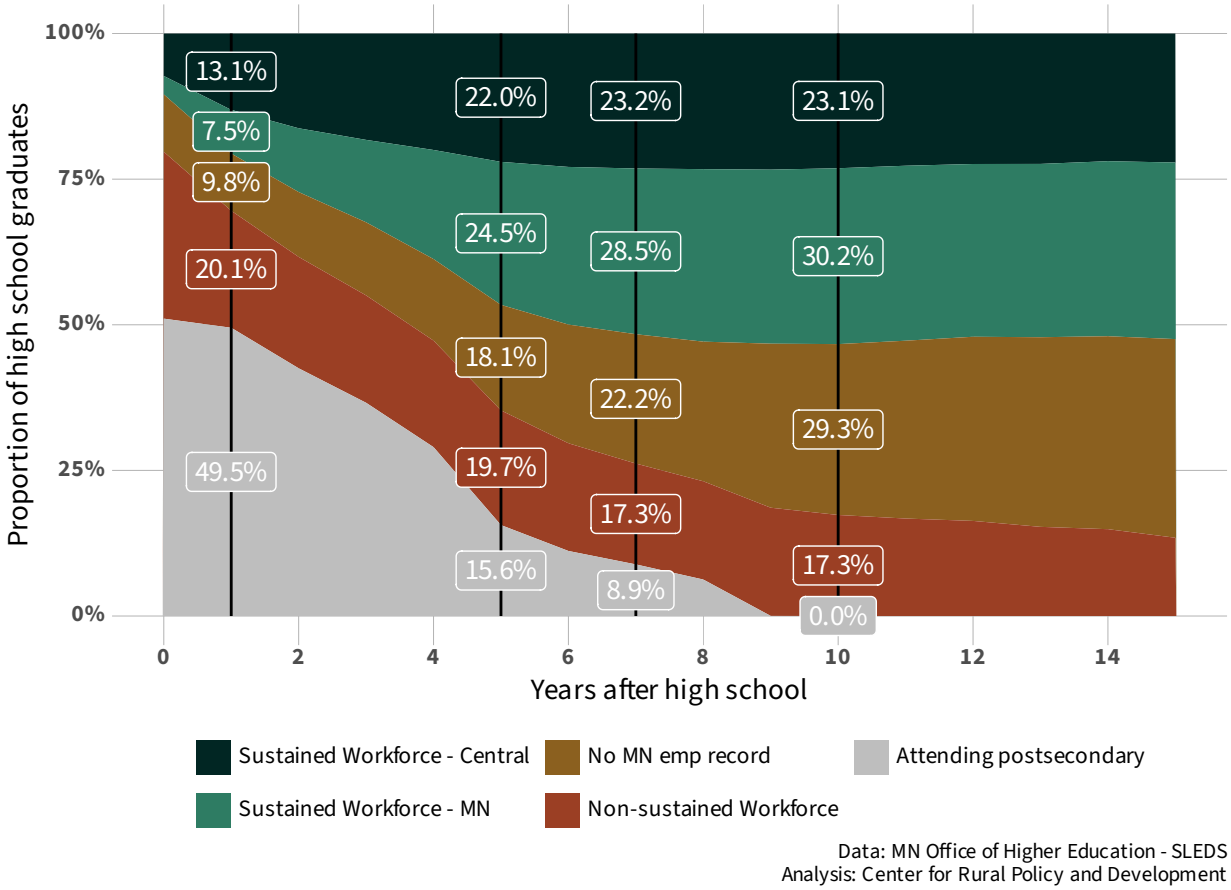


Figure 2: The share of the total high school graduates in each category shifts each year after graduating high school. Data: Minnesota Office of Higher Education, SLEDS

region, 25% in sustained workforce participation elsewhere in Minnesota, and 20% in non-sustained workforce participation. Roughly 18% had no Minnesota employment record, and 16% were still attending postsecondary. At this five-year mark, more Central graduates had sustained employment elsewhere in Minnesota than in the region itself, and that gap widened in the years that followed. Because these categories are based on where the employer is located rather than where the graduate lives, this group likely includes graduates who still live in the region but commute to jobs in the Twin Cities metro, which borders the region's southern counties.

By Year 10, the percentage of high school grads with sustained employment in the Central region had stabilized at about 23%, while sustained employment elsewhere in Minnesota had grown to 30%. The share with no Minnesota employment record had also grown, to 29%, likely reflecting a combination of out-of-state employment/outmigration, and people still in the region but persistently disconnected from the labor force.

Sustained employment holds around twenty-five percent, while 'no Minnesota record' grows steadily in the years after high school

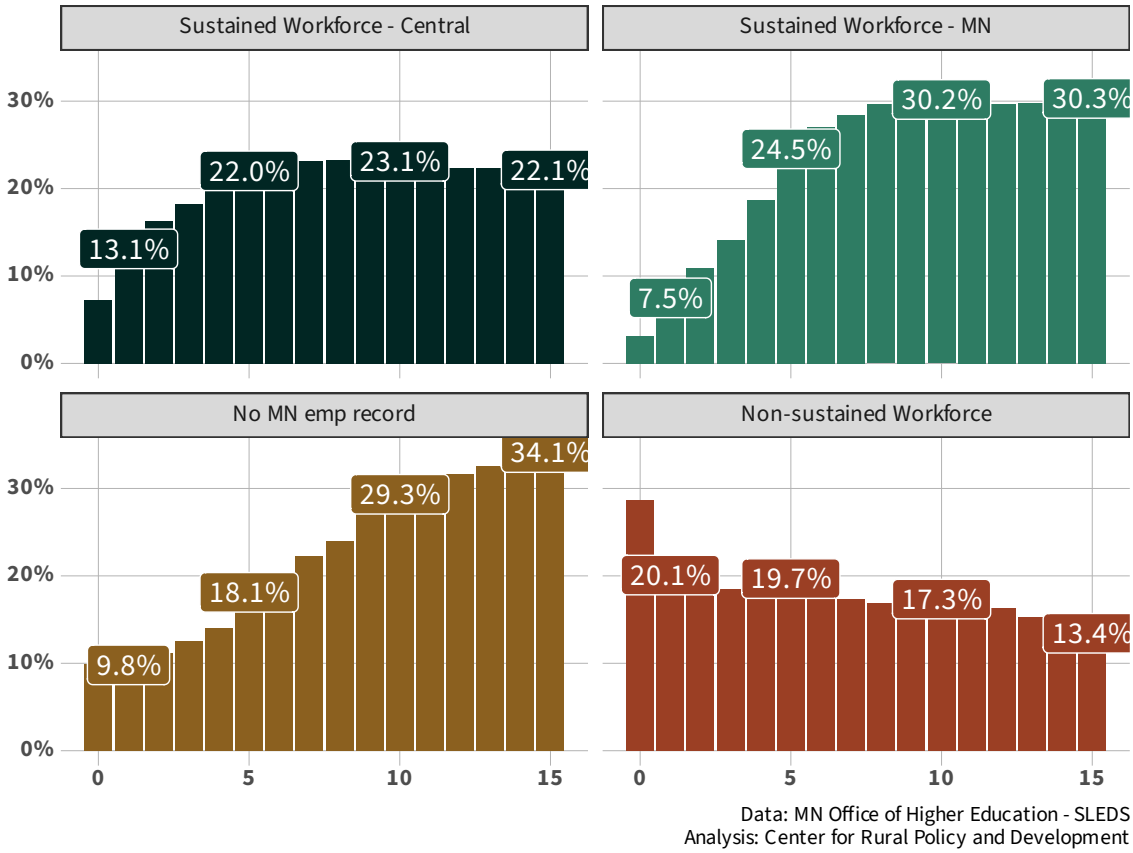


Figure 3: The percentage of individuals each year after graduating high school in each workforce participation category. Note: "Attending post-secondary" is included in the percentages but not shown here in order to see the workforce participation categories better. Data: Minnesota Office of Higher Education, SLEDS

Finding 2: Three Distinct Pathways

The next step in our analysis was to better understand *how* students ended up in their respective categories. Within the data, a surprisingly consistent pattern of three broad "pathways" emerged. Which pathway students ended up on was associated with their plans, choices, and the structural opportunities and barriers they faced in high school and even earlier. These factors were consistently associated with the pathways, meaning that a particular set of factors made some outcomes noticeably more likely than others, even though no individual's outcome was set in stone.

The three pathways are:

The Postsecondary–Credential Earner Pathway. High school graduates who went on to complete a postsecondary credential—a degree, certificate, or similar. Completing that credential was the strongest single predictor of later workforce outcomes: these "credential earners" were substantially more likely to be in sustained employment five years after high school

than those who didn't complete some kind of postsecondary credential program. Where they finished their program also mattered a great deal geographically—people tended to stay and work where they earned their credential.

The Workforce–First Pathway. Graduates who did not complete a postsecondary program but instead entered the workforce directly. Among this group, where in the Central region a graduate went to high school was most strongly tied to eventual sustained employment in the region, and participation in career-aligned courses in high school, such as CTE, was also associated with staying.

The Disconnected Pathway. Just over half of graduates who did not complete some kind of postsecondary education program were disconnected from steady work five years after high school, either working unsteadily or absent from Minnesota's employment records. For many, this was not a temporary condition—it was a long-term trajectory shaped by structural barriers that began well before high school graduation. The data provided clear clues as to who is most at risk and what offered protection against this disconnection.

Each of these three pathways works differently, and lumping them together would hide exactly the patterns this report is trying to surface. A graduate who's steadily employed nearby, one who's cycling through unstable jobs, and one who's disappeared from Minnesota's employment records entirely are having three very different experiences, and each requires a different kind of response from workforce developers. The sections below take each pathway on its own terms: what it looks like, who tends to end up there, and what seems to make a difference.

The goal of this report

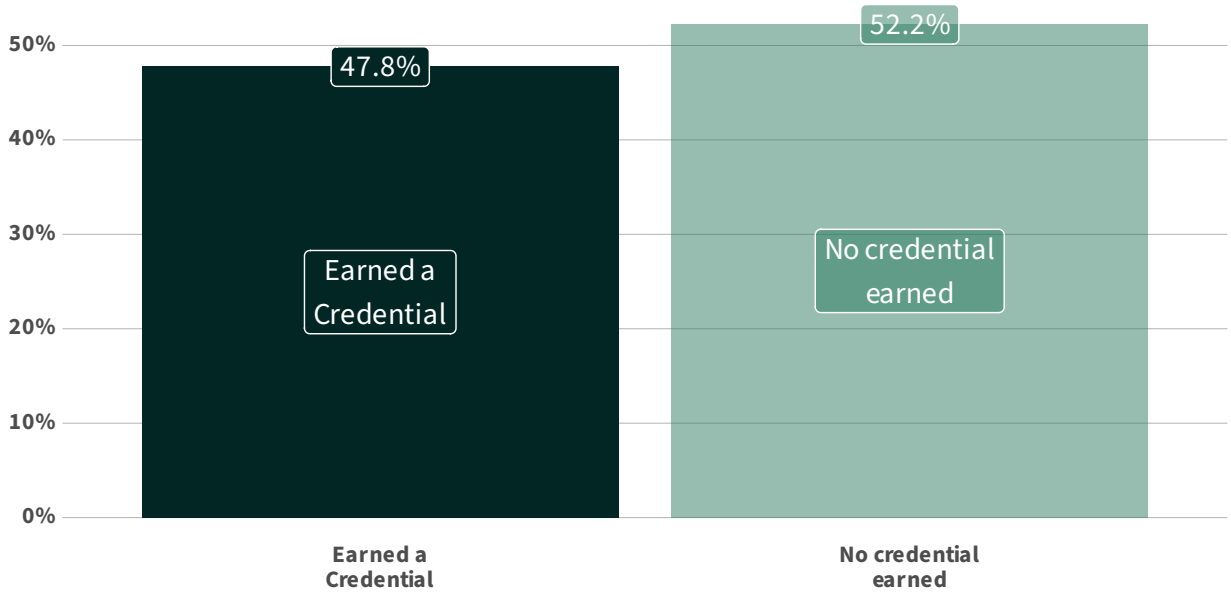
The goal of this report is not to decree that one pathway or outcome is better than another, but simply to introduce these findings and describe them, in this way helping workforce development professionals, education professionals, local and state officials and others interested in Greater Minnesota's economic health understand the high-school-to-workforce pipeline and make informed decisions to improve it.

Pathway 1: The Credential Earners' Pathway

The first major discovery in the dataset was this: Completing some kind of postsecondary education program had the most impact on whether a student ended up in sustained workforce participation for years to come.

Students who completed a program and received a credential, whether a four-year degree, two-year degree, certificate or other credential, followed a fundamentally different path compared to those who didn't complete some

Just under half of Central high school graduates between the years 2008 and 2019 earned a credential after high school by 2023.



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Figure 4: Percent of 2008 to 2019 high school graduates in Central Minnesota by postsecondary credential completion. Data: Minnesota Office of Higher Education, SLEDS

kind of postsecondary education, and in particular, those who never started a postsecondary program at all.

This section walks through this finding in three parts:

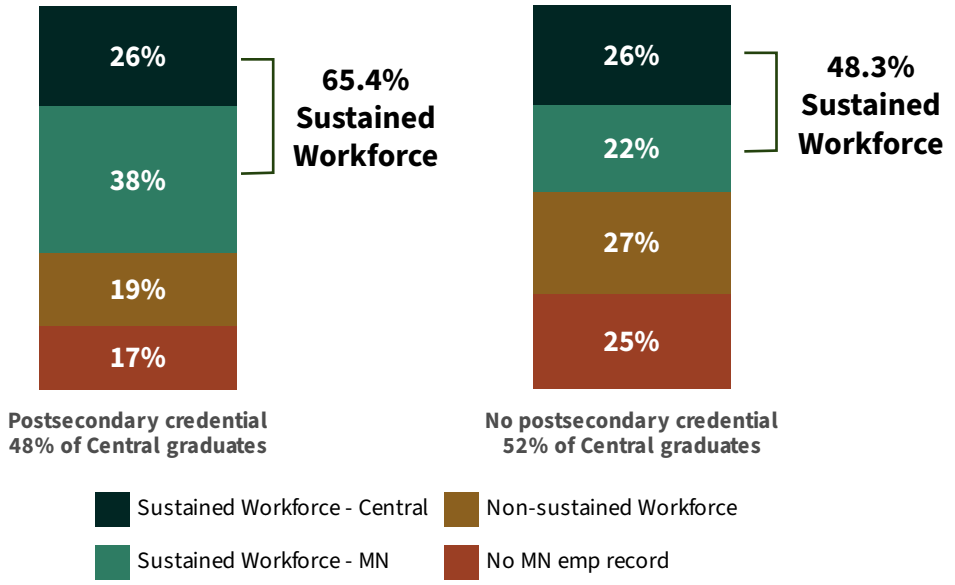
- How strongly earning a credential is tied to steady employment;
- Which characteristics were associated with a graduate completing a credential in the first place; and
- What factors shaped whether credential earners built their career in the region or somewhere else.

