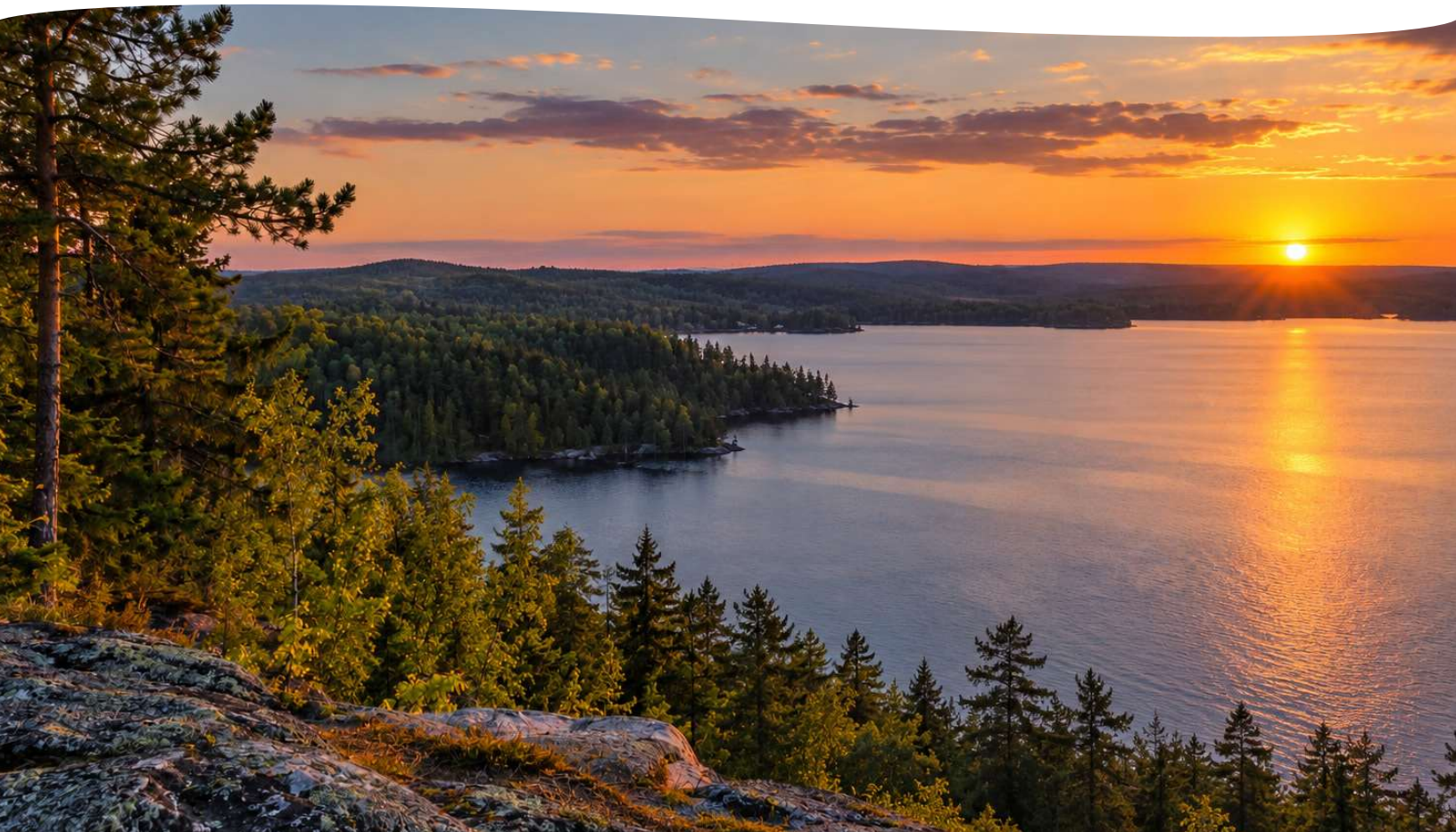


Pathways After High School in Northwest Minnesota

Understanding Where Graduates
Go After High School

SEPTEMBER 2026



Pathways After High School in Northwest 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 Northwest Minnesota who graduated between 2008 and 2023. During our analysis, three broad patterns, or “pathways,” emerged from the data.

- **The College Completers Pathway:** Half of high school graduates (49.5%) completed some kind of postsecondary credential. Among these “college completers,” 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 completing college. Among these students, Career and Technical Education programs in high school were the clearest differentiator between those who found consistent, stable employment within the region and those who didn't.
- **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. In the Northwest region, the Disconnected numbers are also driven somewhat by the influence of opportunities in border states.

These same patterns emerged in the other regions of Greater Minnesota and were surprisingly consistent, with only some small variation by region.

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 was 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 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 that graduated from five distinct regions. This report is focused on the Northwest counties, including economic development regions 1 (Northwest), 2 (Headwaters), and 4 (West Central). This analysis examined 65,650 individuals who graduated from school districts within this region from 2008 to 2023.

Research regions by number of individuals in dataset

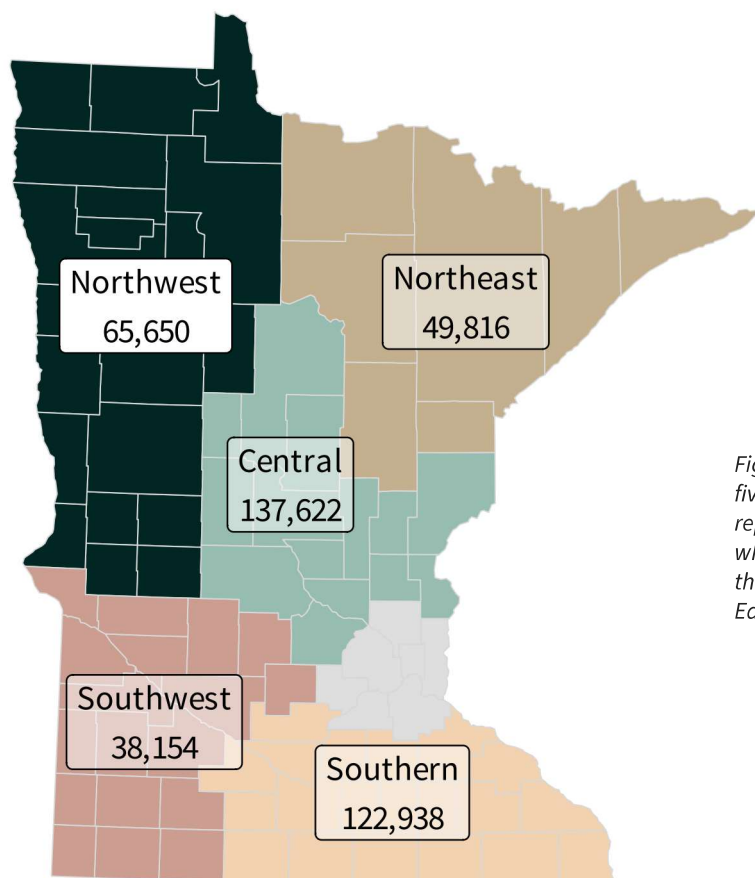


Figure 1: The full dataset was split into five regions during the analysis. This report focuses on the Northwest region which had nearly 66,000 individuals in the analysis. Data: MN Office of Higher Education, SLEDs

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—Northwest (Regional Employment).

Worked 1,000 hours or more that year with a single employer in Northwest Minnesota — 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 Northwest 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, 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.

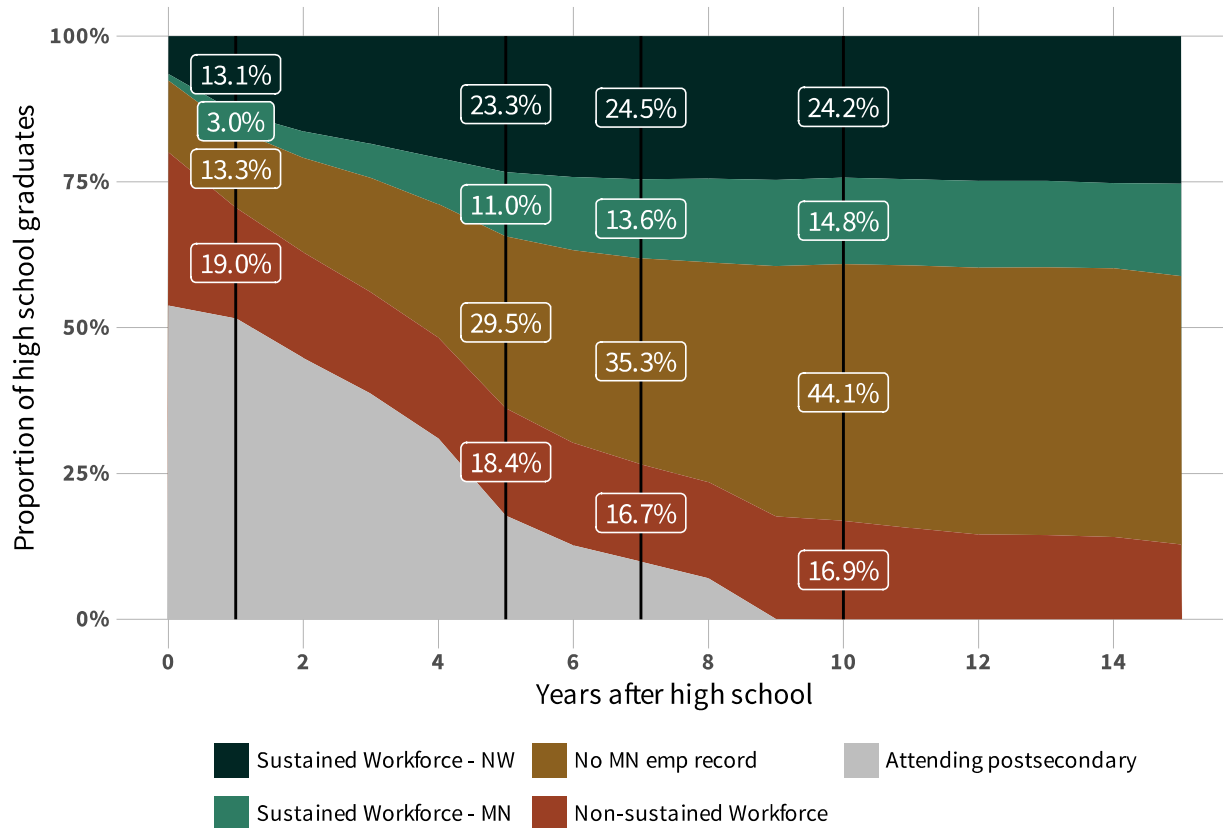
The Findings: Paths Taken by High School Graduates

Finding 1: Where students went after high school

Figure 2 charts how many Northwest Minnesota students ended up in each of the five categories each year after high school. The pattern created by students' outcomes was surprisingly consistent across all five regions, only varying by a few percentage points from one region to the next.

For many students, the first step was further education. In the first year after graduation, about half of Northwest Minnesota's graduates enrolled in a postsecondary institution, whether a local community college, a technical program, or a four-year university. Another 19% were in the non-sustained workforce category, not surprising for recent high school graduates; 13% had sustained employment in the region, while 3% had sustained employment somewhere else in Minnesota, and 13% had no Minnesota employment record.

Workforce outcomes by years after graduating high school



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

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

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 Northwest Minnesota was approximately 23% in sustained workforce participation within the region, 11% sustained workforce participation elsewhere in Minnesota, and 18% in non-sustained workforce participation. Roughly 30% had no Minnesota employment record.

