Office of Institutional Research and Decision Support

BALL STATE UNIVERSITY

THE RELATIONSHIP BETWEEN PRE-COLLEGE CREDIT AND STUDENT OUTCOMES AT BALL STATE

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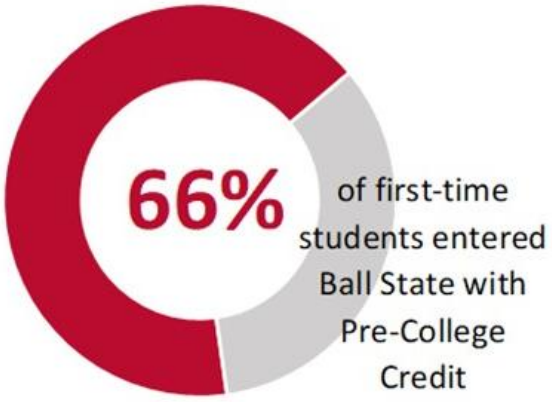
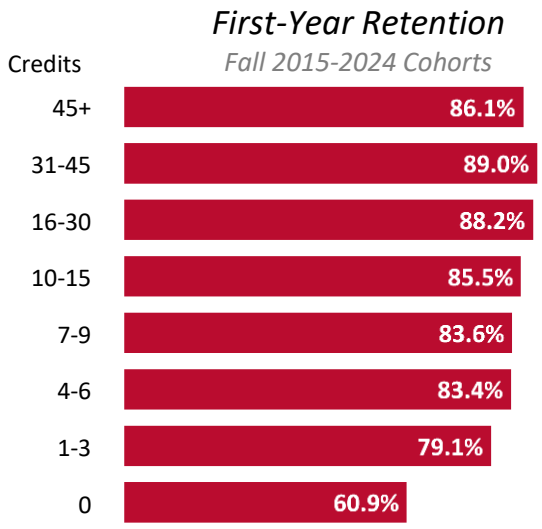
Executive Summary

This study examines how common pre-college credit was among incoming first-year students, how participation differed across student groups, and how it was associated with first-year and graduation outcomes. In this report, pre-college credit includes college credit earned before entering Ball State through dual credit, Advanced Placement (AP), International Baccalaureate (IB), and military credit.

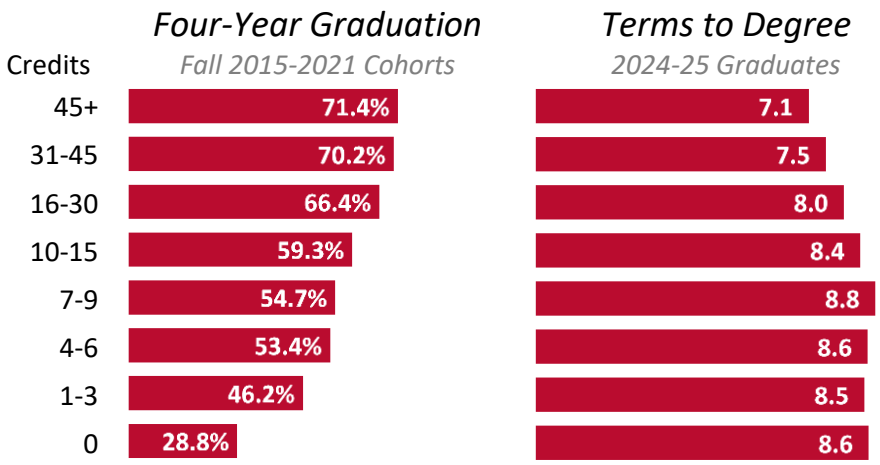
Most incoming students brought some pre-college credit, but participation patterns differed by background and academic preparation. 66% of incoming first-time, full-time, bachelor degree seeking students between Fall 2015 and 2024 entered with some form of pre-college credit. Dual credit was the most common type, followed by AP credit. Participation in pre-college credit varied across student groups, with lower rates among Pell-eligible and first-generation students. Pre-college credit was strongly associated with prior academic performance; students with higher high school GPAs were more likely to arrive with credit and more likely to bring in larger amounts.



Pre-college credit can be viewed as a signal of college readiness. Students entering with pre-college credit tended to have higher first-year retention and stronger academic performance than those without pre-college credit. The largest difference in retention was between students with no pre-college credit, at 60.9%, and students with 1 to 3 credits, at 79.1%, suggesting that even a small amount of pre-college credit distinguished students from peers who entered with none. After that initial jump, retention remained relatively high across the remaining credit groups. Similar differences between students with no pre-college credit and students with some pre-college credit also appeared for first-year cumulative GPA, credits earned, and course passage rate.



Pre-college credit improved the likelihood of graduating on time, but acceleration toward early graduation occurred mainly at the highest credit totals. Students with pre-college credit were more likely to graduate within four years, with graduation rates increasing as credit totals increased. However, among students who graduated, the average terms to degree remained close to eight. Noticeable decreases in terms to degree emerged only among those who entered with more than a year's worth of credit.



Higher levels of pre-college credit were associated with lower net tuition cost. Net tuition cost generally declined as students entered with larger amounts of pre-college credit. This relationship remained after accounting for student background, academic preparation, and high school context.

Students' backgrounds and high school GPA explained part of the pre-college credit advantage, while pre-college credit was still linked to stronger outcomes within student subgroups. The relationship between pre-college credit and most student outcomes became smaller after accounting for Pell eligibility, first-generation status, high school context, and especially high school GPA. This suggests that pre-college credit reflected, in part, differences in students' backgrounds and academic preparation before entering Ball State. Although predicted outcomes differed across Pell status, first-generation status, and race/ethnicity groups, students with more pre-college credit generally had stronger outcomes within each group than their peers without pre-college credit.