Completing postsecondary education (or not completing it) had the strongest association with workforce participation outcomes across all the variables measured.

How strongly earning a credential is tied to steady employment

Just under half of Central Minnesota's high school students graduating between 2008 and 2019 completed some kind of postsecondary credential in the first five years after high school (Figure 4). Those who did were considerably more likely to be in sustained workforce participation somewhere in Minnesota by Year 5: about two-thirds of credential earners, compared to fewer than half of those without a credential (Figure 5).

Completing a postsecondary credential is linked to higher sustained employment five years after graduation



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Figure 5: At five years after high school, 64.5% of individuals who earned a postsecondary credential had sustained workforce participation either in the region (26%) or elsewhere in Minnesota (38%). In comparison, 48.3% of non-credential earners had sustained workforce participation. Data: MN Office of Higher Education, SLEDS

The 16.2-percentage-point difference shows **a strong correlation between completing some kind of postsecondary education or training and finding sustained work.**

Where that sustained work happened tells a different story in Central Minnesota compared to the state's other regions. A larger share of credential earners had sustained employment elsewhere in Minnesota than in the Central region at Year 5, while non-credential earners were about as likely as credential earners to have sustained employment in the region. In other words, the employment advantage that came with a postsecondary credential showed up almost entirely as jobs outside the region.

What factors were more highly associated with completing a postsecondary program?

PSEO participation. Taking college courses while still in high school through Postsecondary Enrollment Options (PSEO) was associated with the largest completion gap of any of the characteristics in Figure 6. It is a fairly intuitive result, since PSEO participation means a student is already earning college credit before they graduate from high school.

Gender. Female graduates completed postsecondary credentials at notably higher rates than male graduates, even after accounting for other differences between them.

Taking an AP exam. Graduates who took an Advanced Placement (AP) exam were more likely to complete a postsecondary credential than otherwise similar graduates who did not. Like PSEO, AP coursework gives students

early experience with college-level work and a chance to earn college credit before graduating from high school.

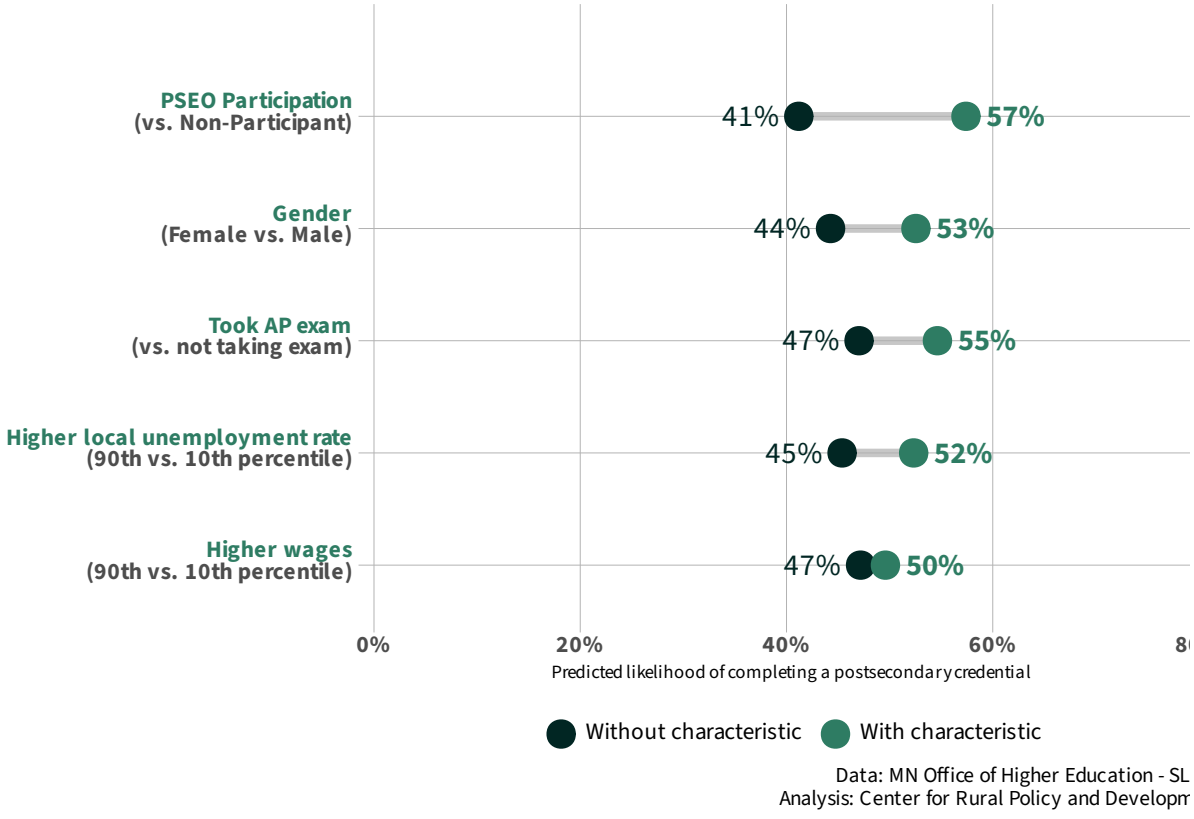
Local unemployment. Graduates from districts with higher local unemployment were more likely to complete a postsecondary credential than otherwise similar graduates from districts with lower unemployment. This may seem counterintuitive, but in areas with fewer immediate job opportunities, a postsecondary credential may feel like a more necessary path forward. The data can't confirm that this is the mechanism in any individual case, but the association held up after accounting for every other characteristic in the model.

Higher local wages. Graduates from districts with higher local wages were somewhat more likely to complete a postsecondary credential than those from lower-wage districts. The gap was the smallest of any characteristic in Figure 6, but it held up independently.

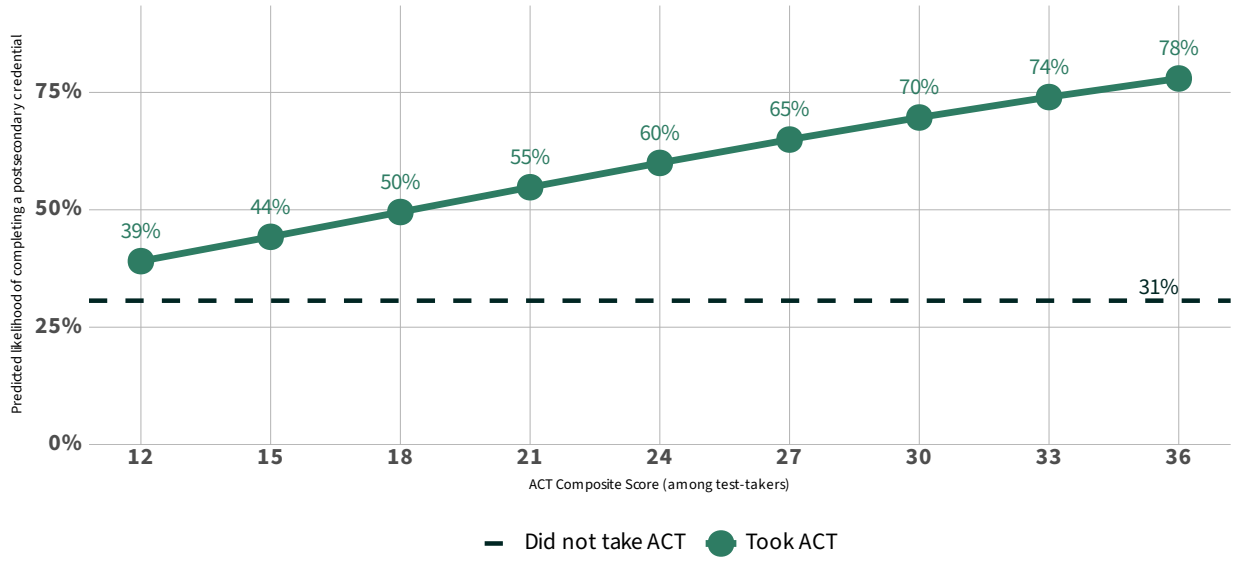
Figure 6 translates all these factors into a direct, apples-to-apples comparison. Each pair of dots shows the predicted likelihood of completing a postsecondary credential for two otherwise-similar graduates — one with the characteristic in question, one without it. PSEO participation showed by far the largest gap, followed by gender, with female graduates more likely

Figure 6: Predicted likelihood of completing a postsecondary credential, comparing otherwise similar graduates with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDS

Each characteristic was associated with a higher predicted likelihood of earning a postsecondary credential, after accounting for other differences between graduates.



Simply taking the ACT is associated with a real completion advantage; among test-takers, higher scores are associated with a substantially greater likelihood still.



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Figure 7: Predicted likelihood of completing a postsecondary credential, by ACT participation and composite score; 31% indicates the percentage of non-test takers who completed a postsecondary program. Data: Minnesota Office of Higher Education, SLEDS

to complete than male graduates. Taking an AP exam and coming from a district with higher local unemployment each added a moderate boost.

Local wages showed a smaller but still independent association, with graduates from higher-wage districts slightly more likely to complete a postsecondary credential.

Taking the ACT. Academic preparation, measured as ACT test performance, was one of the strongest characteristics associated with completing postsecondary education. Unlike the other factors on this list, though, it isn't a simple yes/no comparison. While simply taking the test is associated with a real advantage, there is also an added layer in that the score matters more the higher it goes. Rather than a fixed boost, the likelihood of completing a postsecondary credential rose steadily as ACT scores increased.

Simply taking the ACT is associated with a substantial jump in the likelihood of postsecondary completion (Figure 7). Compared to otherwise similar graduates who didn't take the ACT, test-takers were more likely to complete a postsecondary program at every score, and the likelihood climbed steadily as scores rose. The highest scorers had more than double the predicted completion rate of graduates who never took the test at all.

ACT engagement is a relationship that builds continuously, meaning *the size of the association between taking the ACT and completing a postsecondary*

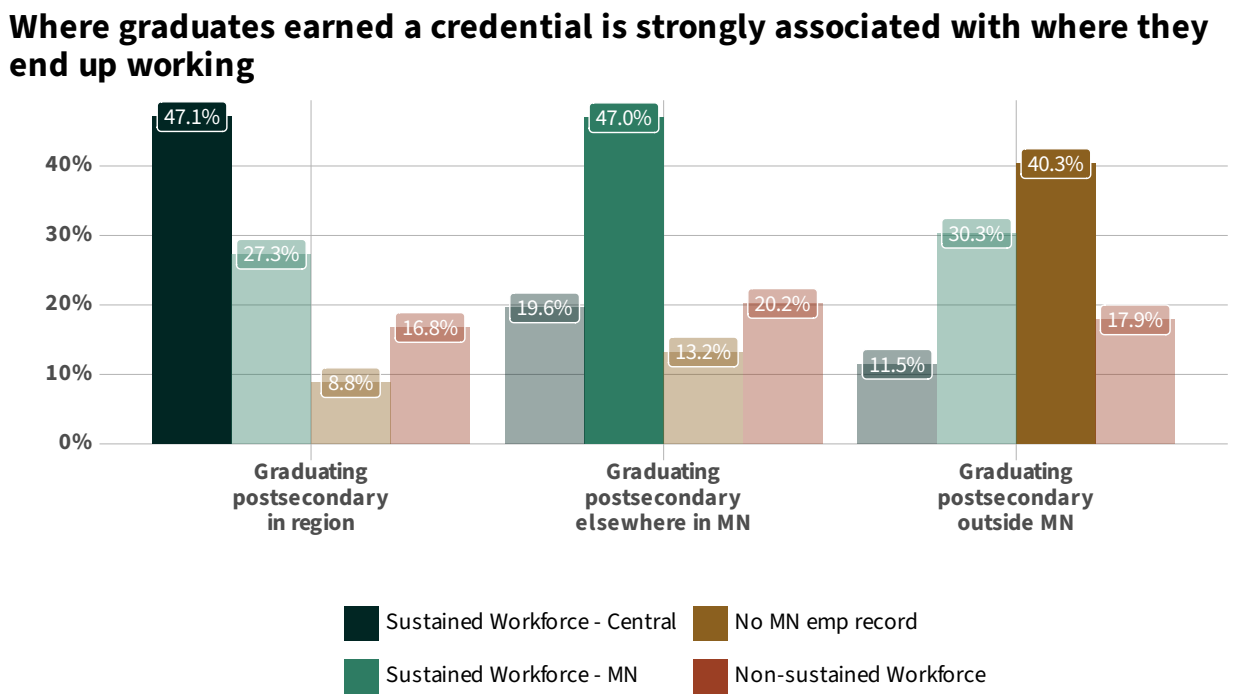
program depends entirely on a student's score. A student who takes the ACT and scores a 15 sees a modest boost in the likelihood they will complete a postsecondary program compared to not testing at all; a student who scores a 30 sees a boost in likelihood about three times as large. Both are real, and both point in the same direction — toward completing a postsecondary program and becoming established in sustained employment.

None of these factors depended on another—each one held up on its own, even after accounting for every other factor in the model. A female graduate who participated in PSEO, took an AP exam, and attended school in a district with higher local unemployment isn't just benefiting from one of these factors. The data suggests these effects compound, each adding its own independent boost.