By Year 10, the percentage of high school grads with sustained employment in the Northwest region had stabilized at about 24%. However, the share with no Minnesota employment record had grown to 44%, 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 a quarter, while 'no Minnesota record' grows steadily in the years after high school

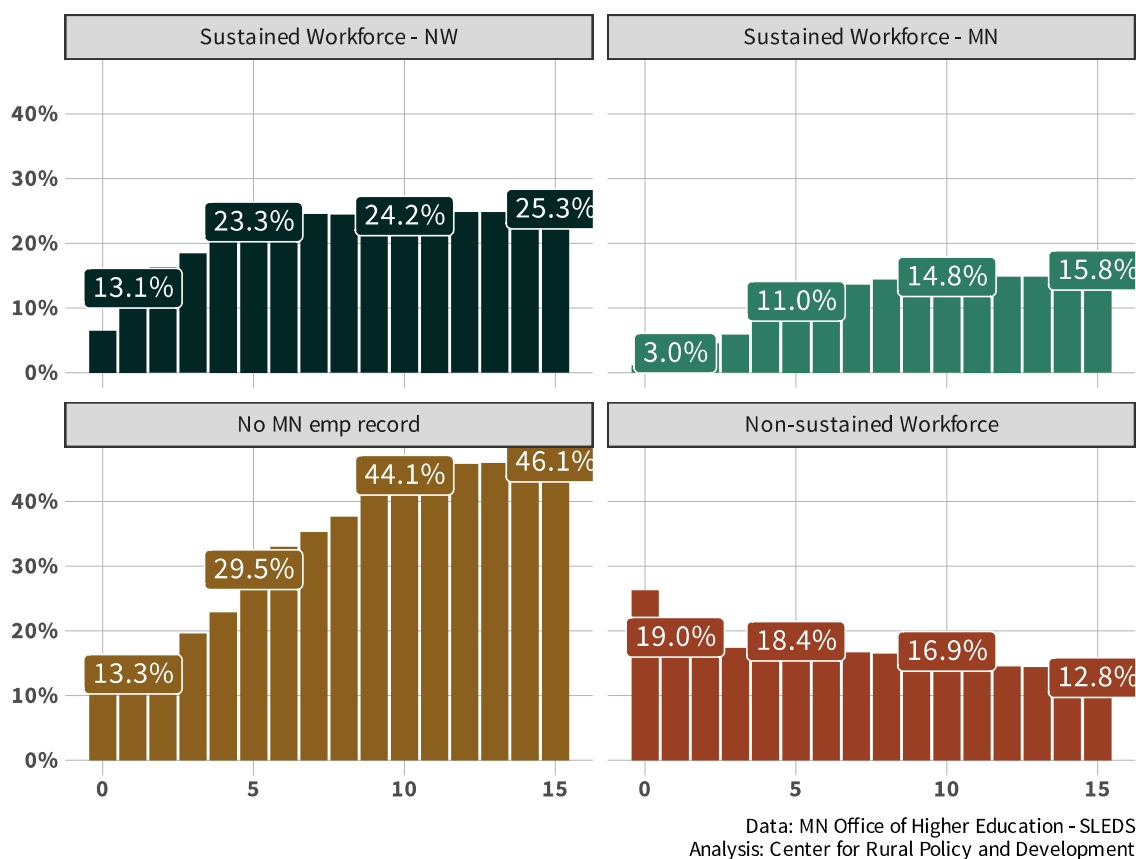


Figure 3: The percentage of individuals each year after graduating high school in each workforce participation category. Note: “Attending post-secondary” is included in the percentages but not shown here in order to see the workforce participation categories better. Data: Minnesota Office of Higher Education, 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. The pathways students ended up on depended on their plans, choices and structural opportunities and barriers in high school and even earlier. These factors correlated highly with these pathways, meaning that given a particular set of factors, the outcome, while not set in stone, was still highly predictable.

The three pathways are:

The College 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 “college completers” were substantially more likely to be in sustained employment five years after high school than those who didn’t. 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, participating in career-aligned prep courses in high school such as CTE was the strongest predictor of eventual sustained employment in the region.

The Disconnected Pathway. A majority of persons who did not complete some kind of postsecondary education program and were not involved in CTE experienced persistent disconnection from the labor force in the years following high school. 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 while also acknowledging the role border states play in these categories.

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 College Completers' 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, followed a fundamentally different path compared to those who didn't complete some kind of postsecondary education, and especially, those who never started a postsecondary program at all.

50% of Northwest high school graduates between the years 2008 and 2019 completed college by 2023.

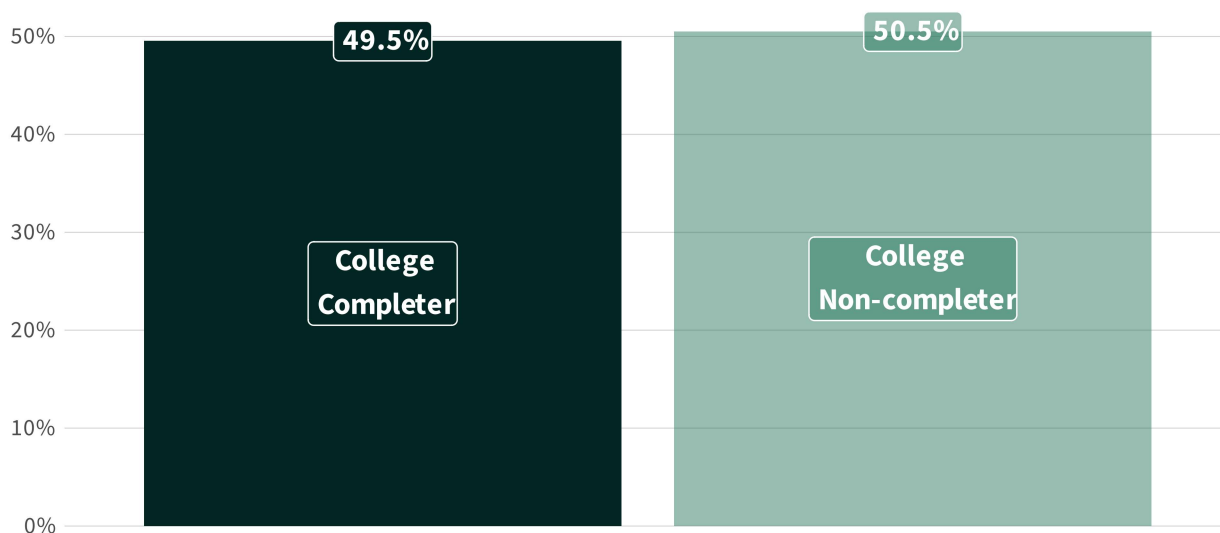


Figure 4: Percent of 2008 to 2019 high school graduates in Northwest by college completion. Data: Minnesota Office of Higher Education, SLEDs

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

This section walks through this finding in three parts:

- How strongly college completion is tied to steady employment;
- Which characteristics were associated with a graduate completing a credential in the first place; and
- What factors shaped whether college completers 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.

After high school graduation, half of Northwest Minnesota's high school students graduating between 2008 and 2019 went on to complete some kind of postsecondary credential, while the other 50% did not. *Of those who completed a postsecondary program, 50.0% were working at the sustained workforce level somewhere in Minnesota by Year 5, either inside or outside the Northwest region. By comparison, of those individuals who did not complete a postsecondary program, only 35.5% were working at the sustained workforce level in the region or elsewhere in Minnesota (Figure 5).* The 14.5-percentage-point difference shows **a strong correlation between completing some kind of postsecondary education or training and finding sustained full-time work.**

Notably, the largest share of college completers — 31.0% — ended up in sustained workforce participation in their home region, making college completion directly relevant to Northwest Minnesota's workforce.

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

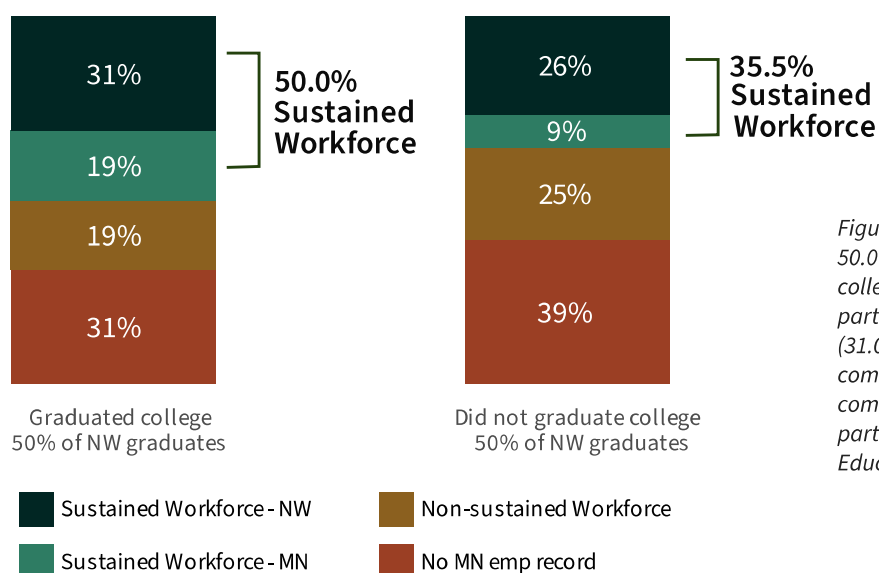


Figure 5: At five years after high school, 50.0% of individuals who completed college had sustained workforce participation either in the region (31.0%) or outside the region (19.0%). In comparison, only 35.5% of non-college completers had sustained workforce participation. Data: MN Office of Higher Education, SLEDS

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

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

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

PSEO participation. Taking college courses while still in high school through Postsecondary Enrollment Options (PSEO) made a real difference — a fairly intuitive result, since PSEO participation means a student is already earning college credit before they graduate from high school.

Advanced Placement exam. Students who took at least one AP exam completed postsecondary credentials at a meaningfully higher rate than those who didn't, regardless of the score they earned.

Non-English home language. Graduates who came from a home where a language other than English was spoken completed postsecondary programs at a meaningfully higher rate than their peers from English-speaking homes, even after accounting for race and ethnicity. This isn't a simple stand-in for race: a non-English home language is common among Hispanic, Asian/Pacific Islander, and Black graduates, but nearly absent among American Indian graduates, a group that saw one of the lowest overall completion rates. Since the finding holds up independent of race, and in some cases points in the opposite direction from a given group's overall completion pattern, *something distinct from race and ethnicity appears to be driving it.*

Local labor market. Where a graduate went to high school also mattered, independent of anything about the graduate themselves. Both *stronger local wages* and *higher local unemployment* were associated with a higher likelihood of completion — two different signals from the same underlying economic geography, both pointing the same direction.

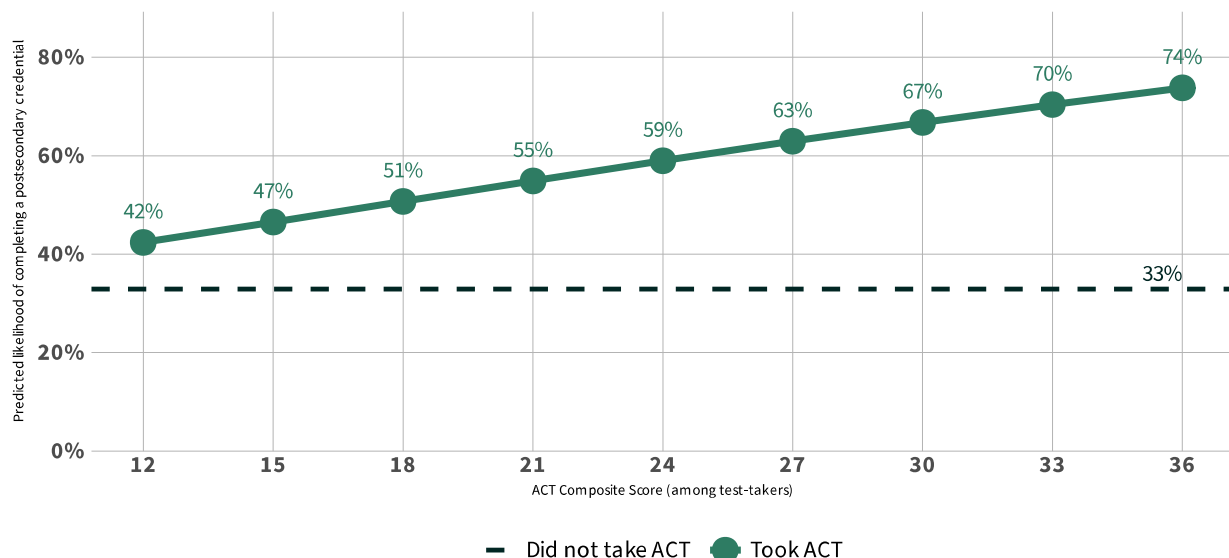
This association may seem a bit confusing, but higher local unemployment and higher local wages appear, in fact, to capture two distinct pressures pushing in the same direction: in areas with fewer immediate job opportunities (higher unemployment), a postsecondary credential may feel like a more necessary path forward, while in higher-wage areas, families may have more resources to support a graduate through college. The data can't confirm which mechanism is doing the work in any individual case, but both hold up as real, independent associations.