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Overview of Report and Research Approach

Report Structure

This report begins with an overview of the study's design before turning to the findings. The first section summarizes the research questions, methods, dataset, and key definitions used in the study. The next sections describe the pre-college credit students brought to Ball State, examine first-year and graduation outcomes, and consider variation by student subgroup and credit type. The report concludes by connecting the findings to prior research and identifying avenues for future research. Technical details, additional analyses, and regression results are included in the appendices.

Research Questions

This report addresses three primary questions:

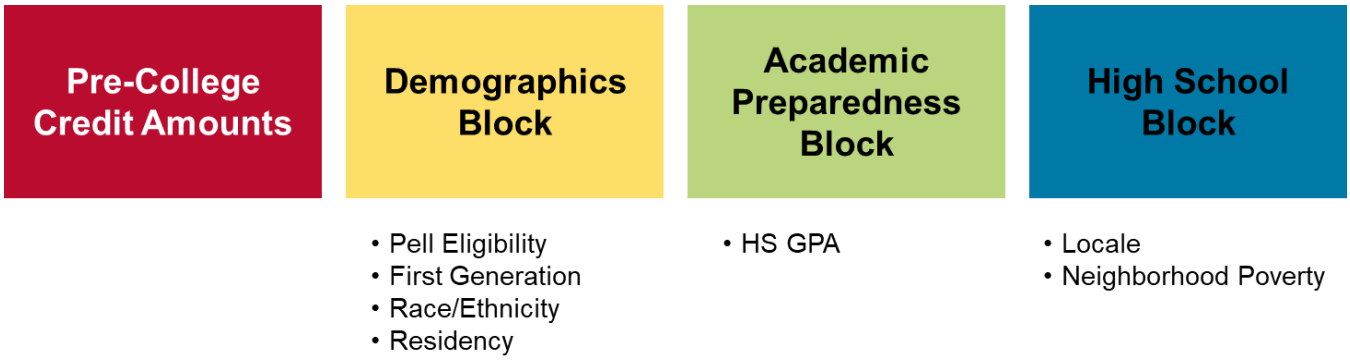
- To what extent do pre-college credit patterns vary across student characteristics, including demographics and prior academic performance?
- What is the relationship between pre-college credit and college outcomes, such as retention, graduation, academic performance, and financial metrics?
- To what extent is pre-college credit associated with college outcomes, after accounting for students' socioeconomic background, high school context, and academic preparedness?

Methods Summary

The study paired descriptive statistics with block regression models. First, descriptive analyses were used to explore patterns in pre-college credit participation, credit amount, and outcomes across student groups and cohorts. Then, regression models were conducted to examine whether the observed relationships between pre-college credit and student outcomes remained after accounting for other factors. The type of regression model varied by outcome, with logistic regression used for binary outcomes, linear regression used for continuous outcomes, and Poisson regression used for count-based outcomes.

The block regression approach added control variables in stages. The first block focused on pre-college credit measures. Later blocks, as shown in Figure 1, added demographic and socioeconomic characteristics, academic preparedness in the form of high school GPA, and high school context variables. This approach made it possible to assess how the estimated relationship between pre-college credit and outcomes changed as additional controls were added.

Figure 1. Block Regression Diagram



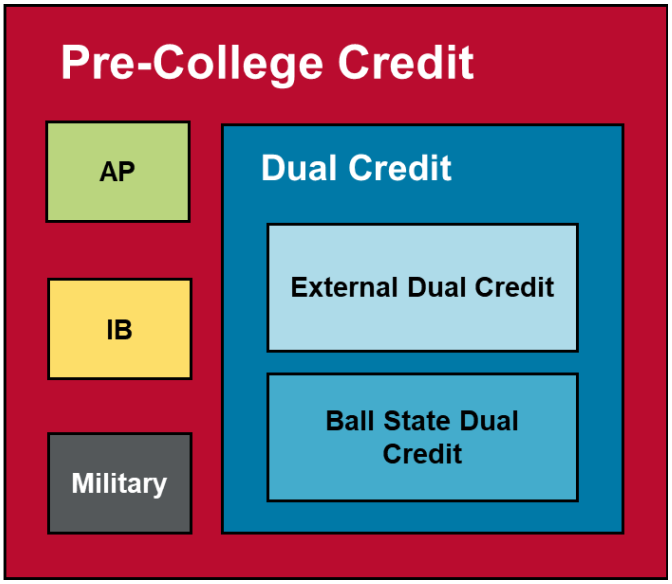
Dataset

The dataset included 36,624 first-time, full-time, bachelor's degree-seeking students who entered Ball State in fall cohorts from Fall 2015 through Fall 2024. The size of the analytic sample varied by outcome. For example, recent cohorts were excluded from four-year and six-year graduation analyses because they had not yet had sufficient time to graduate. Additionally, some outcomes were examined only among students who graduated. Student-level records included pre-college credits, demographics, high school GPA, first-year academic performance, retention, and graduation. These records were linked to high school context data from the National Center for Education Statistics and the American Community Survey. Additional detail on variable definitions is provided in Appendix A.

Main Definitions

- Pre-College Credit: Pre-college credit refers to college credit a student earned before enrolling at Ball State, including credit from dual credit, Advanced Placement, International Baccalaureate, military training, and other recognized sources.
- Dual Credit: Dual credit refers broadly to college credit earned while a student was still in high school. Although dual credit and dual enrollment are sometimes defined separately, this study does not distinguish between them. This category includes college credit earned through high-school-based courses, online courses, and courses taken on a college campus.
- Advanced Placement (AP): Advanced Placement is a College Board program that offers college-level coursework and exams in high school, with colleges sometimes awarding credit based on exam scores.
- International Baccalaureate (IB): International Baccalaureate refers to an international academic program that may lead to college credit or placement.
- Military: Military credit refers to college credit awarded for military education, training, or service when recognized by the institution.