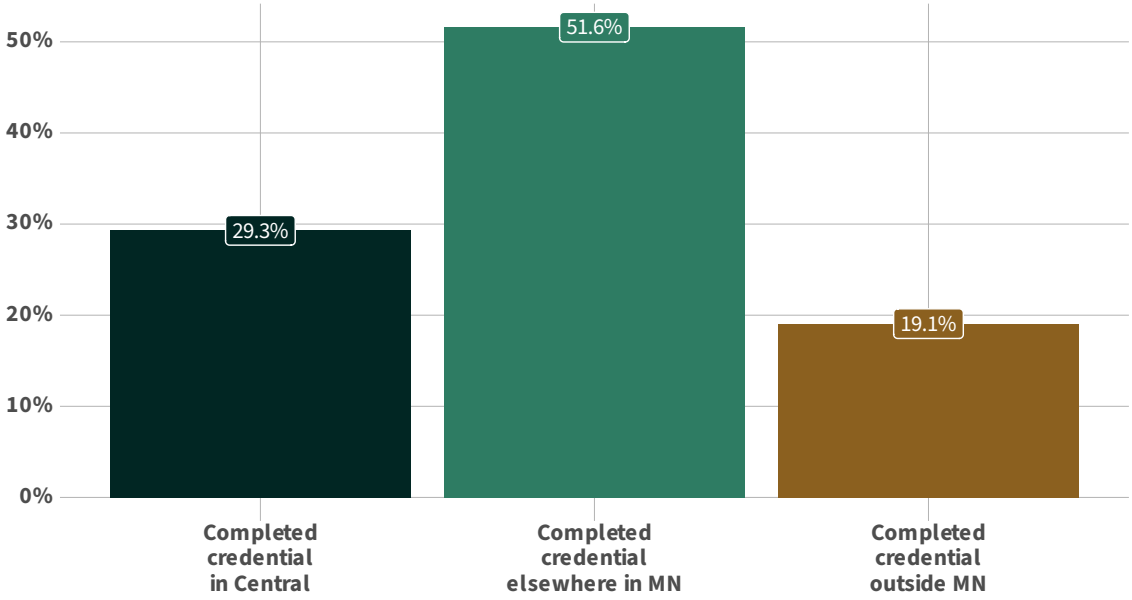
Where Do Credential Earners Establish Their Careers?

Among those who earned a credential, the data revealed another powerful pattern with implications for Central Minnesota's ability to retain the talent it produces: *Where a graduate completed college was strongly associated with where they ended up working.* This wasn't a complete surprise. Research has demonstrated for years that people tend to stay where they earned their postsecondary credential. This knowledge is important for workforce developers and employers who are looking to bolster their region's labor force ranks.

Figure 8: Where an individual participated in the workforce five years after high school is strongly associated with where individuals complete college. Data: Minnesota Office of Higher Education, SLEDS



Less than a third of Central credential earners earned their credential in the region



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Figure 9: Fewer than a third of credential earners completed their postsecondary credential at institutions within the Central region. Data: Minnesota Office of Higher Education, SLEDS

Figure 8 illustrates the strong alignment between where a credential earner earned their degree and where they ended up working. Nearly half of those who graduated from a college in the Central region went on to have sustained workforce participation in the region, and nearly half of those who graduated from a college elsewhere in Minnesota had sustained workforce participation in the state but outside the region. Those who graduated from a college outside Minnesota rarely returned to work in the region; the largest share had no Minnesota employment record, indicating that they were most likely working in another state.

That alignment works against Central Minnesota, because fewer than a third of its credential earners completed their postsecondary program in the region, while just over half completed elsewhere in Minnesota (Figure 9). Since graduates who completed elsewhere in Minnesota mostly went on to work elsewhere in Minnesota, this goes a long way toward explaining why Central's credential earners were more likely to have sustained employment outside the region than inside it.

One common narrative about rural areas holds that two-year career and technical degrees keep graduates local, while four-year degrees send them off to bigger cities. This would suggest that credential type — an associate's degree versus a bachelor's — should shape where graduates end up working. The data, however, showed this was only partly true.

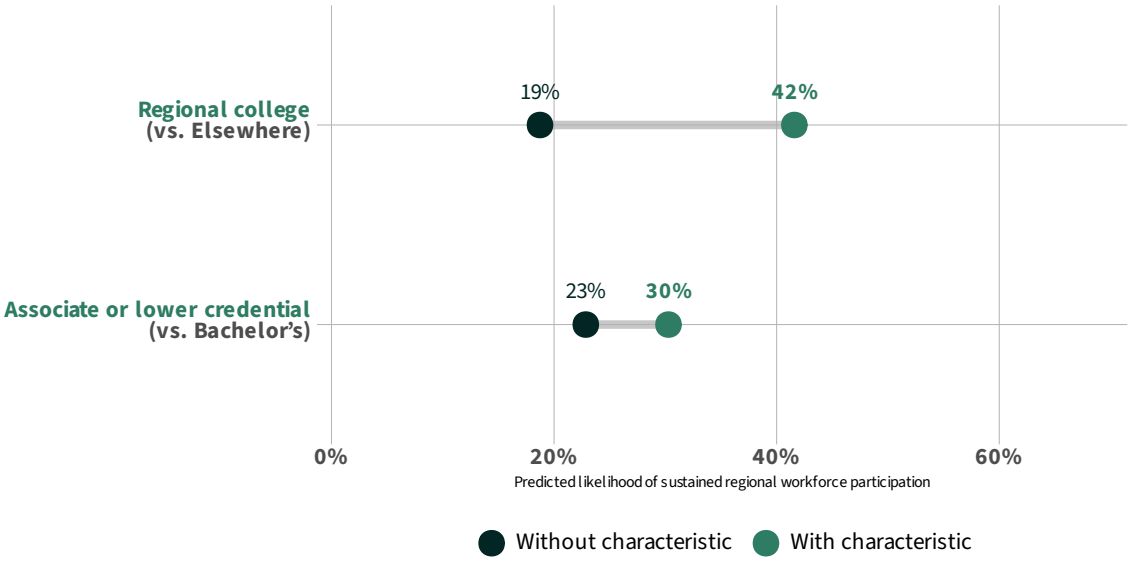
Once graduation location was accounted for, the credential type's relationship with regional workforce participation weakened considerably but didn't disappear: graduates with an associate degree or less were modestly more likely than otherwise similar bachelor's degree holders to have sustained regional workforce participation (Figure 10). That gap was much smaller than the one graduation location produced. Graduates who completed their credential regionally were more than twice as likely to have sustained regional participation as those who completed elsewhere, reinforcing that where students completed their credentials mattered far more than what credential they earned.

What factors shaped whether students completed their postsecondary programs in the region or somewhere else?

Many of the same factors indicating that a student would complete their postsecondary program also indicated *where* they would complete their program. Using the same approach as before — examining each characteristic's relationship to college location while accounting for every other characteristic at the same time — several factors emerged as

Figure 10: Predicted likelihood of sustained regional workforce participation five years after high school, by graduation location and credential level, among postsecondary completers. Data: Minnesota Office of Higher Education, SLEDS

Graduation location shows a much larger relationship with regional workforce participation than credential level, though credential level still adds a real, independent effect.



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Table 1: Characteristics associated with graduating from a regional college versus a college outside the region, among postsecondary credential earners. Data: Minnesota Office of Higher Education, SLEDS

More Likely to Complete a Postsecondary Program within the Region	More Likely to Complete a Postsecondary Program Outside the Region
EDR 7W school districts. Graduates from districts in EDR 7W were more likely to complete their credential regionally than graduates from districts in EDR 5, the largest gap on this side of the table.	Higher local wages. Graduates from districts with higher local wages were much less likely to complete their credential regionally, the largest gap in this analysis.
Black identity. Black graduates were more likely to complete their credential within the region than White graduates.	EDR 7E school districts. Graduates from districts in EDR 7E were less likely to complete their credential regionally than graduates from districts in EDR 5.
English learner status. English learners were more likely to complete their credential regionally than non-English learners.	Hispanic identity. Hispanic graduates were less likely to complete their credential within the region than White graduates.
Economic disadvantage. Graduates who qualified for free or reduced-price lunch were more likely to complete their credential regionally.	Taking the SAT. Students who took the SAT were less likely to complete their credential regionally, by the same margin as Hispanic graduates.
PSEO participation. PSEO participants were slightly more likely to complete their credential regionally, the smallest gap in this analysis.	AP exam participation. Students who took an AP exam were less likely to complete their credential regionally.

independently associated with whether a credential earner graduated from a regional institution or somewhere outside the region (Table 1).

Figure 11 shows how far each characteristic moves a credential earner's predicted likelihood of graduating in the Central region. For each pair, the direction from the dark dot to the green dot shows which way the characteristic points: rightward toward staying regional, leftward toward moving away. Where in the region a graduate went to high school stood out: graduates of districts in EDR 7W (Benton, Sherburne, Stearns and Wright counties) were more likely to complete their credential in the region than graduates of districts in EDR 5 (Cass, Crow Wing, Morrison, Todd and Wadena counties), while graduates of districts in EDR 7E (Chisago, Isanti, Kanabec, Mille Lacs and Pine counties) were only half as likely. Higher local wages showed the largest pull of any characteristic toward completing outside the region. Black identity, English learner status, economic disadvantage and PSEO participation pointed toward staying regional, the last three only modestly, while Hispanic identity, taking the SAT and taking an AP exam pointed toward completing elsewhere.

ACT engagement isn't included in the chart above because, as in the completion section earlier, it isn't a simple yes-or-no comparison. It's a relationship that builds continuously with score, but in this case it runs in the opposite direction (Figure 12).

Among otherwise similar completers, test-takers with low scores were more likely than those who never took the ACT to complete their postsecondary program in the Central region. From there, the likelihood dropped with

A mix of demographic, academic, and geographic characteristics are each independently associated with earning a postsecondary credential regionally or elsewhere

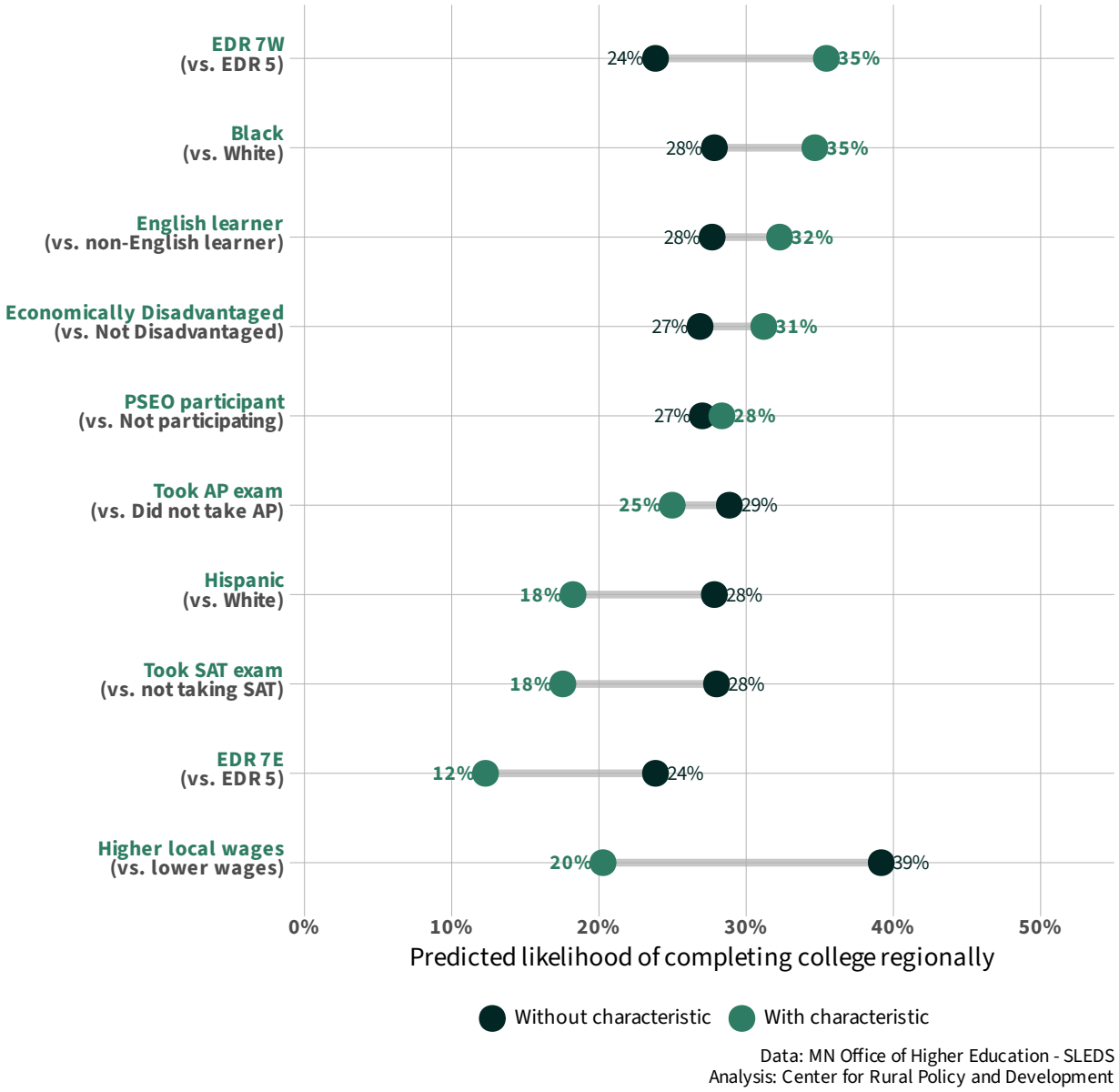


Figure 11: Predicted likelihood of completing a postsecondary credential regionally, comparing otherwise similar completers with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDS

Simply taking the ACT is associated with a pull toward staying regional; among test-takers, higher scores are associated with completing somewhere else instead.

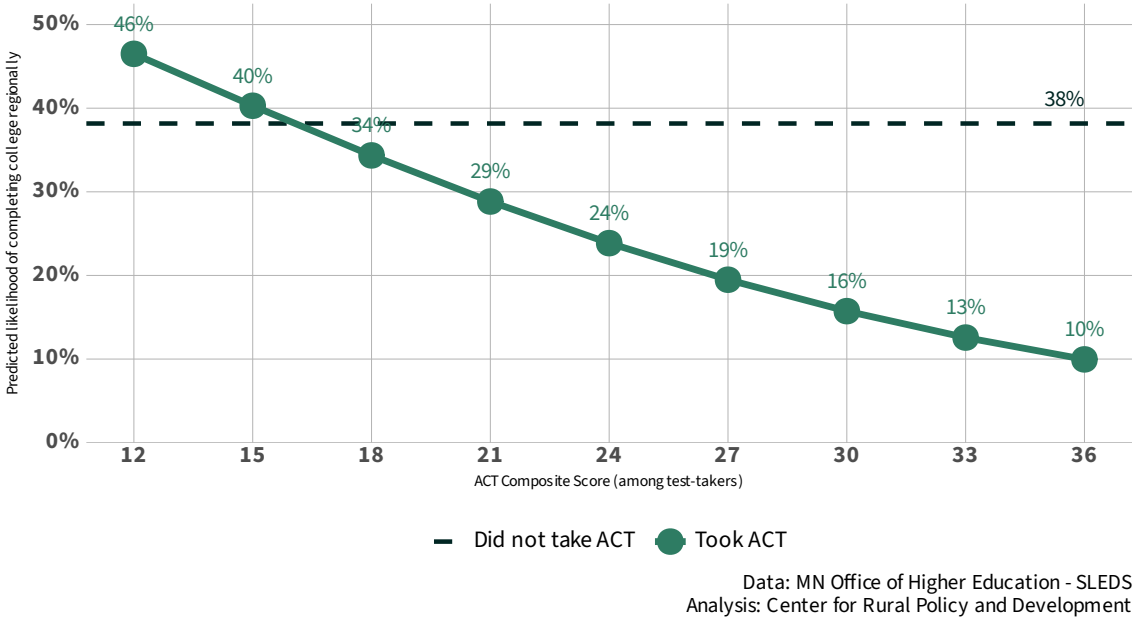


Figure 12: Predicted likelihood of completing college regionally, by ACT participation and composite score. Data: Minnesota Office of Higher Education, SLEDS

every additional point, falling below the level for non-test-takers at around a score of 16; the highest scorers were the least likely of anyone to complete regionally.