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 6). Among those who didn't take the ACT, only 23% completed a postsecondary program, compared to 62% of those who did take the test. But if we break out college completion by ACT

Figure 6: Predicted likelihood of completing a postsecondary credential, by ACT participation and composite score; 33% indicates the percentage of non-test takers who completed a postsecondary program. Data: Minnesota Office of Higher Education, SLEDS

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



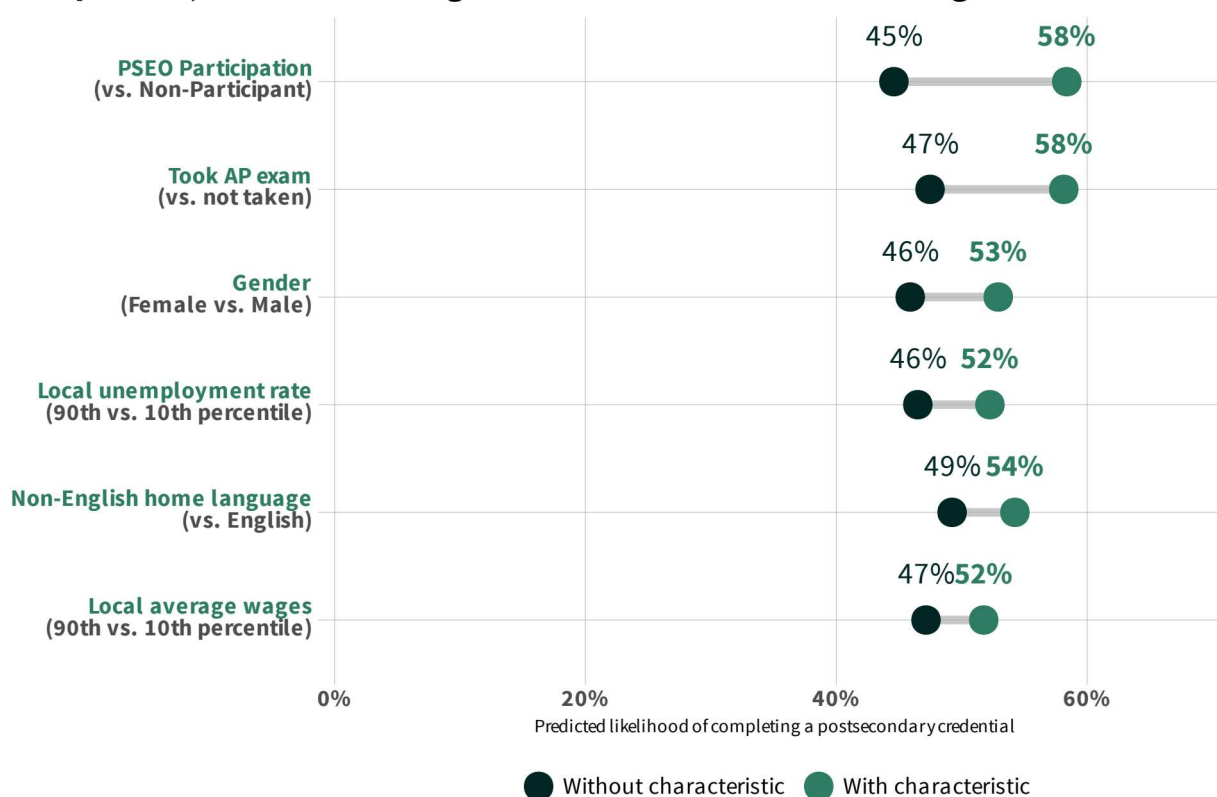
Data: MN Office of Higher Education - SLEDS
Analysis: Center for Rural Policy and Development

score, an interesting thing happens. As the score rises, the likelihood of postsecondary completion climbs steadily also, from 42% at the low end of the scores to 55% at a score of 21 (the national median) and 74% at 36. The highest scorers completed a postsecondary program at more than double the rate of graduates who never took the test at all.

ACT engagement is a relationship that builds continuously, meaning *the size of the ACT's association with 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 that they will complete a postsecondary program compared to not testing at all; a student who scores a 30 sees a boost in likelihood roughly four times as large. Both are real, and both point in the same direction — toward completing a postsecondary program and becoming established in sustained employment.

Figure 7 translates all these factors into a direct, apples-to-apples comparison. Each pair of dots shows the predicted likelihood of completing a postsecondary credential when all other factors are held constant. The

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



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

Figure 7: Predicted likelihood of completing a postsecondary credential, comparing otherwise similar graduates with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDs

chart represents them as two otherwise-similar graduates — one with the characteristic in question, one without it. The size of the boost varied across characteristics, from about 5 percentage points to as much as 13. Participating in PSEO showed the largest gap — a 58% likelihood of completing a postsecondary program compared to 45% for otherwise similar graduates who did not participate in PSEO, a 13-percentage-point difference. Taking the AP exam showed a similarly large gap, with a 58% likelihood for graduates who took the exam to complete a postsecondary program compared to 47% for those who did not participate, while graduates from districts with higher local wages had a 52% likelihood of completing compared to 47% for those from lower-wage districts.

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, came from a non-English-speaking home, and grew up in a community with higher local wages and higher local unemployment isn't just benefiting from one of these factors. The data suggests these effects compound, each adding its own independent boost.

Note: This section focused on characteristics associated with a higher likelihood of postsecondary completion. A number of demographic characteristics were also associated with a lower likelihood — those are discussed later in Pathway 3: The Disconnected Pathway.

Where Do College Completers Establish Their Careers?

Among those who earned a credential, the data revealed another powerful pattern with implications for Northwest 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 illustrates the strong alignment between where a college completer earned their degree and where they ended up working. Among those who graduated from a college in the Northwest region, 41% went on to have sustained workforce participation in the same region. Among those who graduated from a college elsewhere in Minnesota, 42% ended up with sustained workforce participation in the state but outside the region. And among those who graduated from a college outside Minnesota entirely, only 22% returned to the region, while 49% had no Minnesota employment record, indicating that they were most likely working in another state.

It's worth noting that there does seem to be some pull from border states. The rate of individuals who graduated from a Northwest regional college and had no Minnesota employment record five years after high school was higher than in other regions — 28% compared to an average of 15% in non-border regions of the state — possibly because many of the four-year and

Where college completers graduated is strongly associated with where they end up working

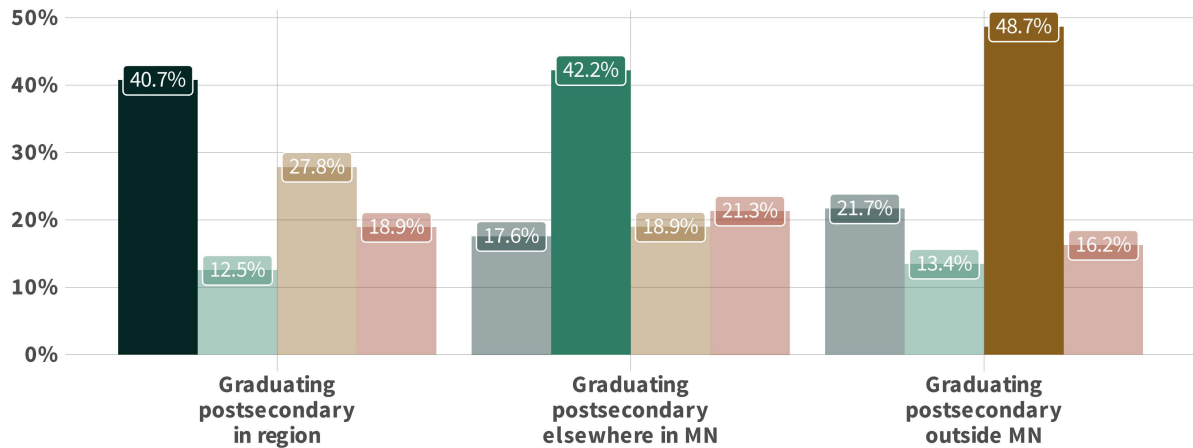


Figure 8: Where an individual participated in the workforce five years after high school is strongly associated with where individuals complete college. Data: Minnesota Office of Higher Education, SLEDs

■ Sustained Workforce - NW
 ■ No MN emp record
■ Sustained Workforce - MN
 ■ Non-sustained Workforce

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

A large majority of Northwest high school graduates completed their post-secondary education in the region.

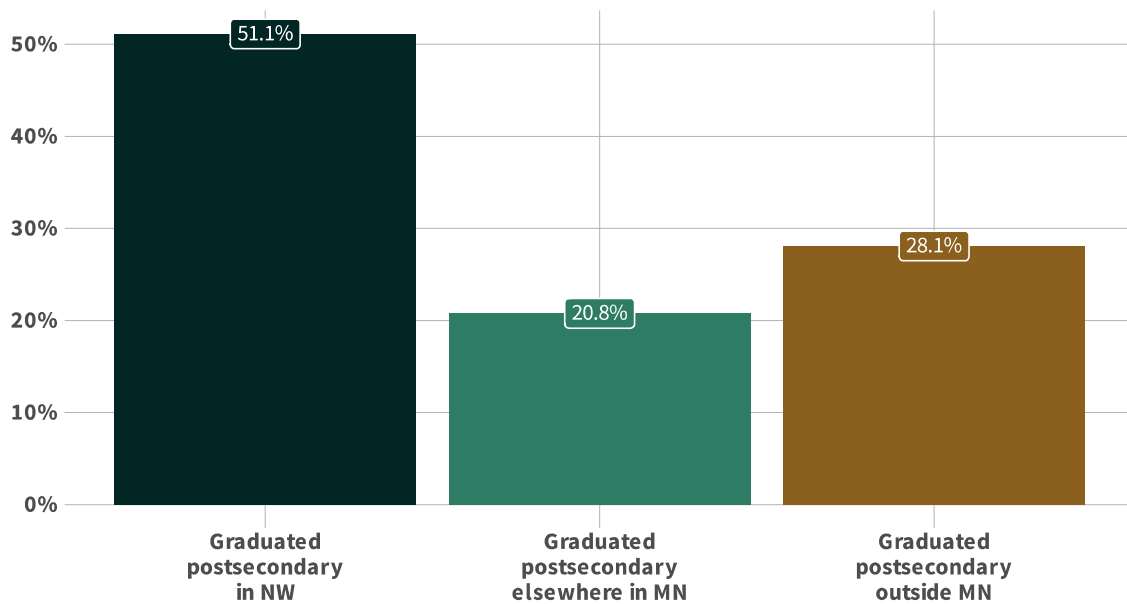


Figure 9: Just over 50% of all college completers did so at institutions within the region. Data: Minnesota Office of Higher Education, SLEDs

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

two-year colleges in the Northwest region are located in counties bordering North Dakota, which likely pulls those individuals into their workforce.

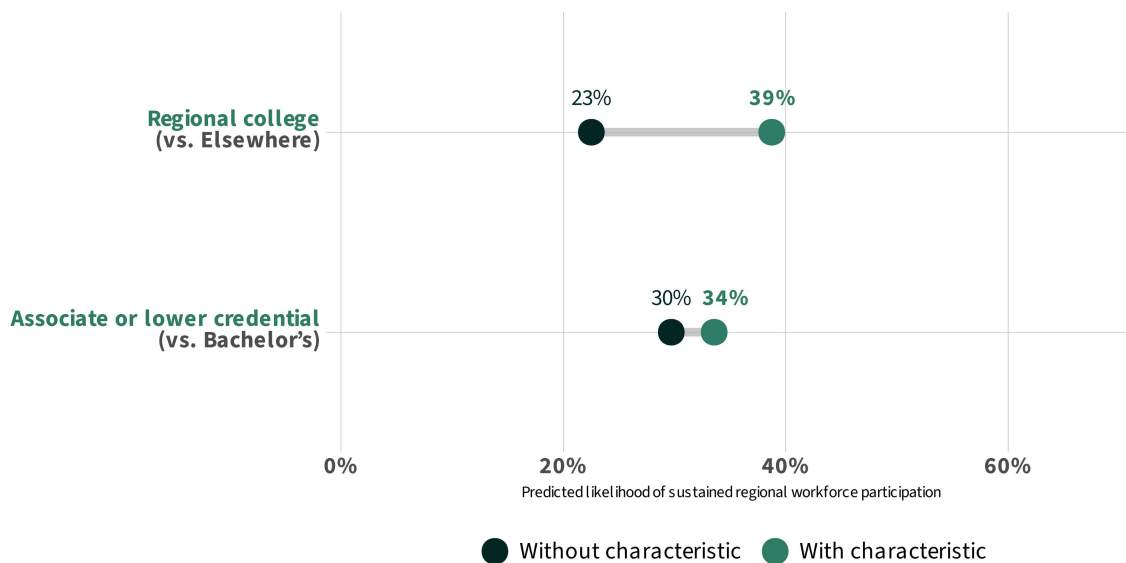
Despite that, the good news for Northwest Minnesota is that over 50% of its high school graduates completed their postsecondary program in the region (Figure 9).

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 weakens considerably but didn't disappear: graduates with an associate degree or less had a predicted 34% likelihood of sustained regional workforce participation, compared to 30% for otherwise similar bachelor's degree holders (Figure 10) — a real, but modest, 4-point difference. That's a much smaller gap than graduation location produced: graduates who completed their credential regionally had a predicted 39% likelihood of sustained regional participation, compared to just 23% for those who completed elsewhere — a 16-point difference, more than three times the size of the credential-level gap, just reinforcing that where a graduate completed their degree matters far more than what degree they completed.