Figure 2. Type of Pre-College Credit Diagram



Acknowledgements

This report benefited from the contributions and feedback of campus partners and IRDS colleagues. Several campus stakeholders reviewed the research plan and provided feedback that helped shape the direction of the study. Staff from the Office of Admissions, especially Brian Barber and the Admission Operations staff, answered questions about how transfer credits are processed and recorded. Becca Polcz Rice provided important state policy context and reviewed an early version of the results.

Within IRDS, Tara Goering contributed substantially to the review of existing academic literature and helped connect prior research to this study's findings. The IRDS staff reviewed early results and helped strengthen the clarity and usefulness of the report.

Pre-College Credit of Incoming Students

This section describes how common pre-college credit was among incoming first-year students, what types of credit students earned, and how participation varied across student groups.

Table 1 shows that 65.8% of incoming students entered with some form of pre-college credit. Dual credit was the most common type, earned by 49.2% of students, followed by AP credit at 33.5%. Students can enter with credit from multiple sources, so categories are not mutually exclusive. IB credit and military credit were rare. Within dual credit, external dual credit accounted for the large majority of cases, while Ball State dual credit represented a much smaller share.

Table 1. Percent of Students with Pre-College Credit

Credit Type	Percent
Any Pre-College Credit	65.8%
Dual Credit	49.2%
External Dual Credit	47.4%
Ball State Dual Credit	4.2%
AP Credit	33.5%
IB Credit	0.7%
Military	0.3%

Participation in pre-college credit also varied across student groups. Figure 3 shows that Pell-eligible students and first-generation students were less likely to enter with any pre-college credit, dual credit, or AP credit. These descriptive differences suggest that access to pre-college credit was not evenly distributed across the study population. There are also signs of the emphasis placed on dual credit for Indiana high schools. Indiana residents outpaced out-of-state students in dual credit participation but lagged behind them in AP participation.

Figure 3. Share of Incoming Students with Pre-College Credit by Student Subgroup

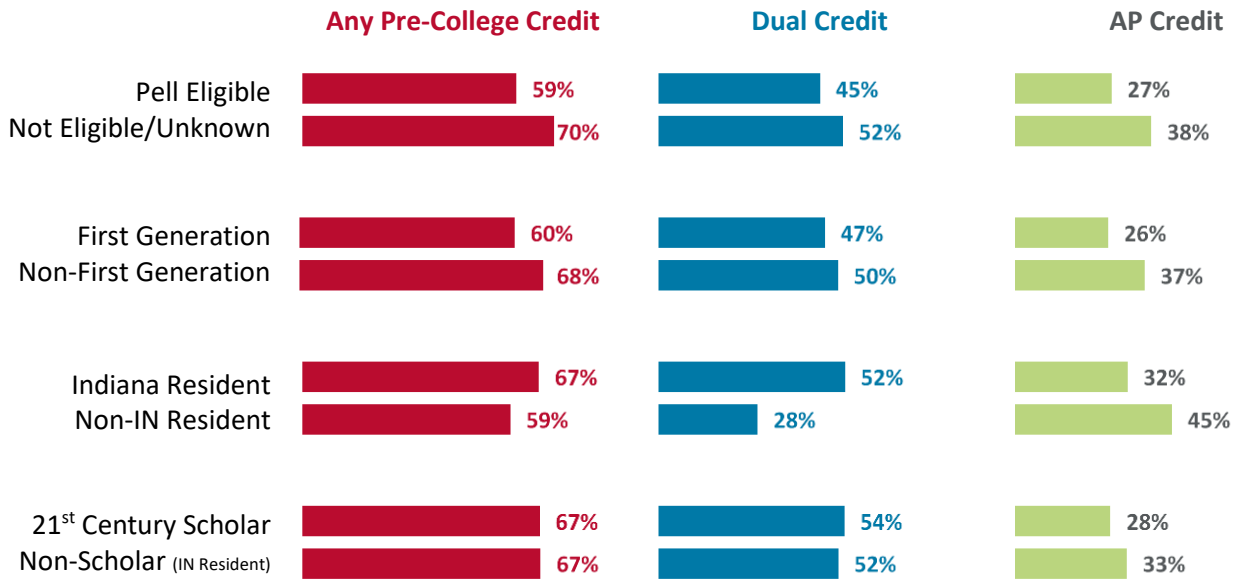
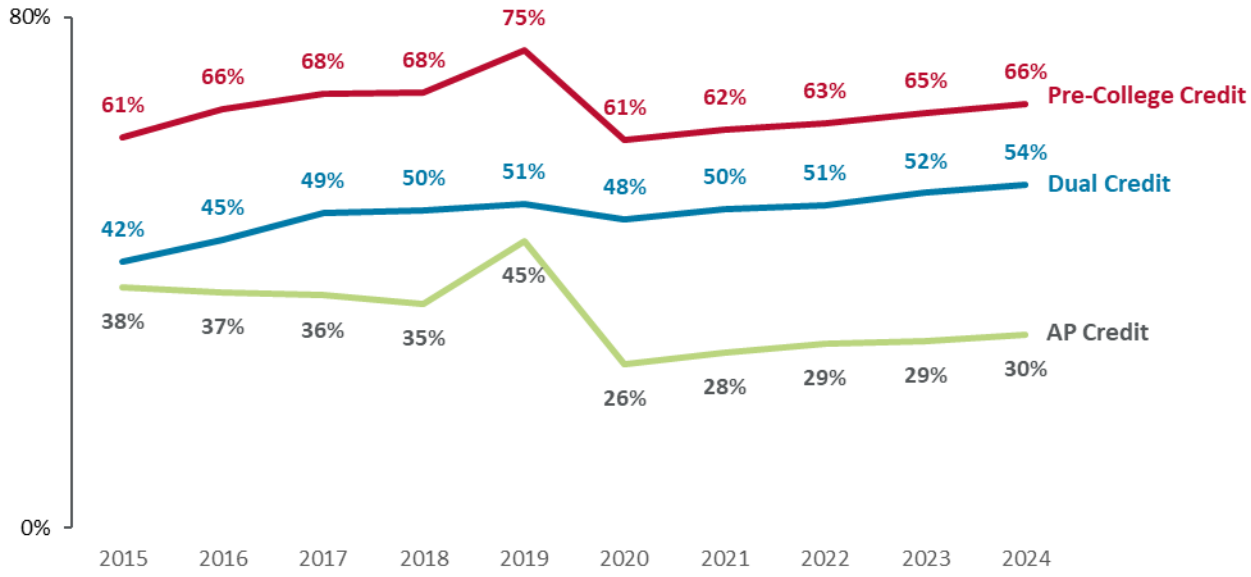