In other words, taking the ACT and scoring modestly is associated with *more* regional attachment than not testing at all — but scoring well on it is associated with substantially *less* regional attachment. The crossover point, right around 16, is a useful marker: below that score, ACT engagement reads as a local-commitment signal; above it, it reads as a launching pad toward opportunities elsewhere.

What does this mean for Central Minnesota?

The Credential Earners' Pathway shows a clear pattern for Central Minnesota. Just under half of high school graduates completed a postsecondary credential, and those who did were significantly more likely to have ongoing sustained workforce participation, but that advantage showed up almost entirely as employment elsewhere in Minnesota rather than in the region. Among credential earners, *where* the degree was earned had far more of an impact on where that person eventually settled down for their career than what degree was earned, and fewer than a third of Central's credential earners completed their program in the region. Credential type still added a smaller, independent pull of its own: sub-baccalaureate completers were somewhat more likely than bachelor's completers to end up working in the region, but that gap was modest next to the much larger gap between graduating regionally and graduating anywhere else.

Academic preparation's relationship to staying local isn't as simple as "the most prepared students leave." Taking the ACT and scoring modestly leaned regional; it was specifically strong scores — along with AP and SAT participation — that predicted leaving. Attending school in EDR 7W, Black identity, English learner status, economic disadvantage and PSEO participation all pointed toward completing in the region. Higher local wages, attending school in EDR 7E, and Hispanic identity pointed toward completing elsewhere, with local wages showing the largest gap of any characteristic.

Pathway 2: The Workforce-First Pathway

The Workforce-First Pathway is the story of those Central Minnesota high school graduates who did not complete a postsecondary credential but still went on to find sustained workforce participation, either in the Central region or elsewhere in Minnesota. These are the high school graduates who entered the workforce directly without completing a postsecondary program.

What distinguishes the non-credential earners on this pathway who did establish stable, sustained regional workforce participation from those who did not? In Central Minnesota, the answer is different from the other regions we examined. **Where in the region a graduate went to high school had the strongest relationship with sustained regional employment, largely because of the Twin Cities' pull on the eastern part of the region. CTE was still associated with sustained regional employment, as it was elsewhere, but it does not overcome that pull.**

Nearly half of non-credential earners had sustained workforce participation five years after high school, and their group was split almost evenly between employers in the region and employers elsewhere in Minnesota (Figure 14). That even split stands out next to credential earners in Pathway 1, who were considerably more likely to be working outside the region than in it.

52% of high school graduates between the years 2008 and 2019 did not earn a credential after high school by 2023.

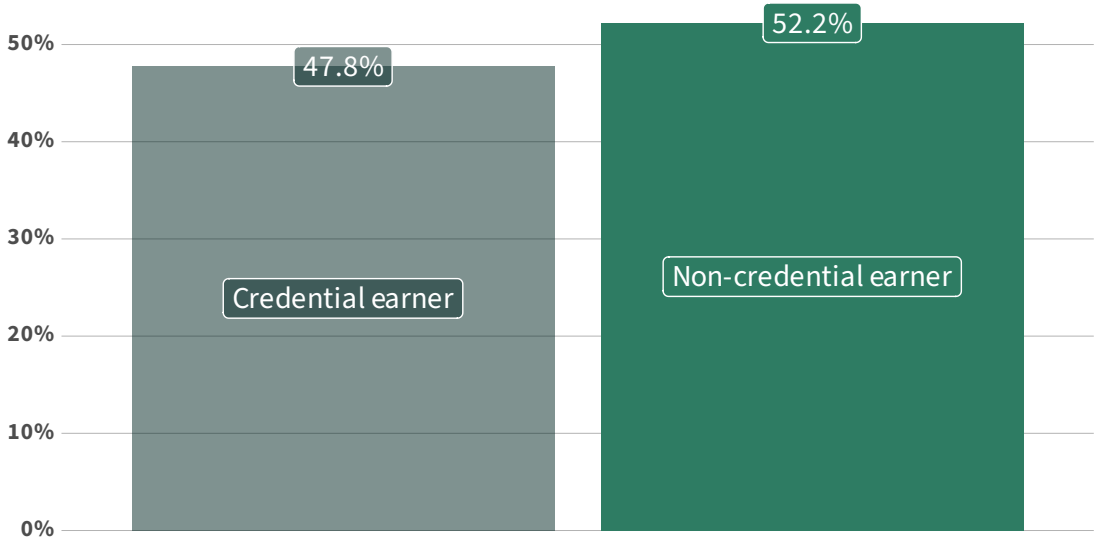
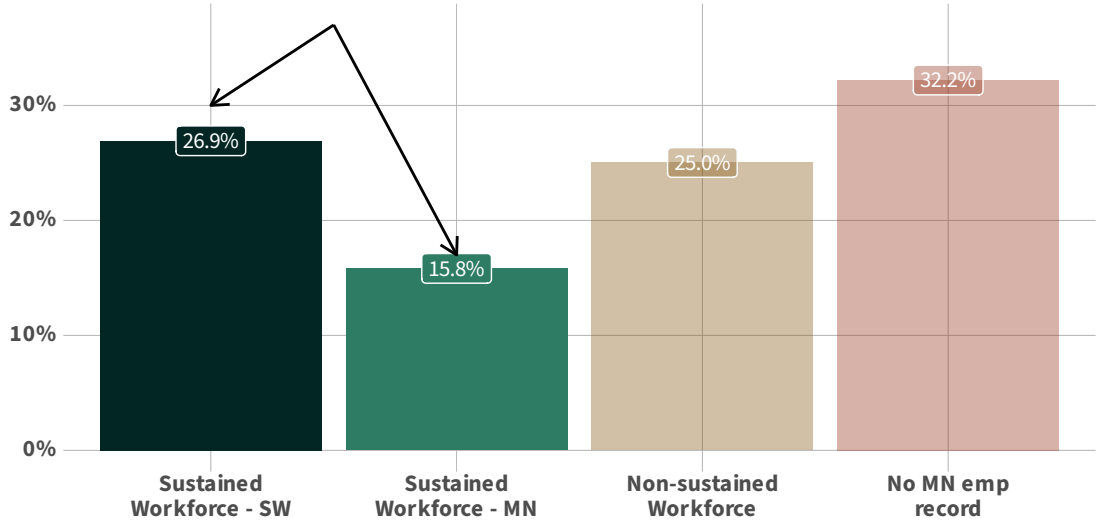


Figure 13: Just over half (52%) of 2008 to 2019 high school graduates in Central Minnesota did not earn a postsecondary credential by 2023. Data: Minnesota Office of Higher Education, SLEDS

Data: MN Office of Higher Education
Analysis: Center for Rural Policy and Development

Just over a quarter of non-credential earners had sustained workforce participation in the region and another 16% outside the region but within Minnesota.



Data: MN Office of Higher Education
Analysis: Center for Rural Policy and Development

Figure 14: Nearly half of non-credential earners (48%) had sustained workforce participation five years after high school, 26% in the region and 22% elsewhere in Minnesota. Data: Minnesota Office of Higher Education, SLEDS

Understanding the characteristics associated with whether non-credential earners ended up in sustained workforce participation in the region could contribute significantly to future policy and programming aimed at helping more Central Minnesota students build careers close to home.

This section walks through this pathway in two parts:

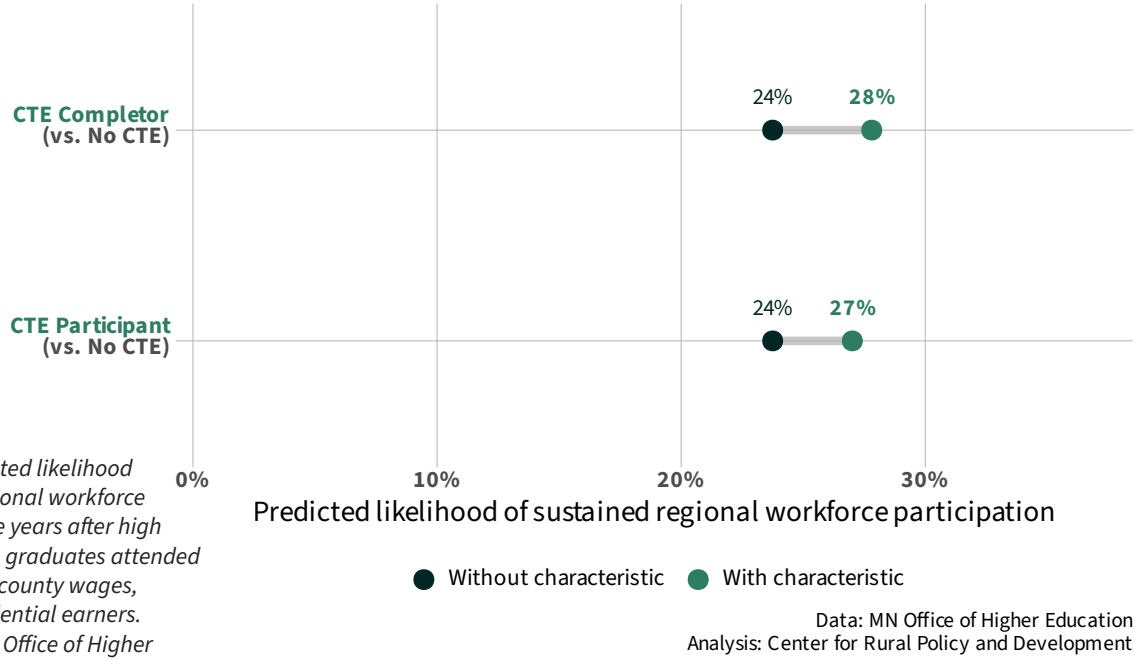
- Where in the region graduates went to high school, and where they ended up working; and
- CTE's relationship with sustained regional employment.

Where a graduate went to high school mattered most

Among non-credential earners in the Central region, the characteristics with the strongest relationship to sustained regional employment had to do with where in the region a graduate went to high school (Figure 15). Compared to otherwise similar graduates from EDR 5 (Cass, Crow Wing, Morrison, Todd and Wadena counties), graduates of districts in EDR 7W (Benton, Sherburne, Stearns and Wright counties) were somewhat more likely to have sustained regional employment five years after high school, while graduates of districts in EDR 7E (Chisago, Isanti, Kanabec, Mille Lacs and Pine counties) were about a third less likely. The gap between graduates from the highest- and lowest-wage counties was the largest of the three.

These differences are not about whether graduates found steady work. Non-credential earners from EDR 7E and from higher-wage counties were

Engagement in CTE was strongly associated with sustained regional employment.



Data: MN Office of Higher Education
Analysis: Center for Rural Policy and Development

Figure 15: Predicted likelihood of sustained regional workforce participation five years after high school, by where graduates attended high school and county wages, among non-credential earners. Data: Minnesota Office of Higher Education, SLEDS

just as likely as their peers to have sustained employment somewhere in Minnesota; they were much less likely to have it in the Central region.

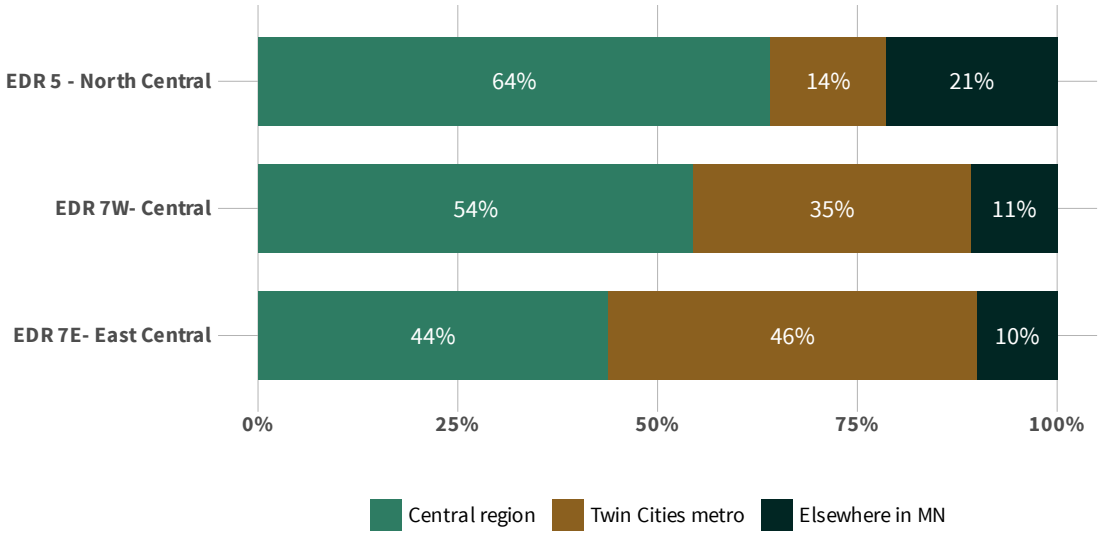
The same factors pointed the same direction for credential earners in Pathway 1: EDR 7W graduates were more likely to complete their credential in the region, while EDR 7E graduates and those from higher-wage districts were more likely to complete it elsewhere. For both pathways, where a graduate's home community was within the region was closely tied to whether they stayed.