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

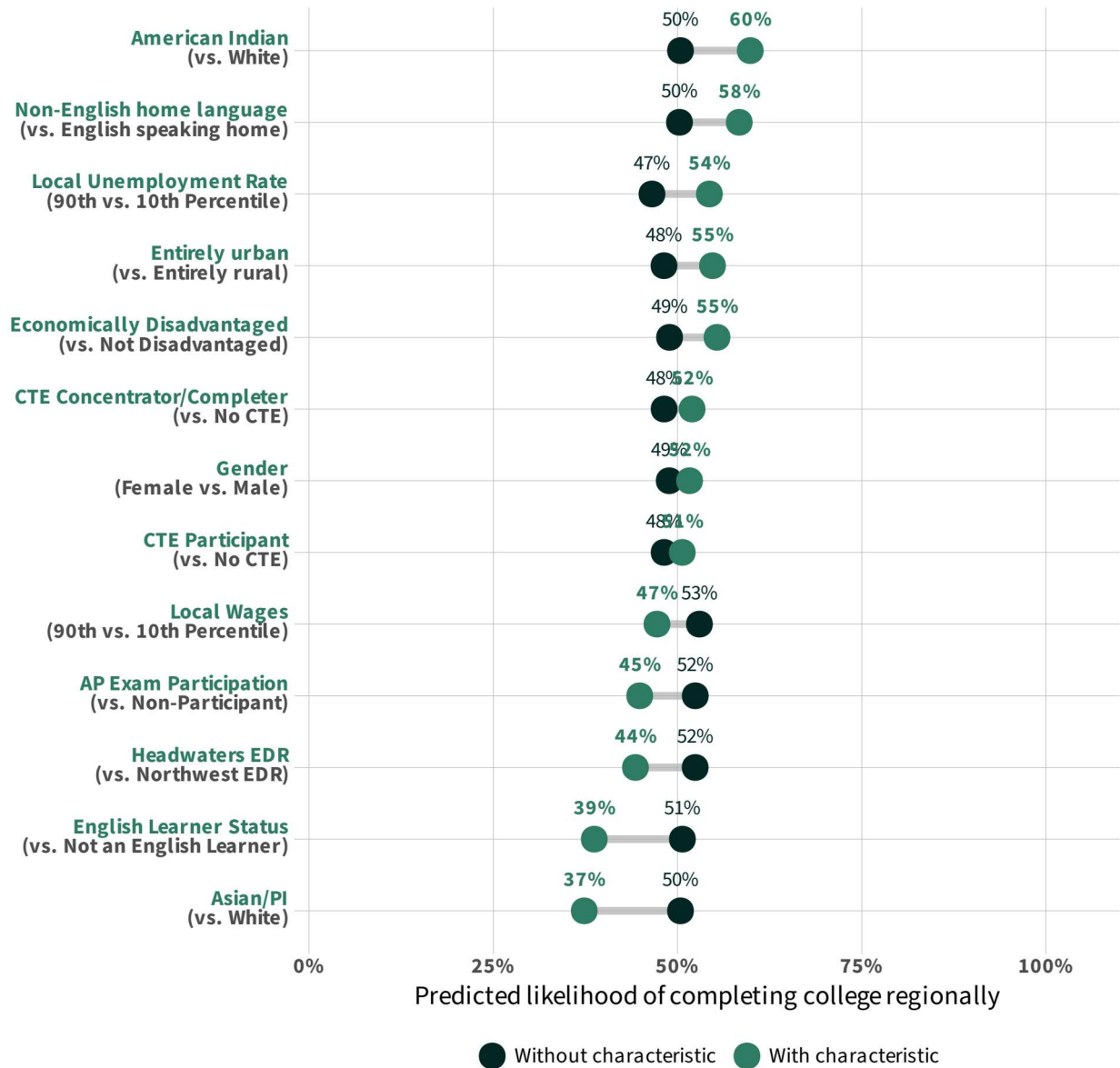
What factors shaped whether students completed their postsecondary programs in the region or somewhere else?

Many of the same factors that indicated 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 independently associated with whether a college completer graduated from a regional institution or somewhere outside the region (Table 1).

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

More Likely to Complete a Postsecondary Program Regionally	More Likely to Complete a Postsecondary Program Outside the Region
American Indian race/ethnicity. American Indian graduates were more likely to complete their credential within the region than White graduates.	AP exam participation. Students who took an AP exam were less likely to complete their credential regionally, identifying a group of students oriented toward postsecondary options outside the region.
CTE concentration. Students who completed a CTE concentration or program — not just light participation, but deeper, sustained CTE engagement — were more likely to graduate from a regional institution.	Asian/PI race/ethnicity. Asian/PI graduates were less likely to complete their credential regionally than White graduates.
CTE participation. Students with lighter CTE participation were also more likely to complete regionally, though the effect was smaller.	English learner status. Graduates who were identified as English learners were less likely to complete their credential regionally.
Higher local unemployment rate. Graduates from areas with higher unemployment rates were more likely to complete their program regionally.	Headwaters EDR. Graduates from the Headwaters economic development region were less likely to complete their credential within the Northwest region than their Northwest EDR peers.
Economic disadvantage. Graduates who qualified for free or reduced-price lunch were more likely to complete their credential regionally.	Higher local wages. Graduates from areas with stronger local wages relative to the state average were less likely to complete regionally.
Female gender. Female graduates were more likely to complete their credential regionally than male graduates.	Higher ACT composite score. Among students who took the ACT, those with higher scores were less likely to complete their credential regionally.
Non-English home language. Graduates from homes where a language other than English was spoken were more likely to complete their credential regionally.	
Entirely urban community. Graduates from entirely urban communities were more likely to complete their credential regionally than those from entirely rural communities.	
Taking the ACT. Simply taking the ACT — regardless of score — was associated with a large, independent pull toward completing their credential regionally.	

A mix of demographic, academic, and geographic characteristics are each independently associated with completing college regionally or elsewhere



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

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

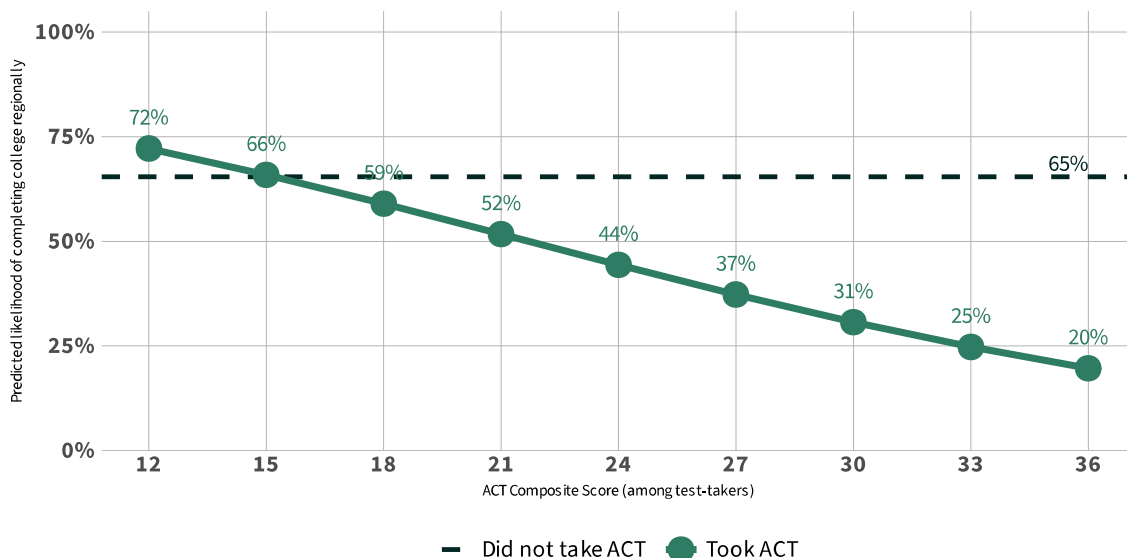
Figure 11 shows how far each characteristic actually moves a college completer's predicted likelihood of graduating regionally. The characteristics on the right side of 50% point toward staying regional while the characteristics to the left point toward moving away. Asian/PI identity showed the largest pull toward completing a postsecondary program outside the region (37% vs. 50%, a 13-point gap), followed closely by English learner status (39% vs. 51%, 12 points). Unlike the pattern seen in some other regions, no single characteristic here stands sharply apart from the rest — the gaps on this side of the chart move fairly steadily from 6 to 13 points, without one outlier several times larger than the others.

Again, ACT engagement doesn't fit neatly into the chart above. Like the completion section earlier, this 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 who did not take the ACT, the predicted likelihood of completing a postsecondary program in the region is 65%. Test-takers with lower scores had a likelihood of completing their postsecondary program regionally at a *higher* rate: 72% at a score of 12, and 66% at a score of 15. Every additional point above a score of 15 reduced the likelihood that a person would complete their postsecondary program in the region, falling to just 20% with a score of 36.

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

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



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

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 an 18, 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 Northwest Minnesota?

The College Completers Pathway shows a clear pattern for Northwest 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. Among college completers, *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, though 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." Engaging with the ACT at all leaned regional; it was specifically strong scores — along with AP exam participation — that predicted leaving. Deeper CTE engagement, economic disadvantage, non-English home language, and communities in entirely urban counties all pointed toward staying regional. The impact from race varied: American Indian graduates leaned regional, Asian/PI graduates did not. Local economic conditions cut in two different directions rather than one: graduates from higher-unemployment areas were more likely to stay regional, while graduates from higher-wage areas were more likely to complete elsewhere.

While several other factors we examined eventually shifted, faded, or reversed, CTE's relationship with non-college completers and regional attachment only deepened over time.

Pathway 2: The Workforce-First Pathway

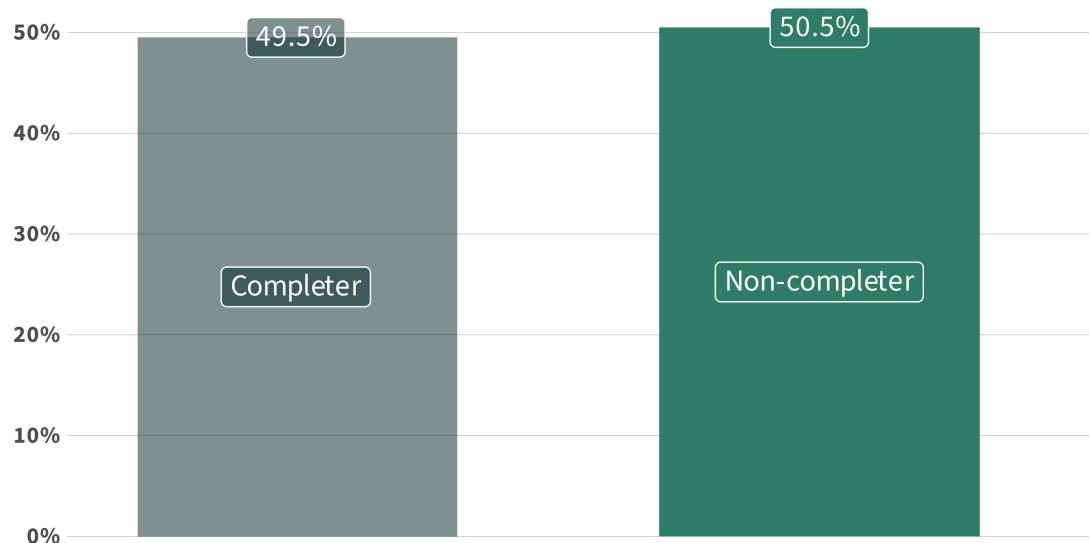
The Workforce-First Pathway is the story of the 36% of Northwest Minnesota high school graduates who did not complete a postsecondary credential but still went on to find sustained workforce participation, mostly in the Northwest region but also in the rest of the state. These are the high school graduates who entered the workforce directly without completing a postsecondary program.

What distinguishes the non-college completers on this pathway who did establish stable, sustained regional workforce participation from those who did not? As we will see, the story here is simpler than the College Completers' Pathway but no less important: **career-aligned preparation in high school is the clearest and most durable predictor of attachment to the regional workforce for this group.**

Of the non-college completers, just over a third (36%) had sustained workforce participation five years after high school — 26% with employers in the region and 9% elsewhere in Minnesota. This is the group this pathway focuses on: what distinguishes these non-college completers who found steady footing in the workforce from those who didn't?

Figure 13: Percent of 2008 to 2019 high school graduates in Northwest MN by college completion.
Data: Minnesota Office of Higher Education, SLEDS

51% of high school graduates between the years 2008 and 2019 did not complete college by 2023.



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

Just over a quarter of non-college completers had sustained workforce participation in the region and another 9% outside the region but within Minnesota.

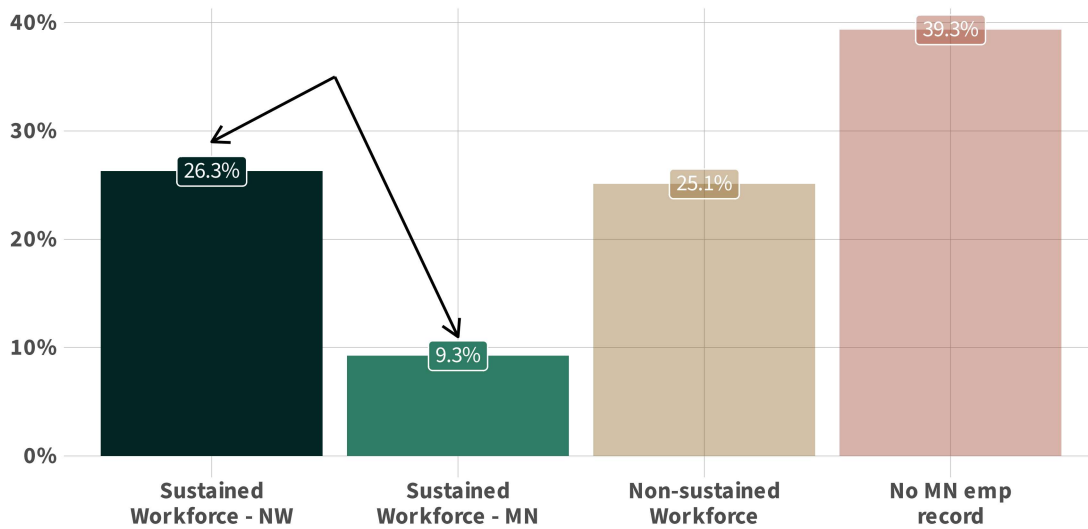


Figure 14: One third of non-college completers (36%) had sustained workforce participation in the region. Data: Minnesota Office of Higher Education, SLEDs

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

Understanding the variables and conditions that correlated with whether non-college completers ended up in sustained workforce participation or not could contribute significantly to future policy and programming aimed at helping the other 64% of non-college completers move into that sustained workforce participation group as well.