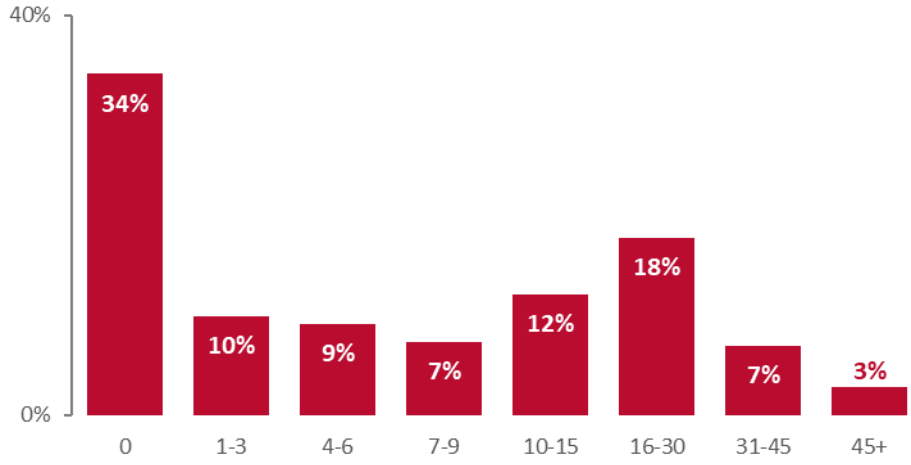
Figure 4 shows several patterns at once. The share of first-year students with any pre-college credit increased modestly from 61% in 2015 to 66% in 2024, with a temporary high of 75% in 2019. Dual credit followed a steadier upward pattern, rising from 42% in 2015 to 54% in 2024. AP credit participation had a different path. After reaching a high of 45% in 2019, the share of students entering with AP credit dropped sharply in 2020 to 26%, before steadily increasing to 30% in 2024.

Figure 4. Share of First-Year Students with Pre-College Credit, Fall 2015 to 2024



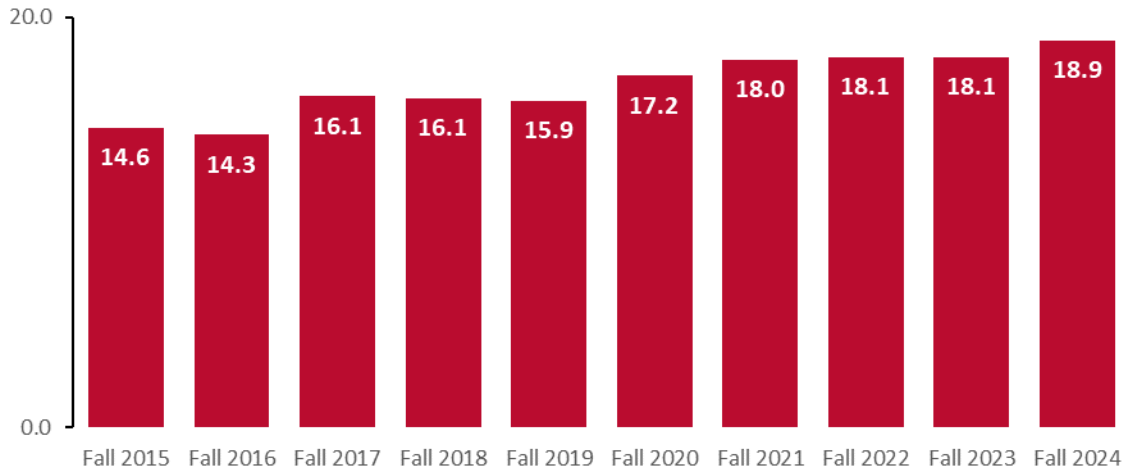
The amount of credit students brought with them also varied substantially. Figure 5 shows that the largest group was students with no pre-college credit (34%). More than a quarter of students entered with more than a term's worth of credit, including 18% with 16-30 credits, 7% with 31 to 45 credits, and 3% with 45 credits. In other words, roughly 10% of first-year students entered with two terms worth of pre-college credit.