Where these graduates end up working

Employer locations show why. Most EDR 5 graduates with steady jobs worked in the Central region, but EDR 7E graduates with steady jobs were slightly more likely to be working in the Twin Cities metro (Figure 16). When graduates from EDR 7E or EDR 7W did work outside the region, it was overwhelmingly in the metro, about three in four or more. EDR 5 graduates who left the region were more spread out, with West Central Minnesota a common destination alongside the metro.

EDR 7W borders the metro too, but it keeps more of its graduates, most likely because of St. Cloud, the region's largest job center. Almost all EDR 7W graduates who worked in the region did so in EDR 7W; it also drew between a fifth and a quarter of the in-region workers from EDR 5 and EDR 7E.

Nearly half of EDR 7E's non-credential earners with steady jobs worked in the Twin Cities metro.



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Figuxre 16: Where non-credential earners with sustained workforce participation five years after high school were employed, by the economic development region where they attended high school. Data: Minnesota Office of Higher Education, SLEDS

CTE: Still an anchor to the region

In the other regions we examined, CTE was the strongest and most consistent factor tied to sustained regional employment for non-credential earners. In Central Minnesota, geography plays a larger role, but CTE still matters. Non-credential earners who completed a full CTE sequence, becoming what's known as a "concentrator," and those with lighter CTE participation were both more likely than otherwise similar peers with no CTE involvement to have sustained regional employment five years after high school (Figure 17). The boost is smaller than the geographic gaps described above.

CTE was also associated with more steady employment outside the region, but more than half of the added employment tied to CTE was in the Central region.

Where CTE graduates work, however, depends on where they went to high school (Figure 18). In EDR 7E, CTE concentrators with steady jobs were more likely than their peers to be working in the Twin Cities, about half of them. In EDR 7W and EDR 5, the pattern ran the other way, with CTE concentrators less likely than their peers to work in the metro. CTE is associated with staying in the region overall, but it does not overcome the metro's pull on the eastern part of the region. The data shows where these graduates work, not whether their jobs use their CTE training.

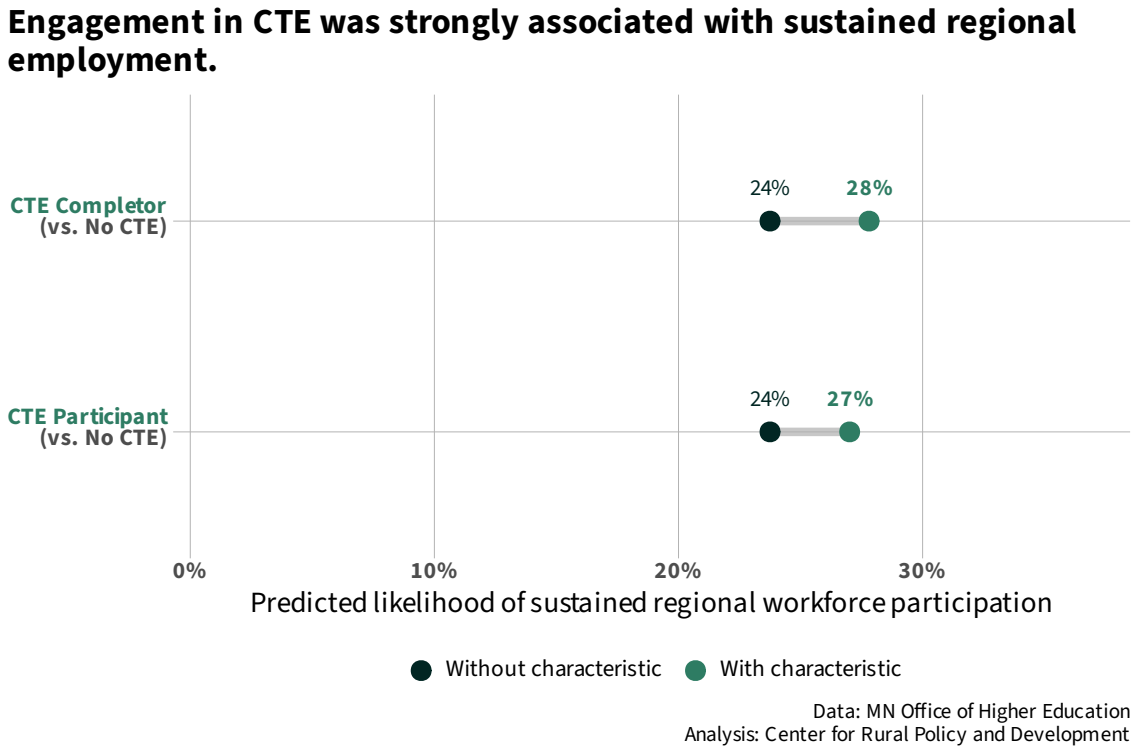


Figure 17: Predicted likelihood among non-credential earners of sustained regional workforce participation five years after high school by level of CTE engagement. Data: Minnesota Office of Higher Education, SLEDS

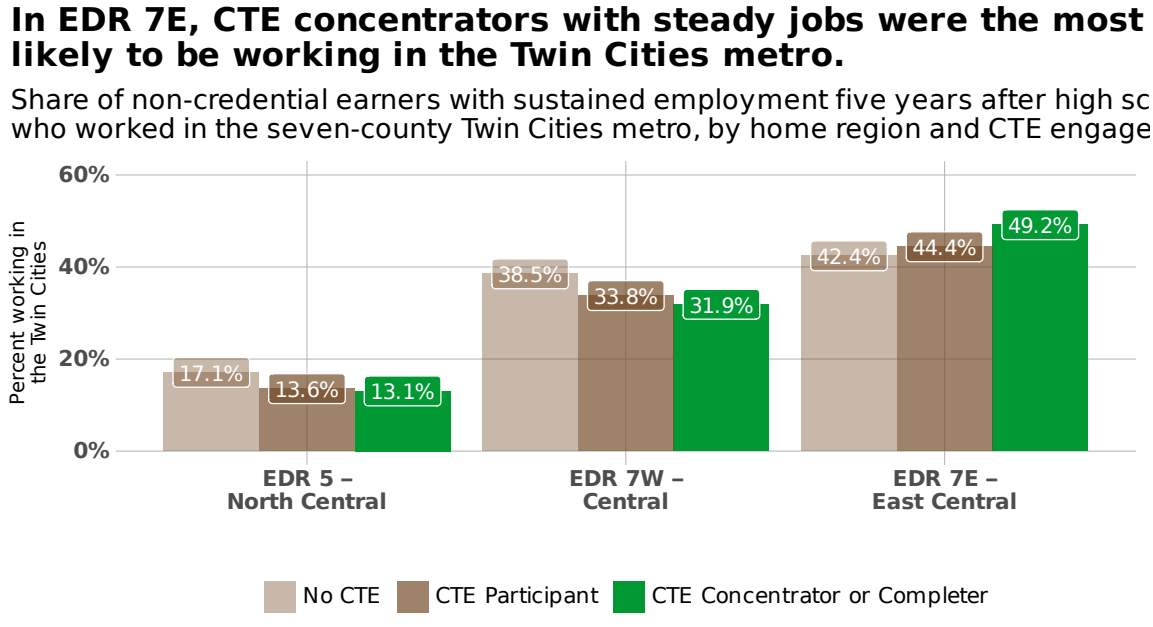


Figure 18: Share of non-credential earners with sustained workforce participation five years after high school who worked in the seven-county Twin Cities metro, by home region and CTE engagement. Data: Minnesota Office of Higher Education, SLEDS

What works for the Workforce-First pathway in Central Minnesota?

Taken together, where in the region a graduate went to high school is the strongest factor for this pathway. Graduates from EDR 7E and from higher-wage counties were as likely as anyone to find steady work, but often outside the region, and for EDR 7E that work was overwhelmingly in the Twin Cities. EDR 7W, anchored by St. Cloud, kept more of its graduates despite also bordering the metro.

CTE remains a regional anchor in Central Minnesota, as it was in other regions, but it does not overcome the metro's pull on the eastern part of the region, where about half of CTE concentrators with steady jobs work in the Twin Cities. For regional planners and employers, that makes this pathway as much a question of retention as of preparation: the region's schools are producing steadily employed workers, and the question is whether local employers can compete for them.

Pathway 3: The Disconnected Pathway

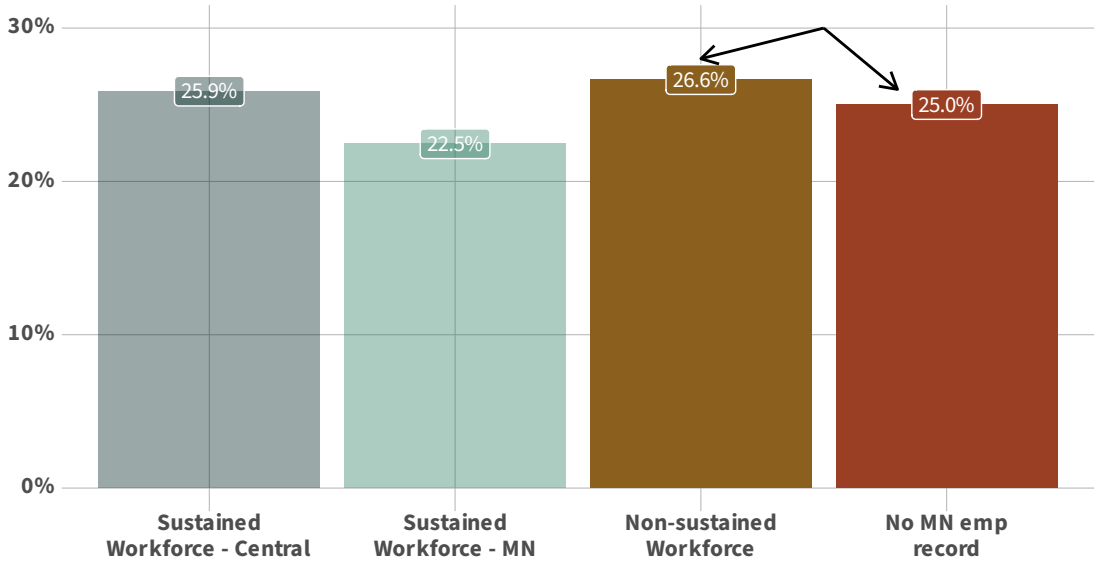
Apart from those non-credential earners who ended up on the Workforce-First Pathway because of their sustained workforce participation, there is another sizable group of non-credential earners who do not. These are the individuals who find themselves on the Disconnected Pathway. The analysis revealed why this group tends to be disconnected from the workforce, what disconnection actually looks like, and why it often persists rather than resolve on its own.

Disconnected Pathway

High school graduates → Non-college completers → Non-sustained workforce participation *or* no Minnesota employment record

Five years after high school, nearly half (48%) of non-credential earners were on the Workforce-First Pathway, with sustained workforce participation in either the Central region or elsewhere in Minnesota (Figure 19). The remaining 52% were split almost evenly between those in non-sustained workforce participation, meaning that in a given year they were working less than 1,000 hours and/or for more than one employer, and those with no Minnesota employment record. This group is on the third pathway that emerged: the Disconnected Pathway.

Over 50% of non-credential earners had non-sustained workforce participation or no Minnesota employment record.



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Figure 19: A large percentage of non-credential earners either had no Minnesota employment record or non-sustained workforce participation five years after exiting formal education. Data: Minnesota Office of Higher Education, SLEDS

Those individuals on this pathway were either not engaging fully with the local or state workforce (non-sustained workforce participation) or out of the local or state workforce completely (no Minnesota employment record). Moreover, for many in this group, that disconnection did not resolve on its own. This group was persistently disconnected from the labor force across the years. A handful did reconnect and move into the sustained workforce participation group, but for most, weak workforce attachment was not a temporary early-career condition—it was a *trajectory.*

This group is important because they represent a substantial pool of individuals who, for a variety of reasons, are not engaging fully with the local workforce (or even the state workforce) but could be if given the right mix of interventions before and after high school graduation. Perhaps one of the most important findings about this group was that the factors characterizing them made them almost easy to identify while still in K-12 and therefore ready for help if they wanted it.

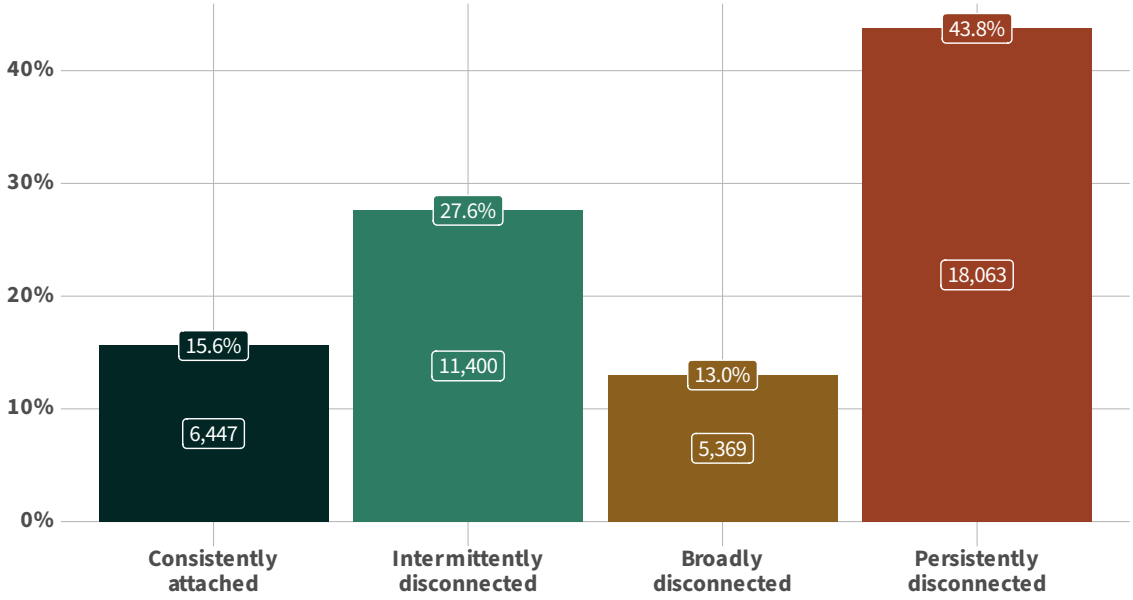
It is worth a brief reminder of what "no Minnesota employment record" means in this context since it can reflect very different circumstances depending on the population being examined. As discussed earlier, for credential earners—particularly those who graduated from institutions outside the region or outside the state—the data showed that no Minnesota employment record often reflected graduation from an out-of-state postsecondary institution, followed by out-of-state employment. Central

Minnesota has only one stretch where this is likely to matter much: its eastern edge, where Chisago and Pine counties sit across the St. Croix River from Wisconsin. Minnesota's tuition reciprocity agreement with Wisconsin makes Wisconsin colleges an affordable option, and a graduate working in Wisconsin looks identical in this data to one who moved across the country, because Minnesota's employment records can't see across the state line. The rest of the region borders other parts of Minnesota, including the Twin Cities metro, where employment does show up in state records.