What factors were more likely to keep non-college completers connected to sustained regional workforce participation?

Among non-college completers, two characteristics stood out as independently associated with sustained regional workforce participation five years after high school: engagement with CTE; and engagement with the ACT.

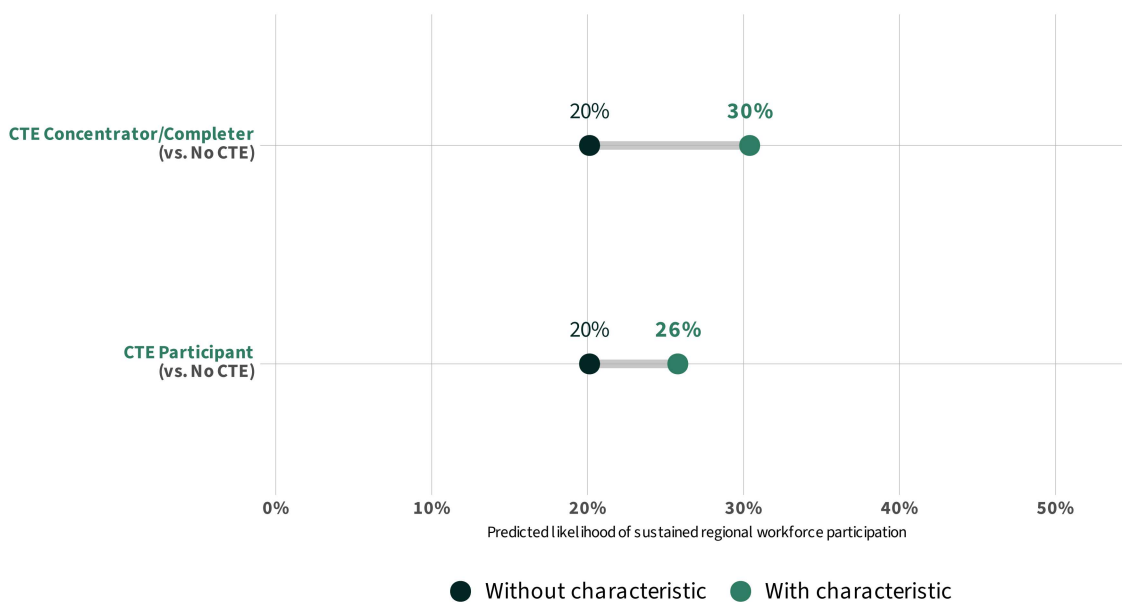
CTE Engagement

Students who completed a full CTE sequence — becoming what’s known as a “concentrator” — were significantly more likely to have sustained workforce participation in the region than peers with no CTE involvement.

Figure 15 shows how much CTE engagement was a factor for non-college completers five years after high school. Those who finished a full sequence of CTE courses had a predicted 30% likelihood of sustained regional employment compared to 20% for otherwise similar peers with no CTE involvement. Even lighter CTE participation, short of a full sequence, showed a smaller but still real effect: 26% versus that same 20% baseline.

Both of these differences showed up at one year after high school and continued to grow through year 10, making CTE one of the most durable

Both CTE concentration and lighter CTE participation are independently associated with higher regional attachment.



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 CTE engagement, among non-college completers. Data: Minnesota Office of Higher Education, SLEDs

characteristics identified in this analysis. While several other factors we examined eventually shifted, faded, or reversed, CTE's relationship with non-college completers and regional attachment only deepened over time.

ACT Scores

As it did in the college pathway, taking the ACT test comes with a twist. Simply taking the ACT — regardless of score — was associated with meaningfully higher odds of sustained regional employment.

Among non-college completers who did not take the ACT but who are otherwise similar in gender, race and ethnicity, economic background, and every other characteristic included in this model, the predicted likelihood of sustained regional employment at five years after high school graduation is 27%.

But as with the College Completers Pathway, the relationship between ACT engagement and future sustained workforce participation among non-college completers in the region also depended on the score achieved.

The likelihood starts out higher for non-college completers who took the test and received lower scores, at 36% for a score of 12, but the odds fall from there. For non-college completers who scored 36, the likelihood of them having sustained workforce participation in the region at five years after graduation was only 11%.

Simply taking the ACT is associated with higher odds of sustained regional employment at lower scores; among test-takers, this advantage fades and reverses as scores climb higher.

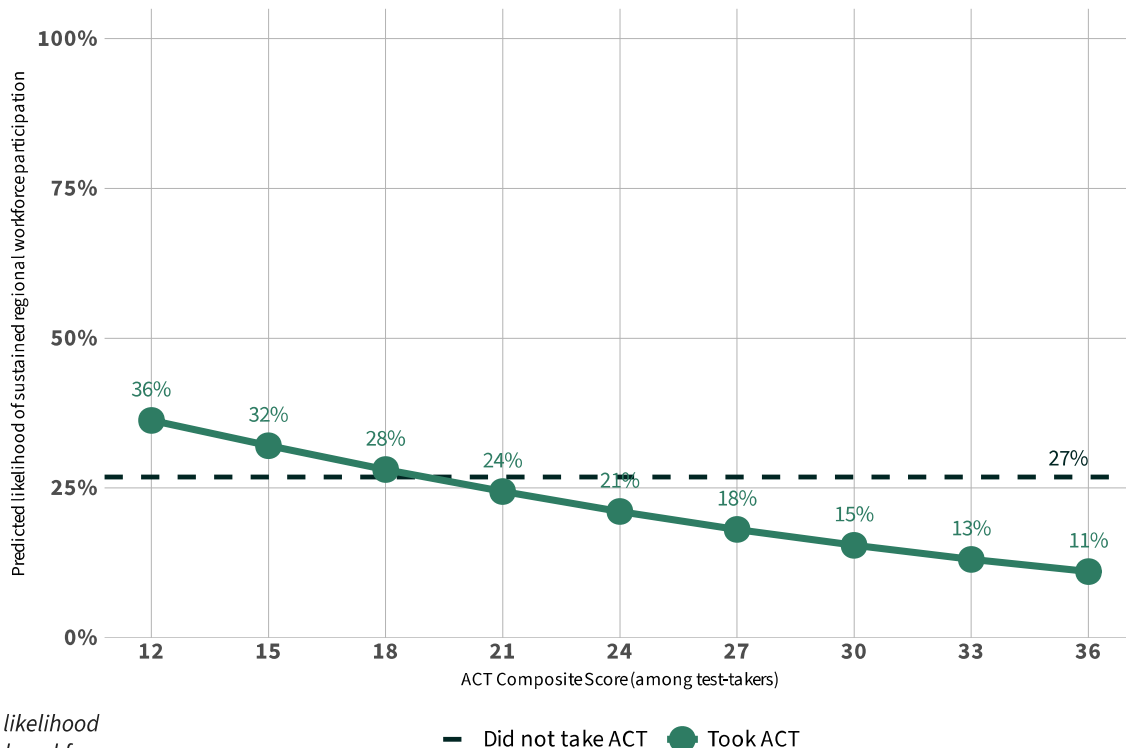


Figure 16: Predicted likelihood of sustained regional workforce participation five years after high school, by ACT participation and composite score, among non-college completers. Data: Minnesota Office of Higher Education, SLEDs

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

As in the College Completers' Pathway, taking the ACT and scoring modestly indicates a real likelihood of regional attachment, while scoring well on it indicates a real likelihood of *not* having regional attachment. The crossover point here (around 20) sits a bit higher than the one we saw for college location (around 15). The numbers are a little different, but the underlying story is the same: *a strong ACT performance signals something that pulls away from staying in the region.*

What works for the Workforce-First pathway?

Taken together, CTE engagement is the clearest and most reliable factor identified for this pathway, and the relationship with sustained workforce participation in the region only strengthens over time. ACT participation matters, too, though it behaves differently than CTE: simply taking the ACT raises the likelihood of sustained workforce participation in the region, but when the score achieved is considered, higher scores indicate a person is more likely to leave the region, while a lower score is a real, substantial indicator of someone who will stay in the region, just as with college completers.

Pathway 3: The Disconnected Pathway

Not everyone on the Workforce-First Pathway ends up in sustained regional employment, of course. The next section takes a closer look at that group specifically — not just who is most likely to be disconnected from the workforce, but what disconnection actually looks like, and why it tends to persist rather than resolve on its own.

Five years after high school, 36% of non-college completers were in sustained workforce participation either in the Northwest region or elsewhere in Minnesota. These individuals were on the Workforce-First Pathway. However, the other two thirds of non-college completers (65%) were not. Instead, they were either individuals with no Minnesota employment record (39%) or in non-sustained workforce participation (25%). This group is on the third pathway that emerged: the Disconnected Pathway.



Nearly 65% of non-college completers had non-sustained workforce participation or no Minnesota employment record.

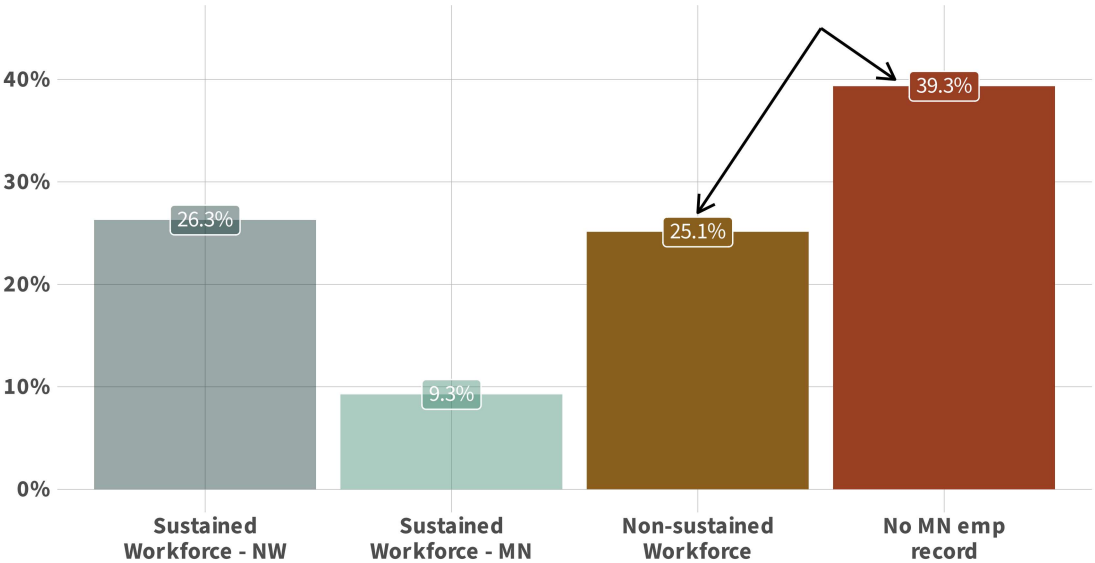


Figure 17: A large majority of non-college completers either had no Minnesota employment record or non-sustained workforce participation five years after exiting formal education. Data: Minnesota Office of Higher Education, SLEDs

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

Those individuals on this pathway are 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). Besides that, this group was persistently disconnected from the labor force across the timeline. For many in this group, that disconnection did not resolve on its own. 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 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 this group 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 college completers—particularly those who graduated from institutions outside the region or outside the state—the data showed that no Minnesota employment record often reflects out-of-state graduation, followed by out-of-state employment. For Northwest Minnesota specifically, “out of state” doesn’t necessarily mean far away: the region borders North Dakota directly, and large four-year institutions just across that border (the University of North Dakota, North Dakota State University) draw a meaningful number of graduates who may go on to work in Fargo-Moorhead, Grand Forks, or elsewhere in North Dakota. Minnesota’s employment records simply can’t see across that line, so a completer working just a few miles from home in East Grand Forks or Moorhead’s twin city looks identical in this data to one who moved across the country.

That same border dynamic carries real weight when interpreting “no Minnesota employment record” among non-completers as well. National and regional labor market data support treating “no Minnesota employment record” among college non-completers as a genuine indicator of disconnection for this group in general. College completers participate in the labor force at meaningfully higher rates than non-completers — a well-documented national pattern. Accounting for that difference, non-completers in Northwest Minnesota would be expected to have a non-participation rate of roughly 22%, even before considering the added barriers facing graduates in the Disconnected Pathway specifically. The observed rate is considerably higher, at 39.3% — a 17-percentage-point gap that is too large to attribute entirely to genuine disconnection with confidence. Some meaningful share of that gap likely reflects non-completers working just across the North Dakota or South Dakota border rather than being out of the workforce altogether. It’s also worth noting that 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 — common in rural areas — would also not appear in this data, regardless of location. Without a way to observe employment records in either neighboring state or capture self-employment directly, this data cannot say how much of the 17-point gap reflects genuine disconnection versus one of these two forms of undercounting.¹

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 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
- **Intermittently Disconnected:** Disconnected in 1-2 of the first 5 years
- **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 half of non-college completers—58%—were disconnected four to five of the first five years after leaving formal education, while only 11% were *consistently attached* across all five years. Most concerning, the findings showed that for the majority of the people on this pathway, disconnection early on did not resolve itself; instead, it persisted.