Figure 5. Distribution of Pre-College Credit Amounts



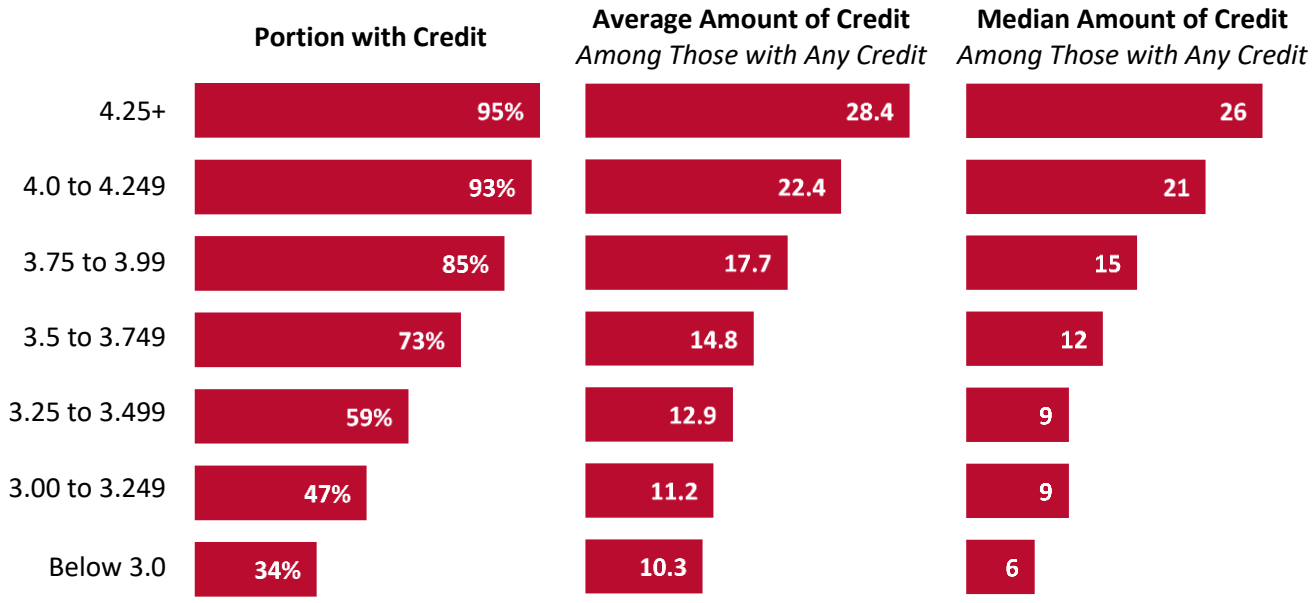
The average amount of pre-college credit increased over time among students who entered with any credit. Figure 6 shows that students in the Fall 2024 cohort entered with an average of 18.9 credits, more than four credits above the Fall 2015 average of 14.6.

Figure 6. Average Pre-College Credits Among Students with Any Pre-College Credit, Fall 2015 to 2024



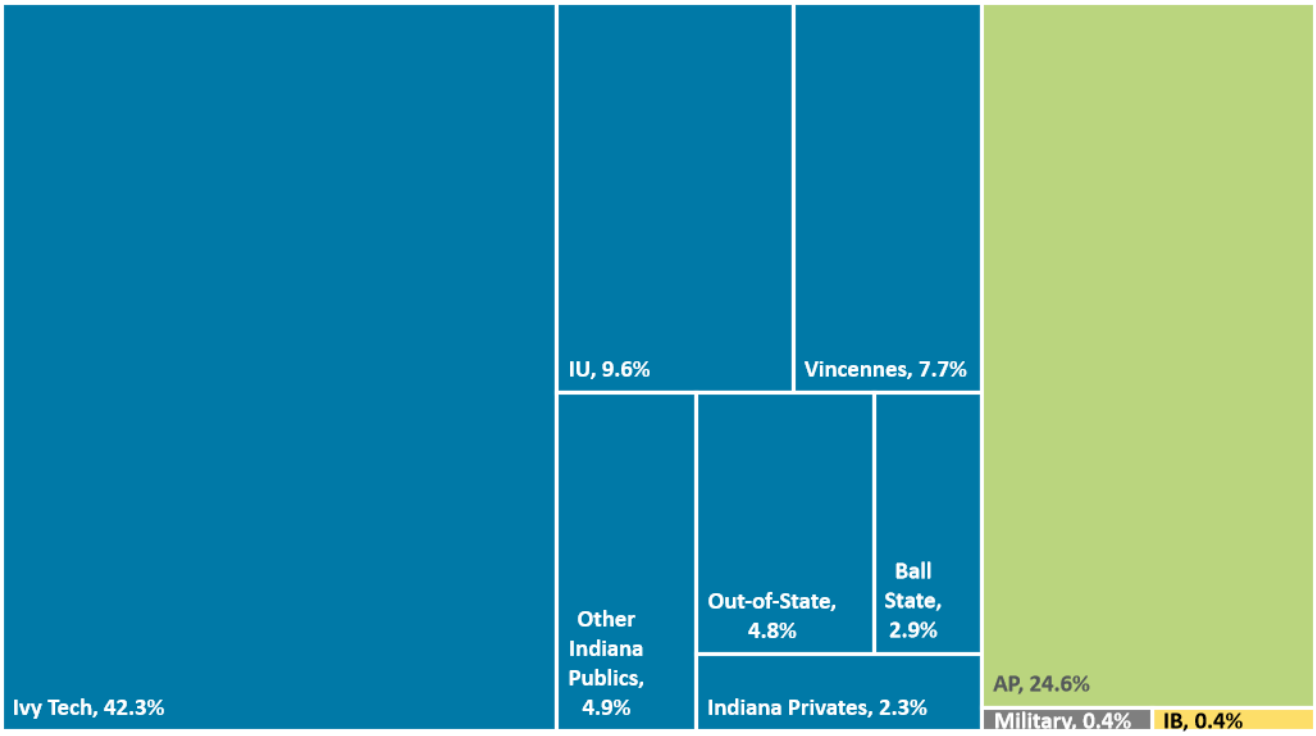
Pre-college credit was also strongly related to academic preparation at entry. Figure 7 shows that students with higher high school GPAs were much more likely to enter with pre-college credit and tended to bring in larger amounts of credit. Among students with a high school GPA below 3.0, only 34% entered with any pre-college credit, and their average number of credits was 10.3. On the other end, among students with a GPA of 4.25 or above, 95% entered with pre-college credit, and their average credit total was 28.4. In between these extremes, there was a steady increase in the share of students with credit, the average amount of credit, and the median amount of credit as high school GPA increased.