That border dynamic matters less when interpreting "no Minnesota employment record" among non-credential earners. Regional labor market data from the U.S. Census Bureau provide a useful benchmark: among Central Minnesota adults whose highest level of education is a high school diploma, 23.4% are not in the labor force. This study's observed rate among non-credential earners is 25.0%, slightly above that benchmark. In other words, the share of non-credential earners with no Minnesota employment record is close to, if a bit higher than, what the region's broader labor force patterns would predict. Part of that small gap may reflect work the data can't see. Some non-credential earners from the eastern part of the region may be working across the St. Croix River in Wisconsin. Others may work for themselves: Minnesota's employment records are based on employer-reported wages, so an individual working as a self-employed contractor or running their own small business would not appear in this data, regardless of location. That is not a trivial group in Central Minnesota, where about one in ten employed residents is self-employed and there are about 22 nonemployer businesses (those with no paid employees) for every 100 payroll jobs. Military service and federal employment, which are also absent from state wage records, account for about 2% of the region's employed residents. These could plausibly account for the small gap above the benchmark, but not for the no-record group as a whole, so on balance, the data suggest that for Central Minnesota non-credential earners, "no Minnesota employment record" largely reflects genuine disconnection from the workforce rather than employment the data simply can't see.[1]

1 Note on the source of the 23.4% benchmark: This figure is the share of Central Minnesota adults ages 25 to 64 whose highest level of education is a high school diploma (including equivalency) who are not in the labor force, summed across the 14 counties of Economic Development Regions 5, 7E and 7W (Benton, Cass, Chisago, Crow Wing, Isanti, Kanabec, Mille Lacs, Morrison, Pine, Sherburne, Stearns, Todd, Wadena and Wright; 25,471 of 108,639; margin of error ±0.8 percentage points), from the U.S. Census Bureau, American Community Survey 2020–2024 5-Year Estimates, Table B23006. The comparison is approximate. The ACS measures current residents of the region rather than everyone who graduated from its high schools, covers a broader age range than the graduates examined here, and measures labor force participation rather than the presence of a Minnesota employment record. In addition, some non-credential earners attended college without completing a credential; adults in the region with some college or an associate's degree have a lower non-participation rate (14.2%), so the true benchmark for this group may be somewhat below

Weak workforce connection often persists among non-credential earners



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Figure 20: The distribution of non-credential earners by how persistently disconnected they were from the workforce in the first five years after leaving formal education. Data: Minnesota Office of Higher Education, SLEDS

Persistence of disconnection

To determine *how* disconnected from the workforce each person in the group was, we tracked their workforce participation status across the first five years after leaving formal education. For individuals who never attended postsecondary education, this meant the five years immediately following high school graduation. For those who attended college or other postsecondary program but did not complete a credential, this meant the five years after they stopped attending. Individuals were then grouped by the degree of disconnection:

- **Consistently Attached to the workforce:** Disconnected in 0 of the first 5 years. In other words, they had consistently sustained workforce participation for five of the first five years.
- **Intermittently Disconnected:** Disconnected in 1-2 of the first 5 years

23.4%, and the observed rate may sit further above it. Neither cross-border employment in Wisconsin nor self-employment can be observed in Minnesota's employer-reported wage records, so the exact share of the no-record group they account for cannot be determined from this data alone. Self-employment is the share of civilian employed residents who are self-employed in incorporated or unincorporated businesses, from the American Community Survey 2020–2024 5-Year Estimates, Table B24080. Nonemployer businesses are from the U.S. Census Bureau's 2023 Nonemployer Statistics, and payroll jobs from 2023 County Business Patterns; military and federal employment are from the American Community Survey 2020–2024 5-Year Estimates, Tables B23025 and B24080.

- **Broadly Disconnected:** Disconnected in 3 of the first 5 years
- **Persistently Disconnected:** Disconnected in 4-5 of the first 5 years

Understanding the degree of disconnection was a necessary step toward identifying where targeted intervention before and after high school graduation could make a substantial difference in the individuals' lives and for the region's workforce.

The results showed that more than four in ten non-credential earners were disconnected four to five of the first five years after leaving formal education, by far the largest group, while only about one in six was consistently attached across all five years (Figure 20). Most concerningly, the findings showed that for many of the people on this pathway, disconnection early on did not resolve itself; instead, it persisted.

Two Kinds of Disconnection

Within the Disconnected Pathway, **non-sustained workforce participation** means someone *is working,* just not steadily enough to meet the threshold of a sustained workforce participant. Think part-time, seasonal, or frequently interrupted work. **No Minnesota employment record** means there is no evidence the person worked in the state at all that year; it could mean they moved out of state for work, they left the workforce to be a stay-

Figure 21: The share of non-credential earners in non-sustained employment shrinks steadily in the five years after leaving formal education, while the group with no Minnesota employment record keeps climbing, passing non-sustained employment by Year 5. Data: Minnesota Office of Higher Education, SLEDS

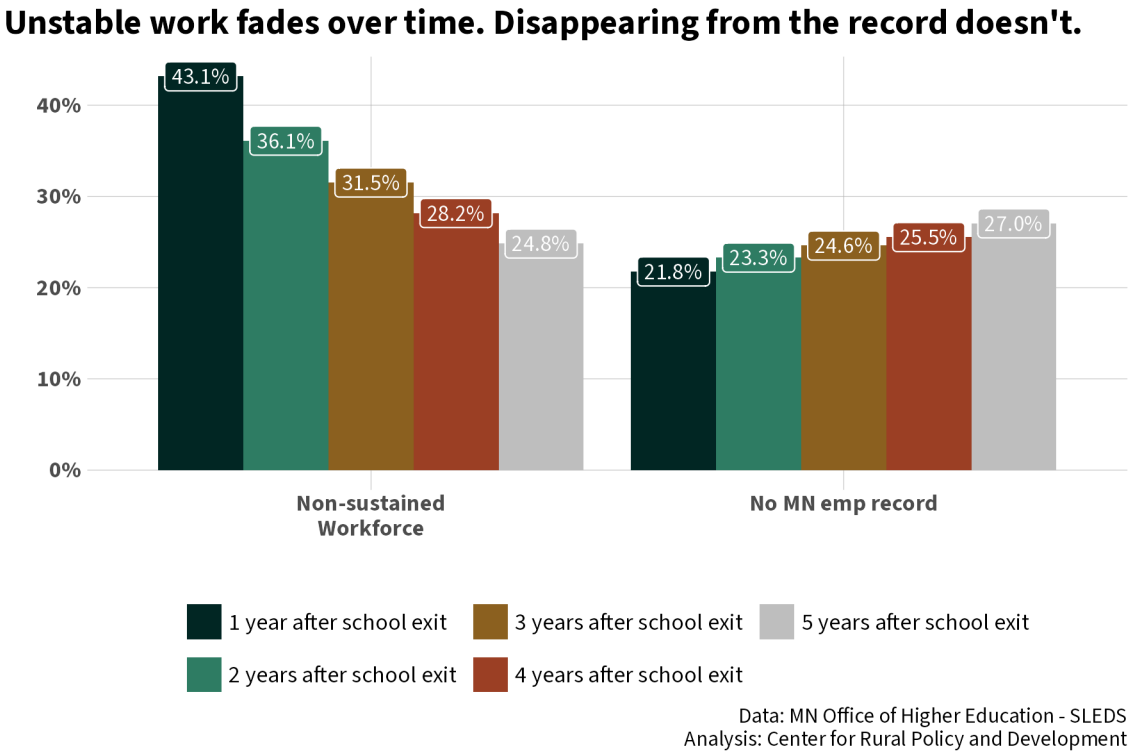


Table 2: Characteristics associated with higher odds of persistent instability versus persistent no-record status among non-credential earners. Data: Minnesota Office of Higher Education, SLEDS

Associated with Higher Odds of Persistent Unsustained Workforce Participation	Associated with Higher Odds of Persistent No-Record Status
Black identity. The largest gap on this side of the table, a strong, independent risk for instability specifically.	**Non-English-speaking home.** The largest gap in either model, even though it was linked to lower instability risk.
Female gender. A real, independent risk factor for instability specifically.	**Taking the SAT.** A large, independent risk, nearly identical in size to the non-English-speaking home finding.
Special education status. A real, independent risk, and the only characteristic with a confirmed risk on both sides of this table.	**American Indian, Asian/Pacific Islander and Hispanic identity.** Real, independent risks of similar size.
EDR 7E school districts. A modest but real independent risk compared with EDR 5.	**English learner status.** A modest but real independent risk.
Economic disadvantage. A modest independent risk, notable because economic disadvantage was linked to lower odds of no-record status.	**Special education status.** A small but real risk, and also elevated for instability.

at-home parent, got a federal job, joined the military or started their own business. The data alone can't always tell the difference.

These two situations don't just look different—they behave differently by moving in opposite directions over time (Figure 21). Non-sustained employment is the more common experience early on, but the group shrinks year after year as people either find sustained workforce participation or shift into the no-Minnesota-employment-record group.

Having no Minnesota employment record behaves the opposite way. Fewer people experience it in year 1, but for those who do, it tends to stick. Instead of shrinking over time like non-sustained workforce participation does, it grows year over year.

Who is Most at Risk of Disconnection?

Within the analysis, the data revealed a set of demographic, academic, and geographic characteristics associated with a higher likelihood of ending up on the Disconnected Pathway. Understanding who faces these risks is the first step toward knowing where support is needed most.

Besides being in either the non-sustained workforce participation category or the no Minnesota employment record category, individuals in the dataset also carried with them their own unique mix of social, economic and demographic characteristics. We tested each of these characteristics to see if any of them, on their own, might influence which pathway a person might end up on. To take the analysis one step further, we asked: For each characteristic examined, is the elevated risk showing up as unstable employment, as no Minnesota employment record, as both or as neither?

Several characteristics (Table 2) in fact showed elevated risk on one side

Several demographics are independently associated with a higher risk of persistent instability



Figure 22: Predicted likelihood of persistent non-sustained employment, comparing otherwise similar non-credential earners with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDS

Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

but not the other — an individual's demographic profile can point toward a real risk of unstable employment while showing no relationship at all to disappearing from the record, or vice versa. Only special education status showed an independently confirmed, elevated risk for both outcomes.

Persistent unsustained workforce participation

The five characteristics in the left column of the table stood out as independently linked to persistent unsustained workforce participation, but the size of their effects varied (Figure 22). Black identity showed the strongest association by a wide margin: when all other factors were held constant, Black graduates were about 1.7 times as likely as otherwise similar White graduates to be persistently in unstable work. Female graduates and graduates with a special education designation each faced a noticeably higher likelihood than their counterparts, while graduates from EDR 7E school districts and economically disadvantaged graduates showed smaller but still real gaps. Even at the modest end, none of these gaps disappear once all other factors are accounted for; each one is an independent, standalone contributor to an individual's risk of persistent instability.

The same characteristics associated with elevated disconnection risk are also associated with lower odds of completing a postsecondary credential.

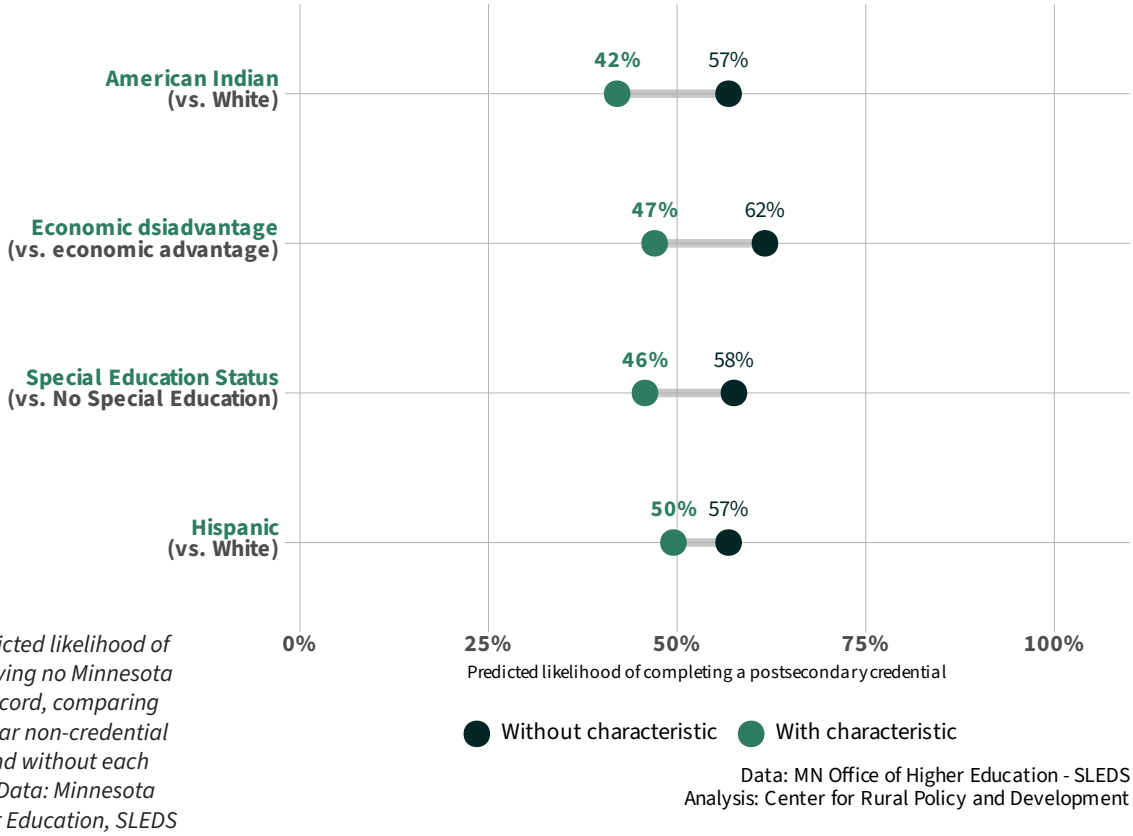


Figure 23: Predicted likelihood of persistently having no Minnesota employment record, comparing otherwise similar non-credential earners with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDS

Persistent No Minnesota Employment Record

On the other side of the table, how much does each characteristic contribute to someone's odds of persistently disappearing from Minnesota's employment records?