¹ Note on the source of the 22% estimate: This is a derived figure, not a number reported directly by any single source. It combines Northwest Minnesota's regional non-participation rate for 20- to 34-year-olds (14.71% average) with national labor force participation rates by educational attainment (72.1% for bachelor's degree or higher vs. 56.9% for high school graduates with no college, a 15.2-point gap in non-participation), from U.S. Bureau of Labor Statistics, Current Population Survey, 2025 Annual Averages, Table 7 (<https://www.bls.gov/cps/cpsaat07.htm>). Applying that gap to the regional average using Northwest Minnesota's actual 50%/50% completer/non-completer split yields an estimated non-participation rate of approximately 22% for non-completers specifically. This estimate is a national benchmark and does not account for cross-border employment in North Dakota or South Dakota, nor for self-employment not captured in Minnesota's employer-reported wage records — both of which Minnesota administrative data cannot observe. Given the size of the gap between this estimate (22%) and the observed rate (39.3%) for Northwest Minnesota, one or both of these forms of undercounting may be responsible for a substantial portion of the difference, though the exact magnitude cannot be determined from this data alone.

Weak workforce connection often persists among non-college graduates.

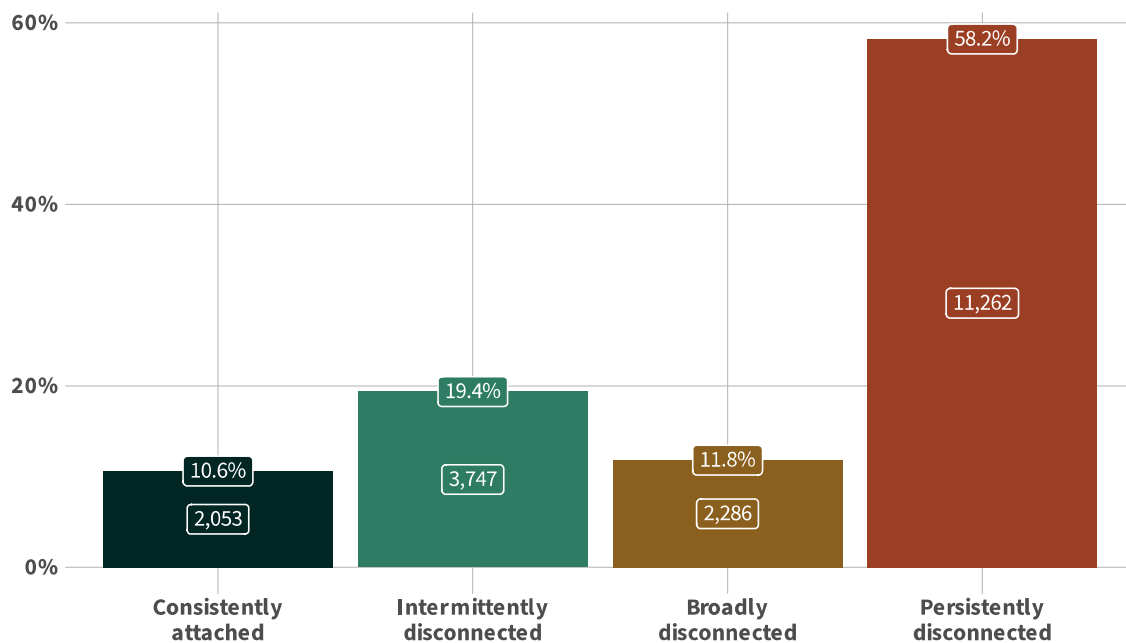
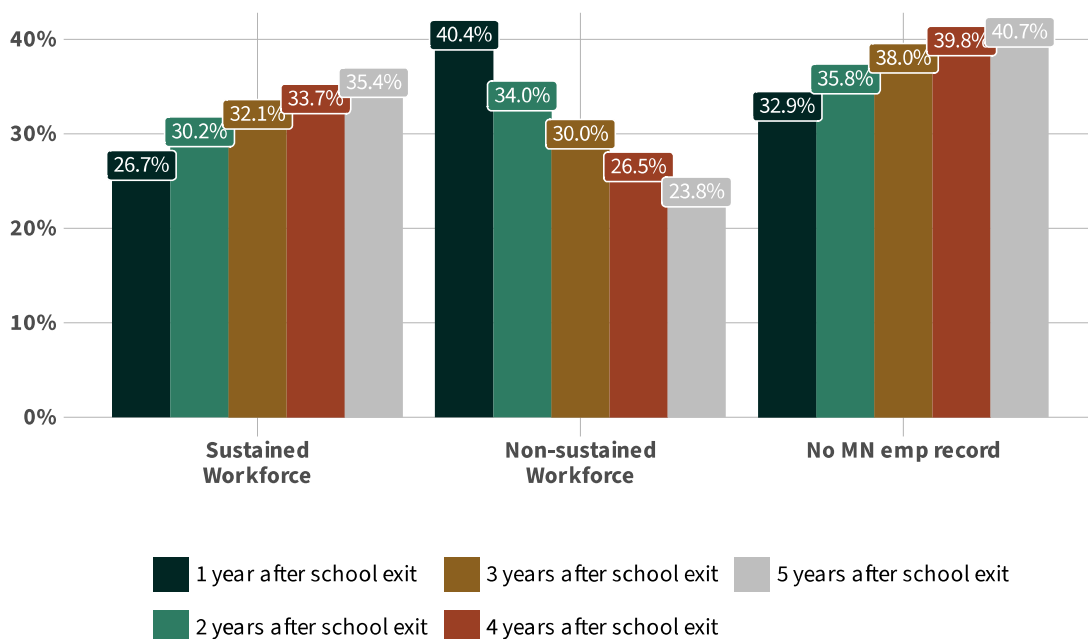


Figure 18: The distribution of non-college completers by how persistently disconnected they were from the workforce.

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

Figure 19: The share of non-college graduates 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 2. Data: MN Office of Higher Education, SLEDs

Unstable work fades over time. Disappearing from the record doesn't.



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

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-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. 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 records, as both or as neither?

Several characteristics in fact showed elevated risk on one side 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 English learner status showed an independently confirmed, elevated risk on both sides.

Persistent Instability

The table above shows which characteristics carry an independent risk of persistent instability when all other factors are held constant, and we can calculate how large that risk is.

Six characteristics stood out in the analysis as independently linked to

Table 2: Characteristics associated with higher odds of persistent instability versus persistent no-record status among non-college completers. 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. A strong, independent, instability-specific.	Asian/Pacific Islander identity. A large, independent risk, among the strongest in the analysis, but the data doesn't reveal more.
Female gender. A real, independent risk factor for instability specifically.	Hispanic identity. Also a large, independent risk — comparable in size to the Asian/PI finding at left.
English learner status. A real, independent instability-specific risk.	English learner status. Also elevated here — the only characteristic with a confirmed risk on both sides of this table.
Special Education status. A modest but real, independent risk factor for instability specifically.	Entirely urban community. The single largest gap found in either model — a striking, independent risk.
Economic disadvantage. A modest but real, independent risk factor for instability specifically.	
Graduating from the West Central economic development region. A modest but real, independent risk factor for instability specifically.	

Several demographic, academic, and geographic characteristics are independently associated with a higher risk of persistent instability

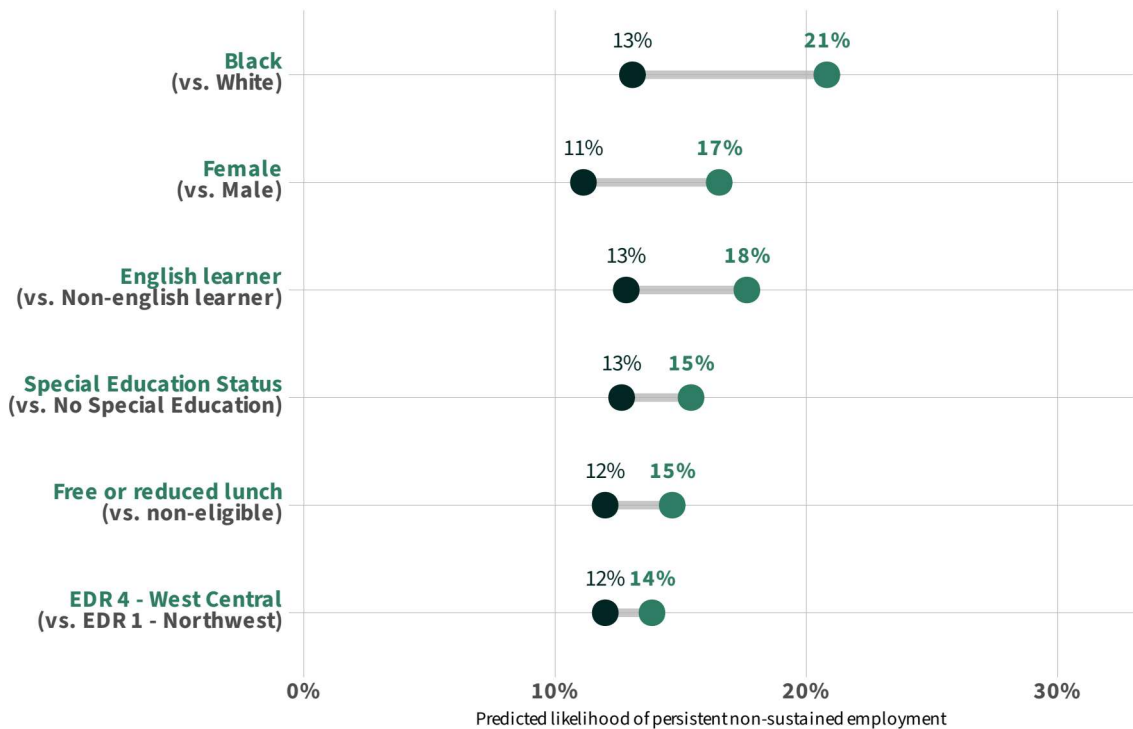


Figure 20: Predicted likelihood of persistent non-sustained employment, comparing otherwise similar non-college completers with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDs

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

persistent instability, and the size of their effects varied meaningfully (Figure 20). Black identity showed by far the strongest association; when all other factors were held constant, Black individuals faced a predicted 21% likelihood of persistent non-sustained employment, compared to 13% for otherwise similar White individuals, nearly double the risk. Gender told a similar story: female graduates faced a 17% predicted likelihood, six points higher than their male peers. English learner status had a 5-point gap (18% vs. 13%). Economic disadvantage and special education status showed smaller though still real effects — free or reduced-price lunch eligibility added 3 points of risk (15% vs. 12%), and special education status added 2 percentage points (15% vs. 13%). Graduating from a high school in the West Central economic development region rounded out the list with a 2-point difference (14%) compared to Northwest EDR graduates (12%). 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 risk of persistent instability.

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?

Individuals graduating from school districts in entirely urban counties (see explanation of Rural-Urban Commuting Areas in the Appendices) show the largest gap of the group — a 43% likelihood of having no Minnesota employment record compared to 28% for otherwise similar individuals from entirely rural districts. Asian/PI identity shows the next largest effect: a predicted 38% likelihood compared to 26% for otherwise similar White graduates, a 12-point gap. Hispanic identity shows a similar but smaller gap — 34% compared to White graduates at 26%, an 8-point gap. English learner status rounds out the list: 32% compared to 26%, a 7-point difference.

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.