Figure 7. Pre-College Credit Participation and Amount by High School GPA



Pre-college credits awarded were concentrated in a relatively small number of sources. Figure 8 shows that Ivy Tech Community College accounted for the largest share of total pre-college credits awarded (42.3%), followed by AP credit (24.6%). Smaller shares came from Indiana University campuses, Vincennes University, other Indiana public institutions, Ball State, out-of-state institutions, and Indiana private institutions.

Figure 8. *Distribution of Pre-College Credits Awarded by Source*



These descriptive patterns help frame the outcome analyses that follow. Pre-college credit was common, but participation varied widely across student groups. Additionally, participation and the amount of pre-college credit was associated with high school GPA. The regression models in the following sections help separate these descriptive differences from associations that remained after accounting for student background and high school characteristics.

First-Year Outcomes

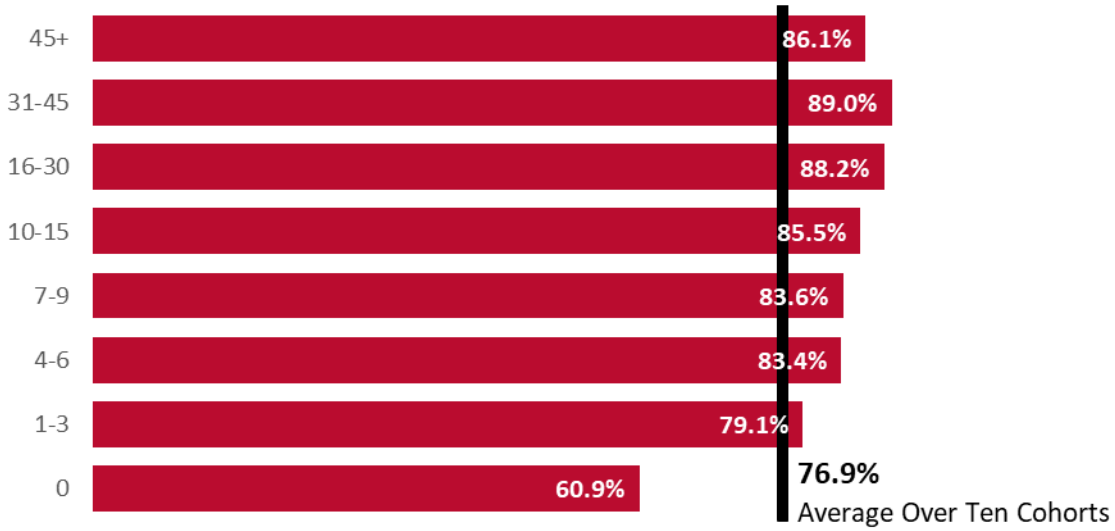
This section examines fall-to-fall retention, cumulative GPA, credits earned, and course passage rate in students' first year. Across these three outcomes, students entering with pre-college credit tended to have stronger performance than students who entered without pre-college credit. These patterns appeared in both the descriptive results and the regression-adjusted results. However, the differences became smaller after accounting for student background, high school context, and especially high school GPA.

Retention

Retention is examined first descriptively and then through block regression, which is designed to show how the relationship changes as additional control variables are introduced.

Figure 9 shows the descriptive pattern. Students who entered without any pre-college credit were retained at a rate of about 60.9%, well below the overall average of 76.9%. Retention rates increased steadily as students entered with more credit. Although the pattern leveled off somewhat at the highest credit levels, the overall descriptive relationship was clear.

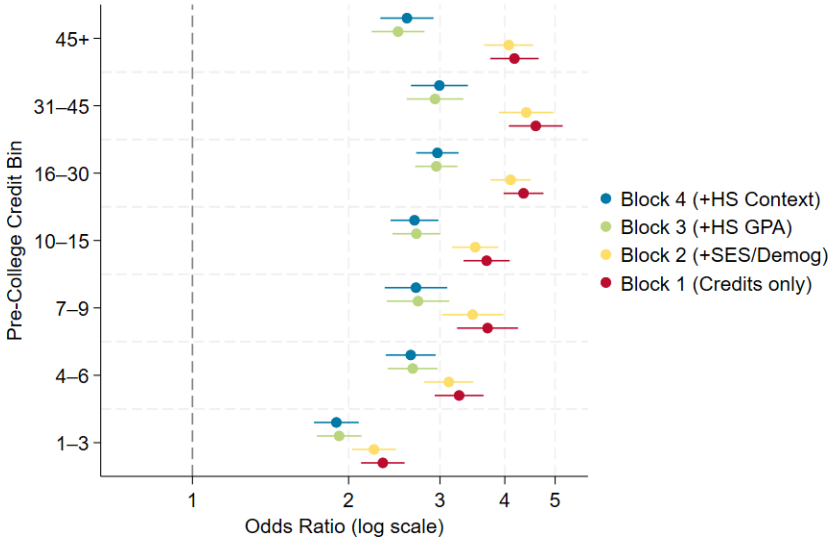
Figure 9. First-Year Retention Rate by Pre-College Credit Amount



To examine whether student background and preparation influenced this pattern, a block regression added control variables in stages to map how the relationship between pre-college and retention changed.