Graduates from homes where a language other than English is spoken showed the largest gap of the group (Figure 23): their likelihood of persistently having no Minnesota employment record was nearly twice that of otherwise similar graduates from English-speaking homes. Graduates who took the SAT showed a nearly identical gap, possibly reflecting plans that took them out of state. American Indian, Asian/Pacific Islander and Hispanic graduates each showed a smaller, similar-sized gap compared with otherwise similar White graduates, and English learner status and special education status round out the list with the smallest effects.

One More Factor: ACT Engagement

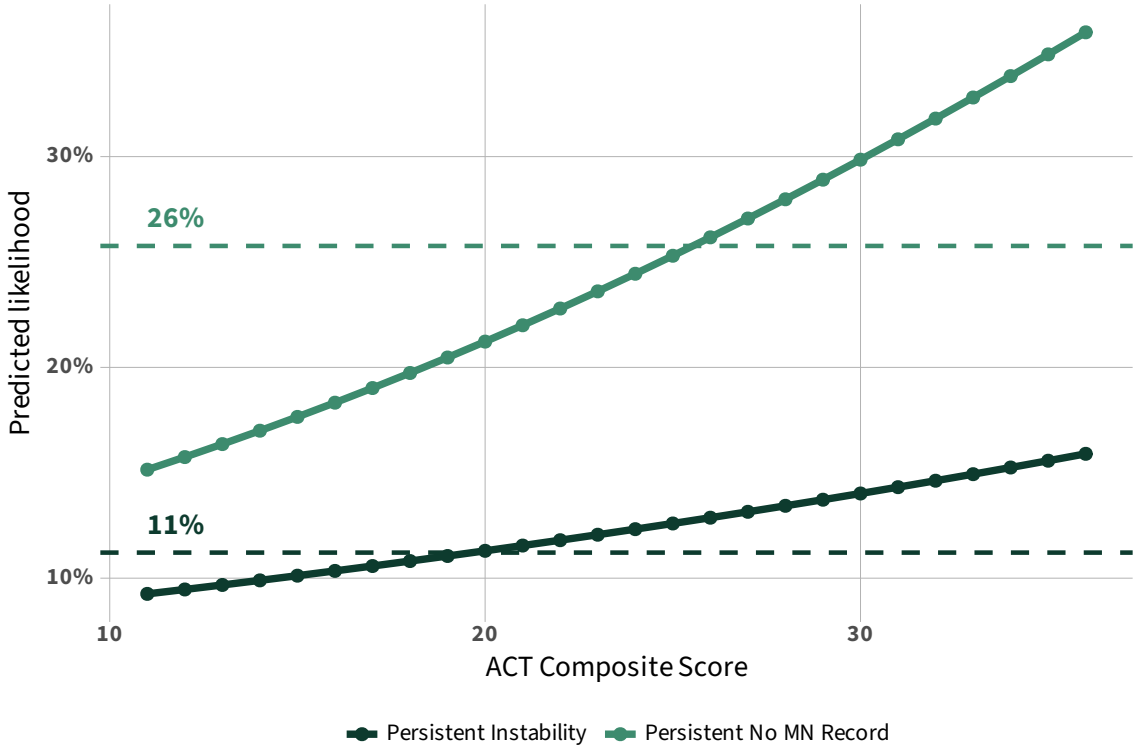
ACT engagement — whether someone took the ACT or not — is an anomaly in that its correlation to the risk of being disconnected isn't a simple yes/no

like the other characteristics. Whether it increases or decreases a person's risk of ending up disconnected depends first on whether an individual took the test, then on what score they received.

Compared with otherwise similar non-credential earners who never took the test, test-takers with lower scores had lower risk of both persistent instability and persistent no-record status. That advantage did not hold across the full range of scores, though.

Among students who did take the ACT, a higher score was associated with increased risk of both outcomes (Figure 24). For persistent instability, test-takers with low scores had a lower predicted risk than non-takers, but that risk rose steadily with each additional point and passed the non-taker level at around a score of 20. Predicted risk of persistent no-record status rose more steeply, passing the non-taker level at around a score of 26, and the highest scorers were more than twice as likely as the lowest scorers to persistently have no Minnesota employment record. The two outcomes move together in parallel, suggesting that whatever is driving this pattern

Among ACT test-takers, higher composite scores are independently associated with greater odds of both persistent non-sustained employment and persistent no Minnesota employment record.



Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

Figure 24: Predicted likelihood of persistent unsustained workforce participation and persistent no-record status across ACT composite scores at the Year 5 mark, compared to the predicted likelihood for otherwise similar non-credential earners who did not take the ACT (dashed lines). Data: Minnesota Office of Higher Education, SLED

The same characteristics associated with elevated disconnection risk are also associated with lower odds of completing a postsecondary credential.

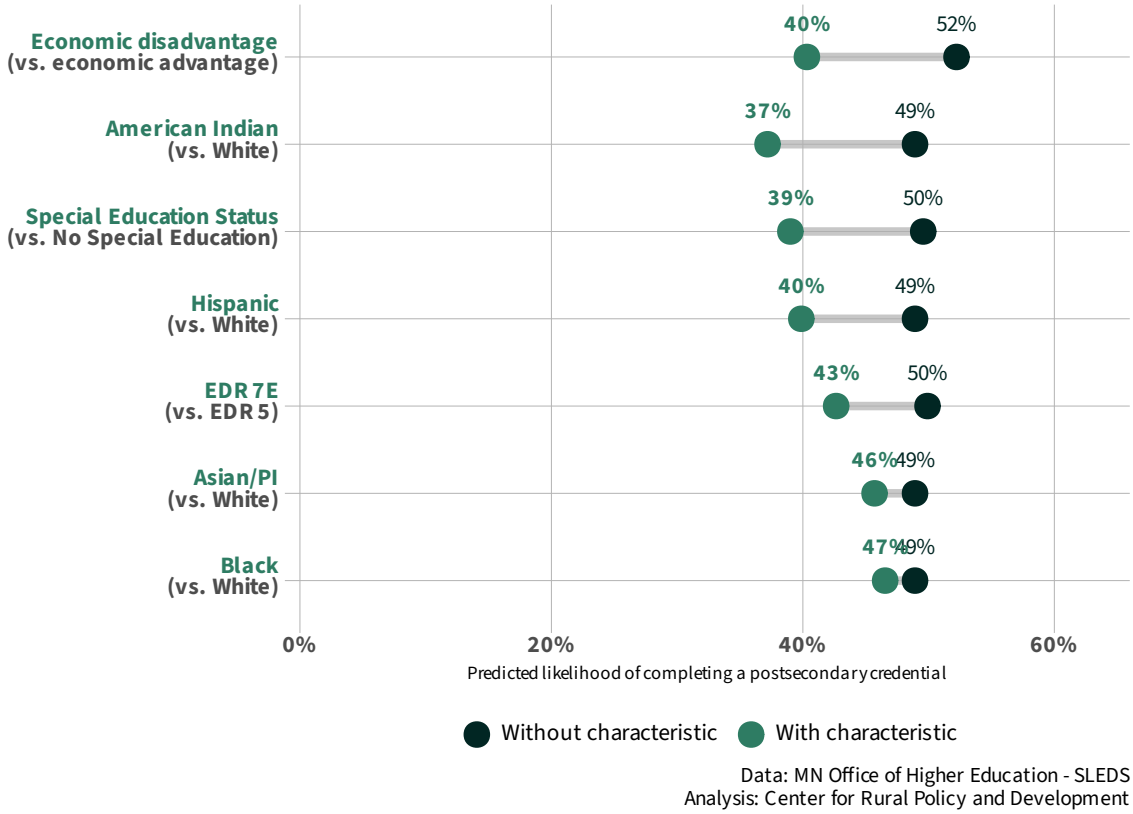


Figure 25: Among all high school graduates, predicted likelihood of earning a credential, comparing otherwise similar individuals with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDS

isn't specific to one type of disconnection. It reflects a broader relationship between stronger academic performance and reduced regional attachment that shows up consistently across outcomes. The data were clear on this phenomenon but could not reveal why it happens. It may reflect something about the pathway that leads a well-prepared student to not complete a credential in the first place.

Disparities Compound Across the Pipeline

The demographic characteristics identified in this pathway are not unique to non-credential earners. Several of the same characteristics associated with elevated disconnection risk here were also associated with a lower likelihood of completing a postsecondary credential in the first place.

American Indian, Hispanic and Asian/Pacific Islander graduates, graduates with a special education designation, and graduates from EDR 7E school districts all showed this pattern (Figure 25). American Indian graduates and graduates with a special education designation showed the largest gaps

among them, each more than 10 points below otherwise similar peers, followed by Hispanic graduates and graduates from EDR 7E; the gap for Asian/Pacific Islander graduates was smaller. Black graduates showed only a small completion gap, but as noted above, they faced the largest risk of persistent instability. Special education status stands out as the only characteristic in this analysis associated with elevated risk at every stage examined: lower odds of completion and elevated odds of both persistent unsustained workforce participation and persistent no-record status.

Economic disadvantage follows a different pattern. Among high school graduates in total, eligibility for free or reduced-price lunch was tied for the largest completion gap of any characteristic (Figure 25). Among non-credential earners, economic disadvantage was also linked to a modestly higher risk of persistent unsustained workforce participation, but it was associated with lower odds of a persistent no Minnesota employment record status.

Taken together, these findings suggest that disparities along the pathway don't operate as separate, one-time barriers. They compound. A graduate with one of these characteristics is less likely to complete a postsecondary credential, but in not completing one, they join the group where the same characteristic is again associated with a higher likelihood of disconnection from the workforce. The effect is cumulative: two gaps stacked on the same students, each independent of the other and each still present after accounting for everything else the model measures. This is especially relevant for special education status, which was associated with elevated risk at every stage and is identified in school records long before graduation. The students most likely to face disadvantages at both stages are, in other words, already known to the K–12 system, which makes high school a practical point to reach them at before the gaps widen further.

What Offers Protection Against Disconnection?

Protections Against Persistent Instability

Among the many characteristics examined, three showed a confirmed, independent protective relationship against persistent instability: attending postsecondary education, even without completing it; CTE engagement; and growing up in a home where a language other than English is spoken (Figure 26).

Individuals who attended some form of postsecondary education, even without finishing, had a noticeably lower likelihood of persistent unsustained workforce participation than otherwise similar graduates who never attended, and graduates from non-English-speaking homes showed a similar-sized advantage. CTE concentrators and, to a lesser degree, CTE participants were also less likely than otherwise similar peers with no CTE involvement to be persistently in unstable work. The postsecondary finding makes intuitive sense. Even a partial postsecondary experience often comes with structured routines, career counseling, and connections to employers

Attending postsecondary education, being engaged in CTE, and having a non-english speaker at home were all independently associated with lower persistent instability risk

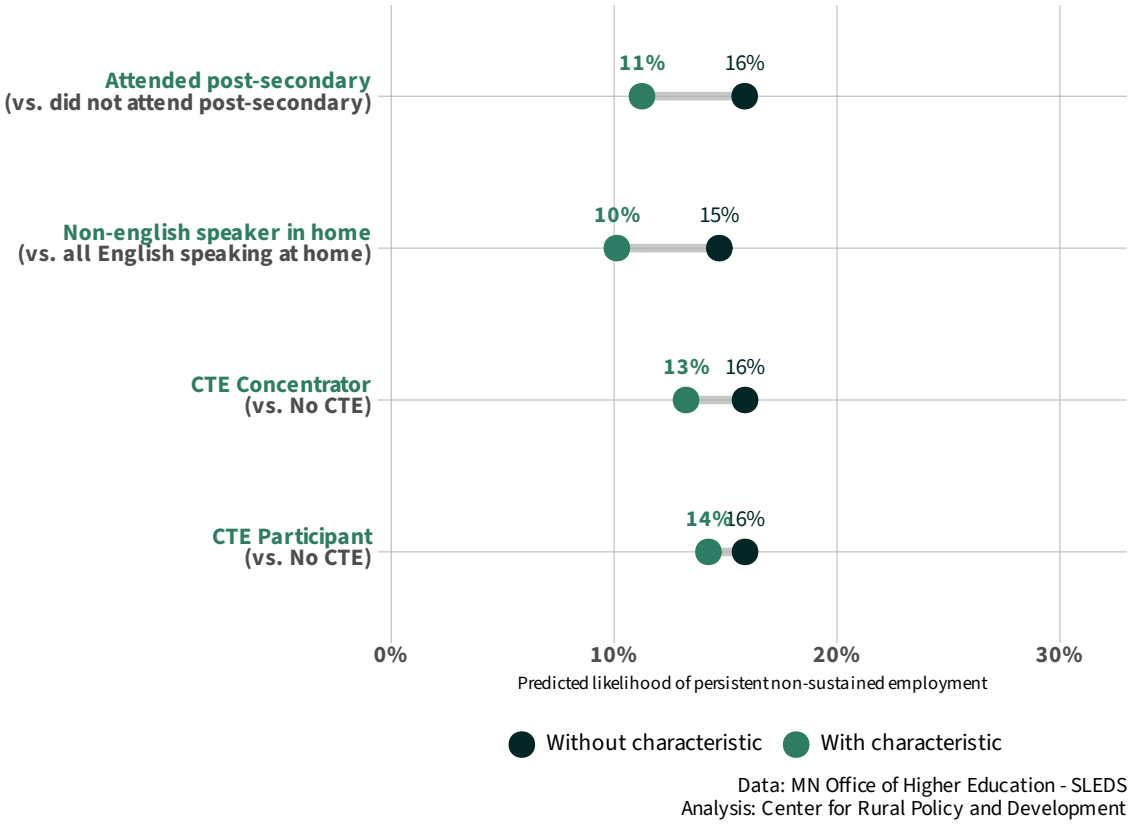


Figure 26: Predicted likelihood of persistent non-sustained employment, comparing otherwise similar non-credential earners with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDS

that a graduate heading straight into the workforce may never encounter. It may also reflect something more basic: the kind of planning and follow-through it takes to enroll in the first place tends to carry over into a steadier transition into work, whether or not the credential itself was ever finished.