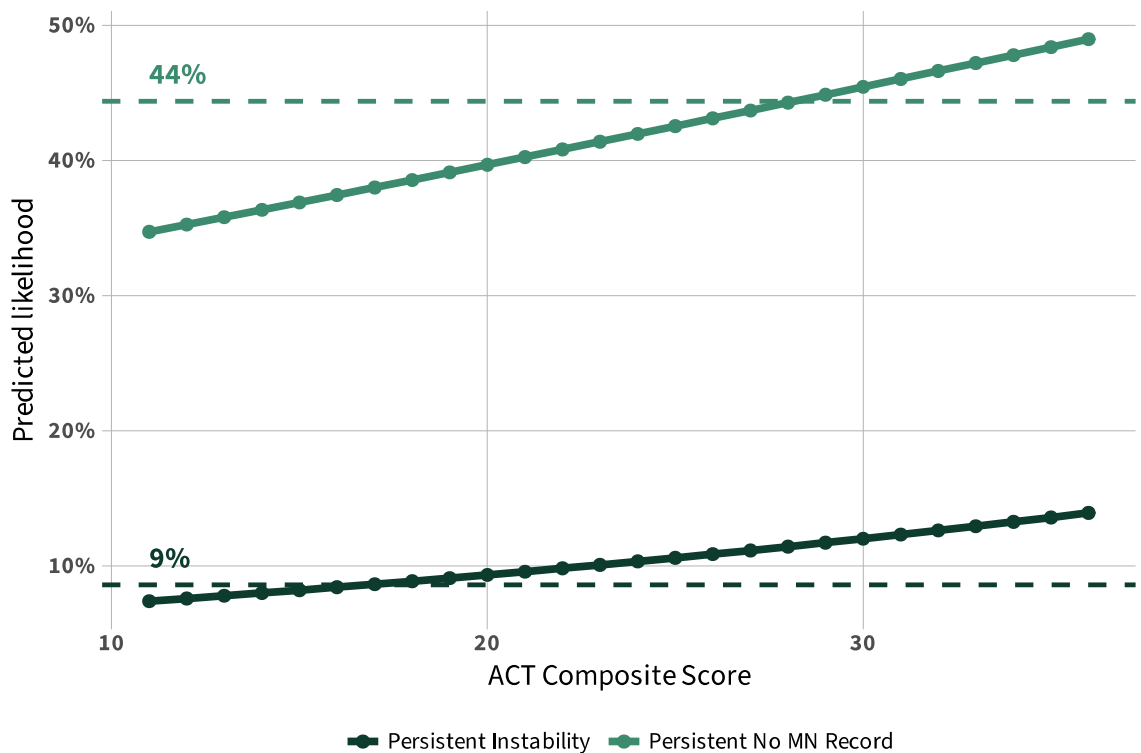
Not taking the ACT is associated with *higher* odds of both persistent unsustained workforce participation and persistent no-record status compared to someone who took the test. Taking the test, however, showed a clear protective relationship against both categories.

However, among students who did take the ACT, a higher score was associated with increased risk of both outcomes. Figure 21 shows this relationship. Among test-takers, predicted risk of persistent unsustained workforce participation (persistent instability) rose steadily from the lowest

ACT scores to the highest, while predicted risk of persistent no-record status followed a similar upward path, rising steadily across the same range. The two outcomes move together in parallel, suggesting that whatever is driving this pattern isn't specific to one type of disconnection — it's 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 happened.

Why this pattern holds — why stronger academic performance would be associated with greater risk among non-completers specifically — isn't something this data can explain. It may reflect something about the pathway that leads a well-prepared student to not complete a credential in the first place, but it is worth flagging as a question for further investigation.

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 21: 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-college completers who did not take the ACT (dashed lines). Data: Minnesota Office of Higher Education, SLEDS

Disparities Compound Across the Pipeline

The demographic characteristics identified in this pathway are not unique to non-college completers. Recall from the College Completers' Pathway that 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.

Black, Hispanic, Asian/Pacific Islander, and English Learner high school graduates all showed this pattern. Black graduates had a predicted 40% likelihood of completing a postsecondary credential, compared to 50% for otherwise similar White graduates — the largest gap of the three racial and ethnic groups showed up here. Hispanic graduates showed a somewhat smaller gap (43% vs. 50%), while Asian/Pacific Islander graduates showed a more modest one (46% vs. 50%). English Learner status carried a comparable gap of its own (44% vs. 50%) — and 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 instability and persistent no-record status.

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

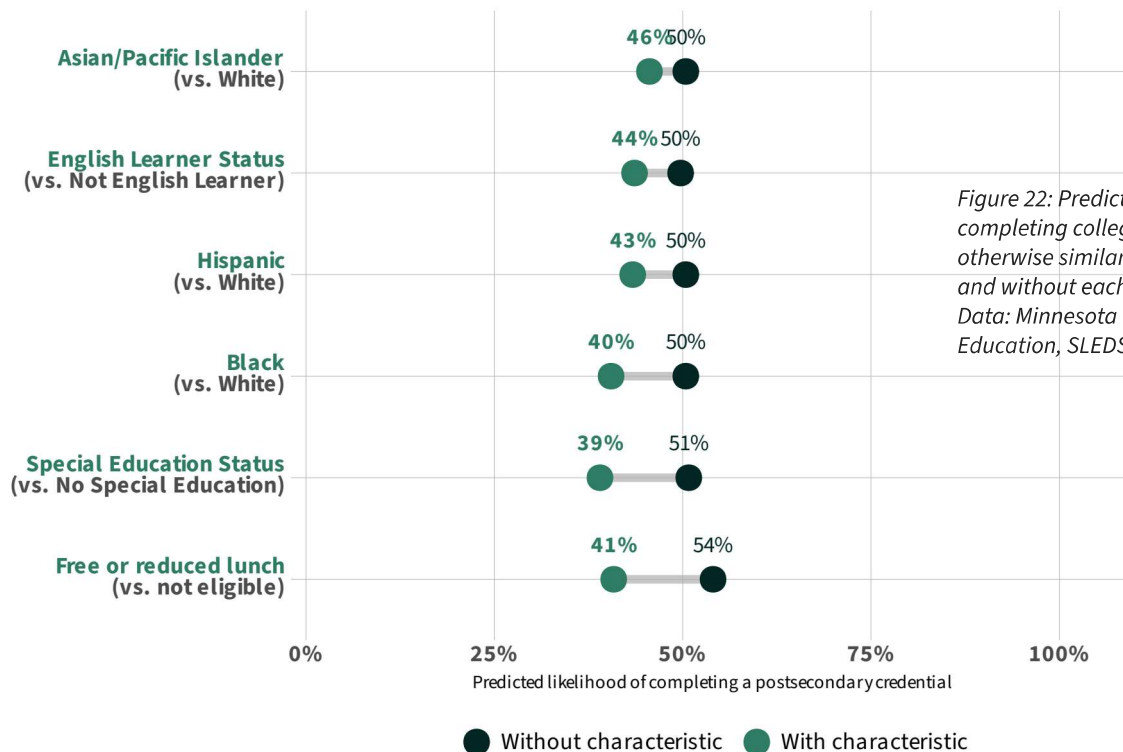


Figure 22: Predicted likelihood of completing college, comparing otherwise similar individuals with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDs

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

American Indian identity and the Headwaters EDR are both associated with lower odds of completing college — but neither shows an independent link to elevated disconnection risk later in the pipeline

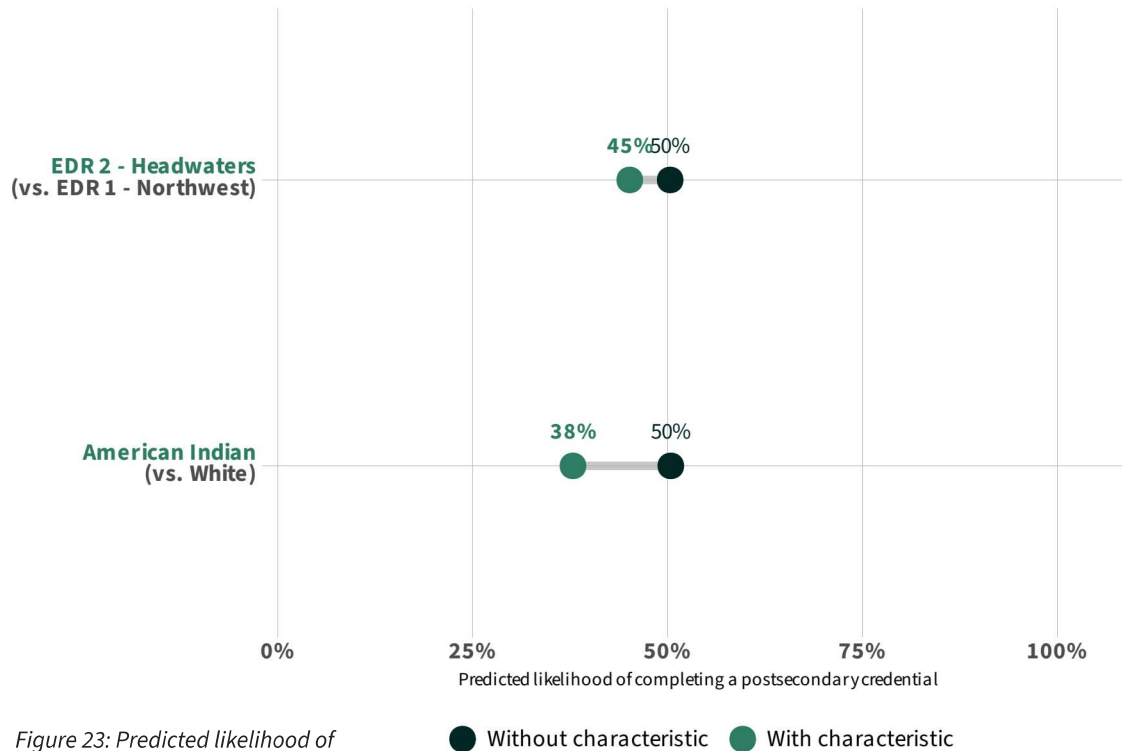


Figure 23: Predicted likelihood of completing college, comparing otherwise similar individuals with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDs

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

Special Education status and economic disadvantage carried real barriers of their own. Special Education status showed one of the widest completion gaps of any characteristic examined (39% vs. 51%, a 12-point difference). Economic disadvantage showed an even larger gap (41% vs. 54%, a 13-point difference). Both were also independently associated with elevated risk of instability.

The important thing to note about these characteristics is that these aren't two separate disparities — one at college completion, one at workforce disconnection — but *a single disparity that shows up at both stages*, in one form or another. These barriers do not resolve on their own between high school and adulthood; they accumulate.

Not every barrier follows this same pattern, though. Two characteristics — American Indian identity and graduating from a Headwaters-region high school — show a real, substantial gap in college completion, but no corresponding relationship to either non-sustained workforce participation or no Minnesota employment record once other factors are accounted for.

Figure 23 shows American Indian graduates had a predicted 38% likelihood of completing a postsecondary credential, compared to 50% for otherwise

similar White graduates — a 12-point gap. Graduates from a Headwaters-region high school showed a smaller, though still real, gap of their own (45% vs. 50% for otherwise similar Northwest EDR graduates).

Yet in the disconnection models, neither characteristic reached statistical significance for persistent instability or persistent no-record status. That doesn't mean American Indian graduates or Headwaters-region graduates are unaffected by disconnection — the earlier findings on race and geography still apply broadly. It means that once a person has already crossed the threshold into non-completion, these two characteristics specifically don't carry additional, independent risk beyond what the other factors in the model already explain. The disparity here appears concentrated at a single point — the decision or ability to complete a postsecondary credential — rather than compounding forward the way it does for the other characteristics.

This distinction matters for where intervention is likely to have the greatest impact. For the six characteristics discussed above, disparities show up repeatedly across the pipeline, suggesting that support is needed at multiple stages. For American Indian graduates and Headwaters-region graduates, the data points toward a single, specific juncture — the pathway into and through postsecondary completion.

What Offers Protection Against Disconnection?

Protections Against Persistent Instability

Among the many characteristics examined, five showed a confirmed, independent *protective relationship* against persistent instability: attending postsecondary education, even without completing it; graduating from an entirely urban school district; coming from a home where a language other than English was spoken; engaging in CTE as a concentrator; and taking the ACT.

Individuals who attended some form of postsecondary education, even without finishing, had a predicted 11% likelihood of persistent instability, compared to 14% for otherwise similar graduates who never attended at all. This makes intuitive sense. Even a partial postsecondary experience often comes with structured routines, career counseling, and connections to employers 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.

School districts in entirely urban and non-English home language showed similarly sized protective effects — 9% compared to 13% for entirely urban graduates versus their entirely rural peers, and 9% compared to 14% for graduates from non-English-speaking homes versus English-speaking homes.