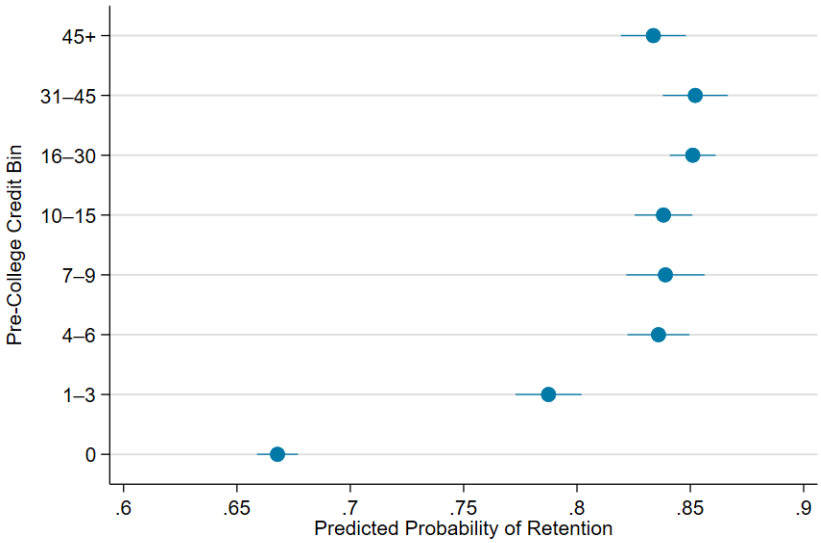
Figure 10 summarizes these regression results. As blocks were added, the association between pre-college credit and first-year retention became smaller, shown by the shifts to the left. These shifts indicate that part of the advantage was related to differences in student background, academic preparation, and high school context. The largest reduction, shown by a large shift to the left, occurred after high school GPA was added to the model. This suggests that academic preparation accounted for an important share of the relationship. Yet, the association did not disappear. In the fully adjusted model, the odds ratios for each pre-college credit categories remained above 1.0, indicating that students with pre-college credit continued to have higher odds of first-year retention than otherwise similar students with no pre-college credit.

Figure 10. First-Year Retention Rate by Pre-College Credit Amount



To make the results easier to interpret, Figure 11 translates the regression results to predicted retention rates. While controlling for background factors narrowed the differences compared to the raw descriptive numbers shown earlier in Figure 9, the overall pattern stayed the same. Students with 10 or more pre-college credits had predicted retention rates in the 83 to 85% range, compared with about 68% for students with no pre-college credit. Overall, these results suggest that pre-college credit retained a modest but consistent positive association with first-year retention even after adjustment for student and high school characteristics.

Figure 11. Modeled-Predicted First-Year Retention Rate by Pre-College Credit Amount

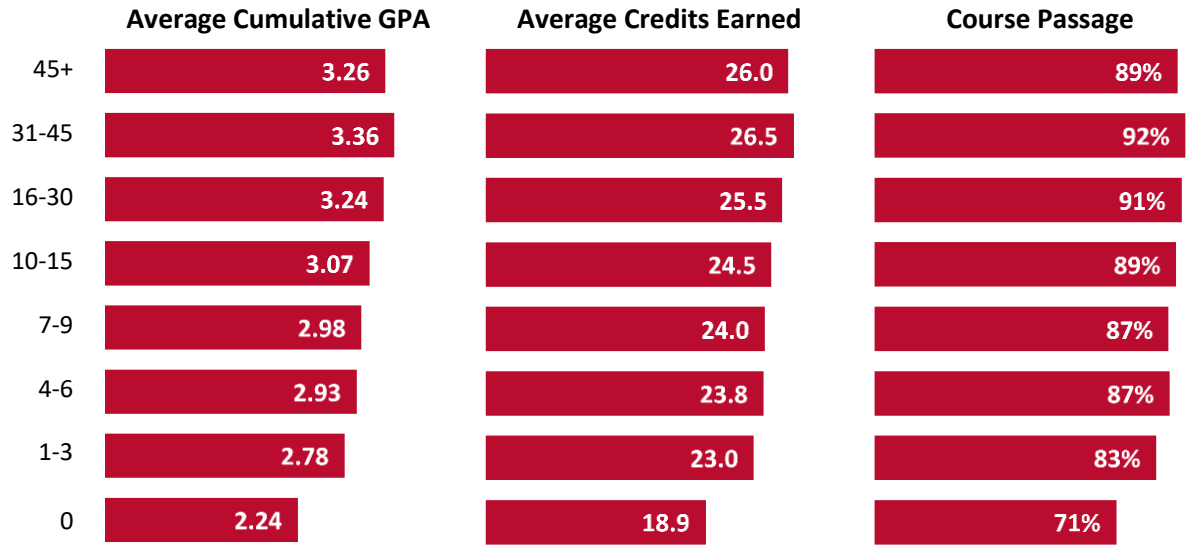


Academic Performance

In addition to fall-to-fall retention, the analysis examined three first-year academic performance outcomes: cumulative GPA, credits earned, and course passage rate. These measures provide a broad view of students' academic progress during the first year. Across all three outcomes, students entering with pre-college credit tended to have stronger academic performance than students who entered without it.