The finding for graduates from non-English-speaking homes is more complicated than it first appears. They were less likely to have persistent workforce instability, but, as discussed earlier, they were also the most likely to persistently have no Minnesota employment record. Rather than a consistently positive or negative pattern, this group's outcomes point in different directions: those who remain in Minnesota's formal workforce appear more likely to find steady footing, even as the group as a whole is more likely to disappear from the state's records.

Protections Against Persistent No MN Employment Record

While persistent instability showed three confirmed protective factors for non-postsecondary credential earners, no Minnesota employment record had several (Figure 27).

CTE engagement showed the largest effect: CTE concentrators and participants were both considerably less likely than otherwise similar graduates with no CTE involvement to persistently have no Minnesota employment record. Combined with its protective relationship against persistent instability, this demonstrates once again that CTE engagement tends to keep graduates connected to Minnesota's workforce, and on steadier footing within it.

Attending college, even without completing a credential, showed a comparable effect. Along with CTE engagement, it is one of only two characteristics associated with lower risk of both forms of disconnection. Graduates from EDR 7W school districts and economically disadvantaged graduates also had lower odds than their counterparts, and graduates from EDR 7E showed a smaller effect of its own.

A Local Opportunity

This distinction between non-sustained workforce participation and no Minnesota employment record matters. Because individuals with no Minnesota employment record have no employment data on file, we can't say anything about where they might be working. But for the unsustained-workforce-participation group, we can understand where they are and what they're doing, and that turns out to be a genuinely useful, actionable finding.

It turns out that, of the disconnected group in non-sustained workforce participation, about six in ten (61%) were working in Central Minnesota, while the rest were working elsewhere in the state (Figure 28).

On the surface, the share of non-postsecondary credential earners with no Minnesota employment record might signal that graduates are leaving the region for better opportunities or that the region simply doesn't have enough jobs. But that isn't the whole story: most non-postsecondary credential earners in unsustained workforce participation are already here, working in Central Minnesota — just not at a level that reflects sustained workforce participation (working 1,000+ hours for the same employer in a particular year). These locally employed but potentially underutilized workers represent a meaningful opportunity, one that may be better addressed through strategies focused on job quality, advancement pathways, and retention rather than recruitment alone.

Key Insights and Implications

Finishing college is one of the strongest signs that a graduate will find steady work, and where they go to school matters more than what degree they earn. Graduates who finished any kind of postsecondary program were much more likely to have steady jobs, and those who finished that program in the region were far more likely to still be working there five years later, whether they earned a two-year or four-year degree. But fewer than a third of Central Minnesota's credential earners finished their program in the region, and those who finished elsewhere in Minnesota mostly stayed there to work. As a result, the employment advantage that came with a credential showed up mostly as jobs outside the region. How strong and accessible the region's own colleges are may matter more for keeping talent local than the type of degree those colleges offer.

Where in the region a student goes to high school shapes whether they stay. Graduates from EDR 7E school districts in the eastern part of the region and those from higher-wage counties were less likely to earn a credential in the region and, among those who didn't earn one, less likely to have steady work in the region, even though they were just as likely as anyone to have steady work somewhere in Minnesota. For the eastern counties, that work is overwhelmingly in the Twin Cities. EDR 7W also borders the metro but kept more of its graduates, most likely because of St. Cloud. For Central Minnesota, keeping young workers is as much about competing with the metro labor market as it is about preparing them.

The tests students take and how they score say a lot about where they're headed. Taking the ACT and scoring modestly was tied to earning a credential in the region and, among students who didn't finish college, lower risk of both unstable work and falling off Minnesota's employment records. Strong scores pointed the other way: higher-scoring test-takers were more likely to complete a credential outside the region and, among those who didn't finish, more likely to end up disconnected. Taking the SAT pointed outward at both stages, toward finishing a credential outside the region and, among those who didn't finish, toward persistently having no Minnesota employment record, and taking an AP exam also pointed toward finishing elsewhere. None of these tests explains why students leave or stay, but together they suggest that by the end of high school, many students have already signaled which way they're leaning, something educators should be able to *see*.

Career and Technical Education is a consistent anchor to Minnesota's workforce, even if geography matters more for keeping workers in Central Minnesota. CTE was tied to:

- Steady regional employment among graduates who didn't earn a credential after high school;

- Lower odds of persistently unstable work; and
- Lower odds of falling off Minnesota's employment records for good.

No other high school experience points as consistently toward staying connected to — and visible in — Minnesota's workforce. In Central Minnesota, though, CTE does not overcome the pull of the Twin Cities on the eastern part of the region: in EDR 7E, about half of CTE concentrators with steady jobs worked in the metro, more than their peers without CTE. Investing in strong, well-connected CTE programs may still be one of the best ways to improve outcomes for students heading straight into the workforce, but in the eastern counties, keeping those workers in the region also depends on local employers being able to compete for them.

For most groups, barriers pile up along the pipeline, but not for everyone, and not always in the same direction. Students with a special education designation were the only group associated with elevated risk at every stage we examined: lower odds of earning a postsecondary credential and higher odds of both persistently unstable work and persistently having no Minnesota employment record. American Indian and Hispanic students faced lower odds of earning a postsecondary credential and, among those who didn't, a higher risk of persistently having no Minnesota employment record. Black students showed only a small gap in earning a credential, but among those who didn't earn one, they faced the highest risk of any group of persistently unstable work. For these groups, these aren't separate problems showing up at different times; they're the same underlying issue showing up repeatedly across time.

Several findings break that pattern, though, and are worth calling out directly:

- **Black students point in two directions.** Among students who didn't earn a postsecondary credential, they faced the highest risk of any group of persistently unstable work. But among credential earners, Black graduates were more likely than White graduates to finish their credential in the region.
- **Economic hardship cuts both ways.** Students eligible for free or reduced-price lunch were tied for the largest gap in earning a postsecondary credential, and among those who didn't earn one, economic hardship was tied to a modestly higher risk of unstable work. But it was also tied to lower odds of falling off Minnesota's employment records and, among credential earners, to finishing in the region.
- **Students from non-English-speaking homes show a mixed pattern.** Among those who didn't earn a credential, they had the highest risk of any group of persistently having no Minnesota employment record, but they were less likely than otherwise similar peers to be stuck in unstable work. Relatedly, English learners who did earn a credential were more likely to finish it in the region.

- **Attending school in EDR 7E cuts both ways, too.** Graduates from EDR 7E were less likely to earn a postsecondary credential and, among those who didn't, somewhat more likely to be in unstable work, but they were less likely than EDR 5 graduates to fall off Minnesota's employment records, consistent with many of them working in the Twin Cities.

Disconnection isn't a single problem, and neither is disadvantage. These findings are a reminder that disadvantage doesn't operate in just one direction, and disconnection isn't a single problem with a single cause. The same characteristic can raise one kind of risk while lowering another, and a barrier at one stage of the pipeline doesn't automatically mean a barrier at every stage.

Some postsecondary program exposure — even without finishing — helps on both fronts. Among students who didn't finish a postsecondary program, simply attending was tied to both a lower risk of unstable work and a lower risk of falling off Minnesota's employment records. That makes it one of only two characteristics in this analysis, along with CTE, associated with protection against both forms of long-term disconnection. It points to a real opportunity: helping more students access and stick with some college, even if they don't finish, may pay off for their long-term connection to work.

The disconnected are largely already here. Among students who didn't earn a credential, about 27% were employed but below the threshold for sustained workforce participation five years after high school. About six in ten of that group (61%) were working within Central Minnesota itself. That means much of the challenge isn't finding or attracting workers from outside the region. It's helping people who are already working here move into steadier, more substantial work.

In Central Minnesota, "no Minnesota employment record" mostly looks like genuine disconnection. The share of non-credential earners with no Minnesota employment record (25.0%) is slightly above what regional labor market data would predict (23.4%). Some share likely reflects graduates working across the St. Croix River in Wisconsin or working for themselves, but there is little sign that this is a large group the data simply can't see. That makes the no-record group in this region less a data artifact and more a real population, one that, given the characteristics identified here, could largely be identified while still in high school.

In closing

Central Minnesota's path from high school to the workforce isn't broken, but it isn't smooth and problem-free either. Graduates who earn a postsecondary credential in the region tend to build careers there, whether they earn a two-year or four-year degree, but fewer than a third do, and many more finish elsewhere in Minnesota and stay there to work. For those who go straight into the workforce, hands-on career training in high school is tied to steady local work, yet where a student grew up within the region

matters even more. In the eastern counties, the Twin Cities metro draws many of the region's steadily employed young workers. And for those who end up disconnected long-term, the barriers are structural, tend to build on each other for most (though not all) groups, and are easy to miss if you're only looking at one moment in time instead of the whole path.

This report doesn't solve these problems, but it does show where they're most concentrated, who's carrying the biggest burden, and where a closer look might make the biggest difference. That's the starting point for a better conversation about how Central Minnesota invests in its young people, and in the systems meant to carry them from school into work.

Appendix

Limitations

This analysis, like all research based on administrative data, has real limits worth stating plainly.

These findings describe patterns, not complete explanations. The characteristics discussed in this report explain some, but not all, of why graduates' paths differ. Many things that shape a person's life and career — family circumstances, personal choices, specific employers, health, and countless other factors — are not captured in this dataset. The percentages in this report reflect what these particular, measurable characteristics can predict on average. They are not a full accounting of any individual graduate's story, and they should not be read as a prediction about any specific person.

Some data does not fully capture what it appears to measure. For example, a "no Minnesota employment record" does not always mean someone is disconnected from the workforce — it can also reflect a graduate who moved out of state for work or school. We've noted these ambiguities directly wherever they affect how a finding should be interpreted.

A small number of characteristics we originally considered were excluded from this analysis due to data quality concerns. Most notably, we chose not to include Minnesota Comprehensive Assessment (MCA) proficiency scores as a factor in our models. We found that missing MCA scores were far more common among English language learner students than other students, and there was no reliable way to determine whether that pattern reflected something meaningful about a student's circumstances or simply a gap in how the data were recorded. Rather than risk drawing a conclusion from an unreliable measure, we excluded it from our analysis entirely.

Some findings are based on small numbers of individuals and should be treated with appropriate caution. Comparisons involving the region's smaller racial and ethnic groups, in particular, rest on relatively

few graduates, so the exact size of those gaps is less certain than for findings based on larger groups.

Methodology

Data and Population

This report draws on linked, anonymized administrative records provided by the State of Minnesota, combining three sources: high school records (courses, CTE participation, MCA and ACT scores, and demographic indicators), postsecondary records from Minnesota's public higher education systems and the National Student Clearinghouse (capturing both in-state and out-of-state enrollment and completion), and Minnesota employment records from the Department of Employment and Economic Development (DEED), which capture wages, hours, and employer attachment for work performed within Minnesota.

The analysis covers 137,622 individuals who graduated from high schools in Central Minnesota, defined as the 14 counties of Economic Development Regions 5, 7E and 7W, between 2008 and 2023. Individual analyses within the report sometimes restrict this population further depending on the question being asked (for example, models predicting outcomes five years after graduation exclude students who graduated too recently to have five years of data), and each figure's caption or surrounding text notes when a subset is being used.

Outcome Categories

Each graduate's status was assessed annually and assigned to one of five mutually exclusive categories: Sustained Workforce Participation–Central (1,000+ hours in a year with a single employer within the region), Sustained Workforce Participation–Minnesota (the same threshold, met elsewhere in the state), Non-sustained Workforce Participation (some Minnesota employment, but below the sustained threshold, and not enrolled in school), Attending Postsecondary, and No Minnesota Employment Record (no observed Minnesota employment or enrollment for that year). As discussed throughout the report, this last category is not synonymous with disconnection; it also captures out-of-state employment, military service, federal employment, and other circumstances Minnesota's records cannot observe.

Analytical Approach

The analysis proceeded in two stages for each research question. First, bivariate relationships — the association between a single characteristic and an outcome, considered on its own — were examined descriptively to identify candidate characteristics worth testing further. Second, characteristics that showed a bivariate relationship were tested together in multivariate logistic regression models, which estimate each characteristic's association with an outcome while holding all other characteristics in the model constant. This second step is what allows the report to describe a relationship as "independent" — meaning it held up even after accounting for a graduate's other measured characteristics, rather than simply reflecting overlap with some other factor (for example, a raw gap between two groups that actually stems from one group having higher rates of PSEO participation, rather than group membership itself).

A characteristic is described in this report as significantly associated with an outcome only if the relationship met a standard statistical threshold ($p < .05$) in these multivariate models, meaning

there is less than a 5% probability that a relationship of this size would appear by chance if no real relationship existed. Characteristics that did not meet this threshold are not reported as findings, even where an earlier bivariate relationship appeared to exist.

Reading "Predicted Likelihood" Figures

Many figures in this report show a "predicted likelihood" for two groups — a graduate with a given characteristic and an otherwise similar graduate without it. These are not raw, observed rates. They are model-based estimates, generated by holding a characteristic at each of its two values in turn (for example, Gender = Female, then Gender = Male) while leaving every other characteristic in the model at each individual's actual recorded value, then averaging the resulting predictions across the full population. This approach — sometimes called average marginal prediction or marginal standardization — produces a like-for-like comparison: the difference between the two predicted values reflects the association of that one characteristic alone, net of everything else the model accounts for, rather than a raw gap that might be driven by differences in the two groups' other characteristics.

For two continuous characteristics examined in this report — local wages and local unemployment rate — "predicted likelihood" comparisons use the 10th and 90th percentile of that measure across the region's school districts, rather than an all-or-nothing comparison, to avoid a small number of extreme districts driving the result.

Tracking Persistence Over Time

For the Disconnected Pathway specifically, graduates who did not complete a postsecondary credential were tracked across the first five years following their exit from formal education (high school for those who never attended college; the point of leaving college for those who attended without completing). Based on how many of those five years a graduate spent disconnected — in either non-sustained employment or with no Minnesota employment record — graduates were grouped into four categories: Consistently Attached (disconnected in 0 of 5 years), Intermittently Disconnected (1–2 years), Broadly Disconnected (3 years), and Persistently Disconnected (4–5 years). This categorization made it possible to distinguish a temporary post-graduation adjustment period from a longer-term pattern.

A Note on Association, Not Causation

Every relationship described in this report is an association, not a demonstrated cause. The characteristics examined here are not the only things that shape a graduate's path — family circumstances, individual choices, specific local employers, health, and countless other factors that this dataset cannot capture all play a role. A relationship holding up across multiple statistical controls increases confidence that it reflects something real and not merely a coincidence of overlapping characteristics, but it does not establish that changing one characteristic would, on its own, change a graduate's outcome.