Attending postsecondary education, graduating from an entirely urban district, non-English home language, CTE engagement, and taking the ACT are all independently associated with lower persistent instability risk

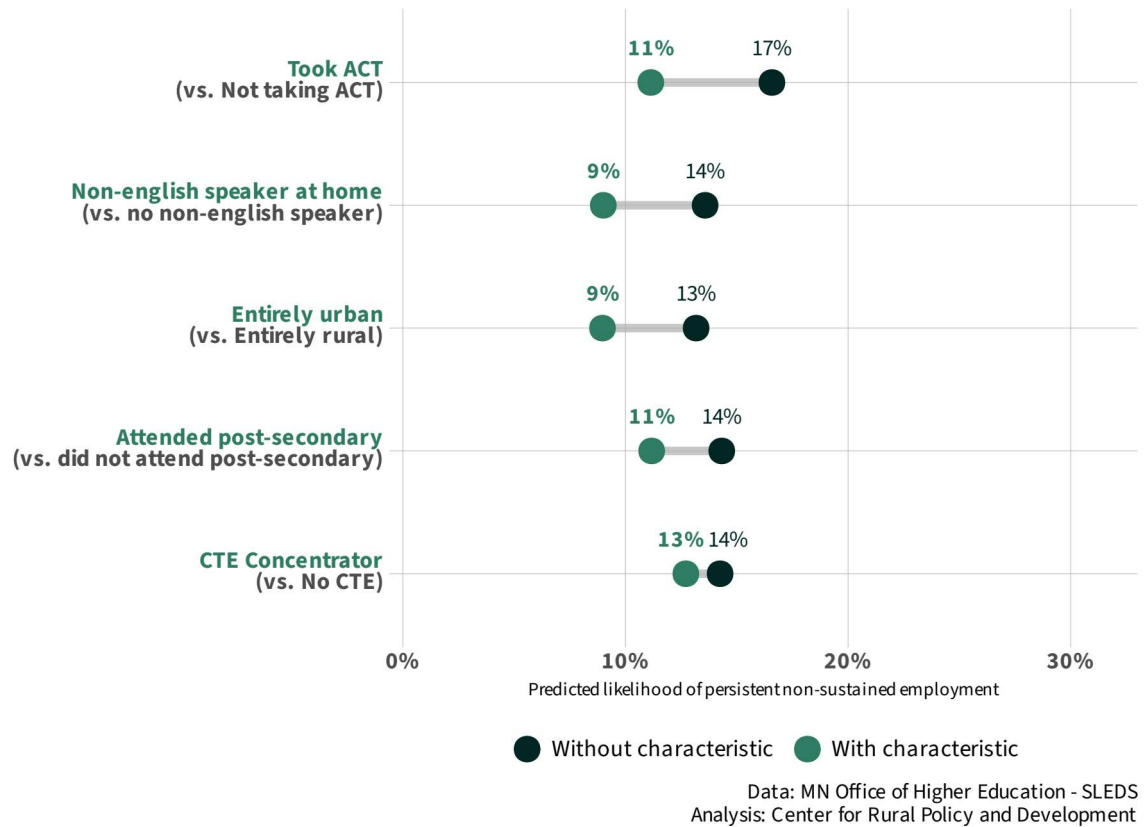


Figure 24: Predicted likelihood of persistent non-sustained employment, comparing otherwise similar non-college completers with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDS

The non-English home language finding echoes a related pattern found earlier: this same characteristic was independently associated with a higher likelihood of completing a postsecondary credential, even after accounting for race and ethnicity. Taken together, these two findings suggest a consistent, positive pattern for this group across multiple stages of the pipeline.

CTE Concentrators showed the smallest effect of the five — a predicted 13% likelihood of persistent instability, compared to 14% for graduates with no CTE background. Though modest on its own, this finding fits a pattern seen throughout this report: CTE engagement consistently points toward stronger regional and workforce outcomes, whether measured through college location, sustained employment among completers, or protection from long-term instability among those who don’t complete college at all.

Taking the ACT showed the largest gap of the five — 11% compared to 17% for graduates who did not take it. As discussed above, this protective relationship applies specifically to the act of taking the test itself; among those who did take it, higher scores were independently associated with *greater*, not lower, risk of persistent instability. Simply attempting the test appears to matter here, separate from how a graduate performed on it.

Protections Against Persistent No MN Employment Record

While persistent instability showed five confirmed protective factors, no Minnesota employment record had seven (Figure 25).

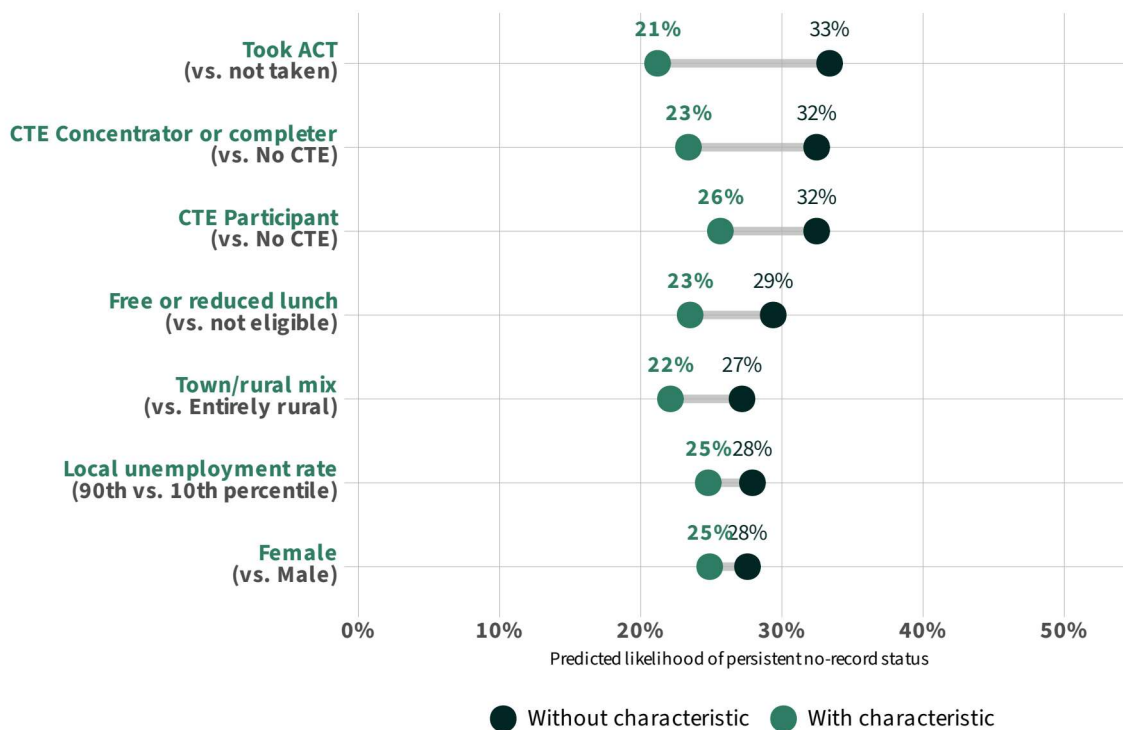
Taking the ACT stands out sharply from everything else in this chart: a predicted 21% likelihood of persistent no-record status, compared to 33% for otherwise similar non-test-takers. The 12-point gap is the largest identified in this pathway. As discussed earlier, this comes with an important caveat: this protective effect applies specifically to *taking* the test but not the score achieved. Among test-takers, a higher score was independently associated with somewhat *higher* odds of no-record status.

CTE engagement showed the next-largest effect, split across two levels of involvement: CTE Concentrators/Completers had a predicted 23% likelihood, compared to 32% for otherwise similar graduates with no CTE background (9-point gap) while CTE Participants showed a slightly smaller 6-point gap (26% vs. 32%), demonstrating once again that CTE tends to keep people local.

Economic disadvantage showed a comparable effect of its own (23% vs. 29%, a 6-point gap), while graduating from a town/rural mix community, female gender, and higher local unemployment all showed smaller, though still real, effects.

Figure 25: Predicted likelihood of persistent no-record status, comparing otherwise similar non-college completers with and without each characteristic. Data: Minnesota Office of Higher Education, SLEDs

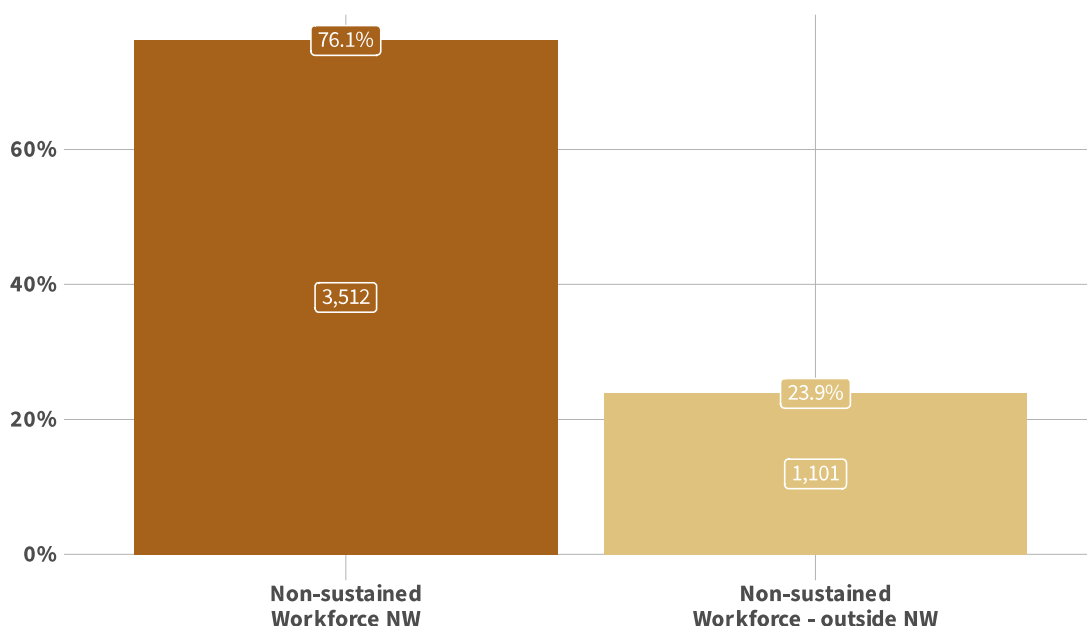
Female, higher local unemployment, economic disadvantage, CTE engagement, graduating from a town/rural mix district, and taking the ACT are all independently associated with lower odds of persistently having no Minnesota employment record



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

Most non-sustained employment among non-college graduates occurs within the region

Figure 26: Of those on the Disconnected Pathway who were categorized as having non-sustained workforce participation five years after formal education, nearly three-quarters were employed in the Northwest region. Data: Minnesota Office of Higher Education, SLEDs



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, over three-quarters (76%) were working within Northwest Minnesota, while the other 24% were working outside the region.

On the surface, the larger percentage of individuals in this group 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 neither explanation holds up here: the individuals have Minnesota employment records; they are already here, working in Northwest 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. This holds true whether they earned a two-year or four-year degree. In other words, 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. Also, taking the ACT is tied to a better shot at finishing college, but among students who do finish, both taking the ACT and scoring well on it are tied to leaving the region for that degree.

Career and Technical Education is the most reliable anchor to the region found anywhere in this analysis. CTE was tied to:

- Finishing college at a regional school;
- Steady regional employment among graduates who didn't finish college, especially in the first few years after high school;
- Steady regional employment among college completers, no matter what degree or where they earned it;
- Lower odds of having persistent instability in workforce participation, and
- Lower odds of falling off Minnesota's employment records for good.

No other high school experience points as consistently toward staying in — and staying visible in — the region's workforce. Interestingly, CTE has no real link to whether a student finishes college. Its effect is entirely about *where* someone ends up, not whether they get a degree. This suggests that investing in strong, well-connected CTE programs may be one of the best ways to improve outcomes for a wide range of students, not just those heading straight into the workforce.

For most groups, barriers pile up along the pipeline, but not for everyone, and not always in the same direction. Black, Hispanic, Asian/Pacific Islander, and English Learner students, along with students facing economic hardship or with a Special Education designation, face real barriers both to finishing college and to finding steady work afterward. These aren't separate problems showing up at different times — they're the same underlying issue showing up repeatedly across time.

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

- **American Indian students** face one of the steepest gaps in postsecondary completion found anywhere in this report but show no added risk

of either type of long-term disconnection from work. For this group, the gap seems to show up mainly at the postsecondary stage, not later on.

- **Economic hardship cuts both ways.** It raises the risk of unstable work, but it actually lowers the odds of falling off Minnesota’s employment records entirely.

Disconnection isn’t a single problem, and neither is disadvantage. These two 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 college exposure — even without finishing — helps, but not with everything. Among students who didn’t finish college, simply attending some kind of postsecondary program, even without earning a credential, was tied to a lower risk of unstable work. But it had no real link to whether someone dropped off Minnesota’s employment records. That’s a good reminder that these are two different problems, not two versions of the same one. Still, this points to a real opportunity: helping more students access and stick with some college, even if they don’t finish, may pay off — just not as a fix for every kind of disconnection.

The disconnected are already here. Among students who didn’t finish college, about a quarter were employed but below the threshold for sustained workforce participation five years after high school. The large majority of that group — 76.1% — were working within Northwest Minnesota itself, not elsewhere in the state. That means the real 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.

Some of the “no Minnesota employment record” numbers likely reflect the North Dakota border, not real disconnection, though we can’t say exactly how much. Northwest Minnesota sits right next to North Dakota, and big four-year schools just across that line pull in students and workers that Minnesota’s records can’t see. Some unknown share of what looks like disconnection in this report is probably just people working across the border. Future work — especially any way to bring in North Dakota or South Dakota employment data — would help sharpen this picture.

In closing

Northwest Minnesota’s path from high school to the workforce isn’t broken, but it isn’t smooth and problem-free either. For graduates who finish college in the region, the road to a stable, local job is fairly clear; that holds true whether they earn a two-year or four-year degree. For those who go straight into the workforce, hands-on career training in high school makes a real difference, but not every student is taking advantage of — or has access to — the opportunity. 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 Northwest 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. Where a specific comparison involves a small group of graduates, we've noted that directly rather than presenting it with the same confidence as 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 65,650 individuals who graduated from high schools in Northwest Minnesota — defined as Economic Development Regions 1 (Northwest), 2 (Headwaters), and 4 (West Central) — 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–Northwest (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.