Figure 12 shows the descriptive pattern. Students who entered with no pre-college credit had the lowest average cumulative GPA, earned the fewest credits, and had the lowest course passage rate. As pre-college credit amounts increased, each outcome improved slightly. The largest improvement jump was between students with no pre-college credit and those with one to three credits. For example, the average cumulative GPA went from 2.24 among students with zero pre-college credit to 2.78 among those with one to three credits.

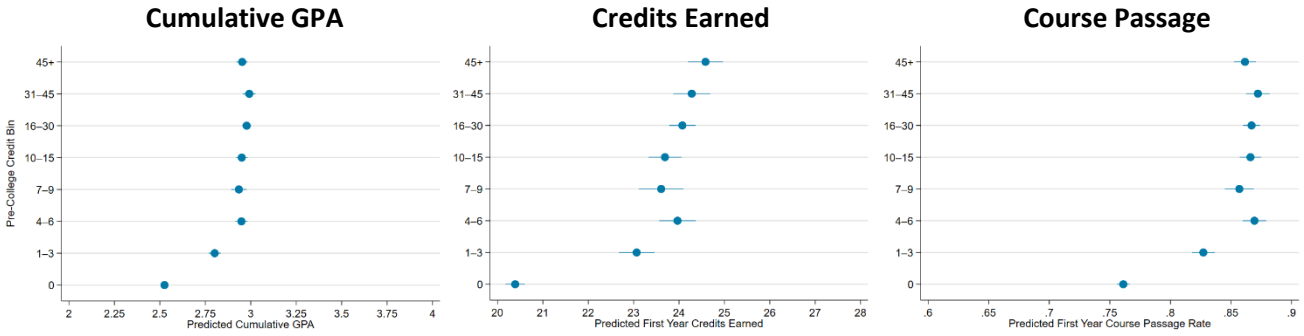
Figure 12. First-Year Academic Outcomes by Pre-College Credit Amount



After adjusting for high school GPA, Pell eligibility, first-generation status, residency, and high school context, the pattern became more modest but remained consistent.

Figure 13 shows the model-adjusted values. Students with pre-college credit had higher GPAs, earned more credits, and passed a higher percentage of their courses than students with no pre-college credit. These adjusted values were more tightly grouped across credit bins than in the descriptive results in Figure 12, indicating that part of the observed advantage was associated with differences in student background and academic preparation. Full regression tables and block regression figures are included in the appendix.

Figure 13. Model-Predicted First-Year Academic Outcomes by Pre-College Credit Amount



Looking at first-year outcomes as a whole, pre-college credit appeared to function partly as a signal of college readiness and preparation. Students entering with pre-college credit tended to have higher first-year retention and stronger academic performance than students without pre-college credit. These relationships lessened after accounting for student background, high school GPA, and high school context, but they did not disappear.

There's still a lingering question of the effect of pre-college credit versus other factors. The noticeable difference between students with no pre-college credit and those with only a small amount of credit (i.e., 1-3 credits) suggests that the relationship was unlikely to reflect the credit itself. Instead, pre-college credit may serve as a proxy for academic aptitude, college-going knowledge, family or school support, and students' ability to navigate college-credit opportunities before enrollment.

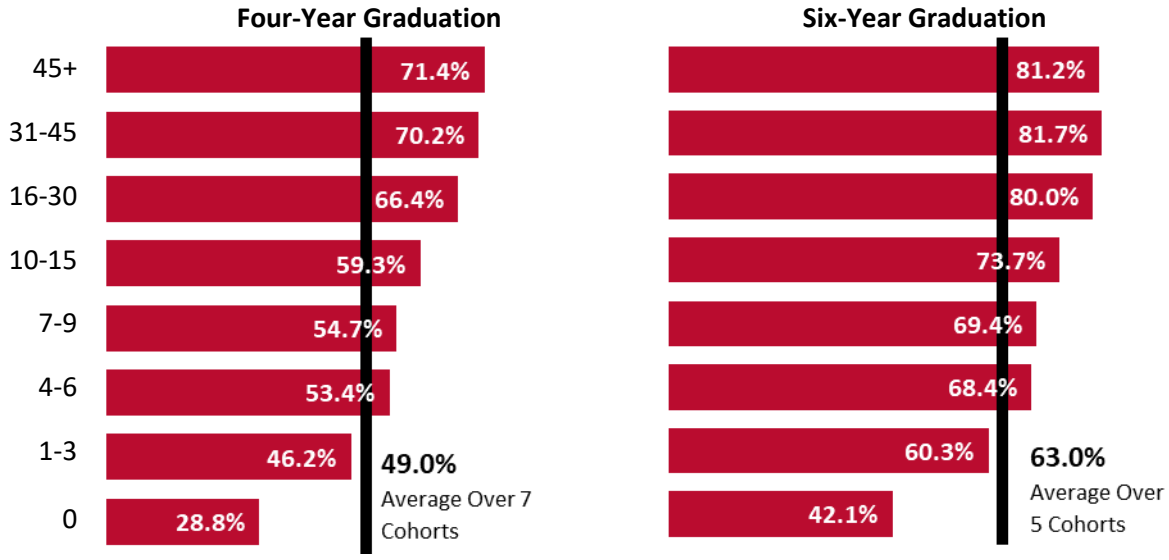
Graduation Outcomes

This section examines whether pre-college credit was associated with four-year and six-year graduation and then among graduates, their terms to degree and net tuition cost. Two patterns stand out. First, students with more pre-college credit were more likely to graduate within both four and six years. Second, pre-college credit did not generally translate into early graduation or lower net tuition cost unless students entered with relatively high credit totals.

Four-Year and Six-Year Graduation

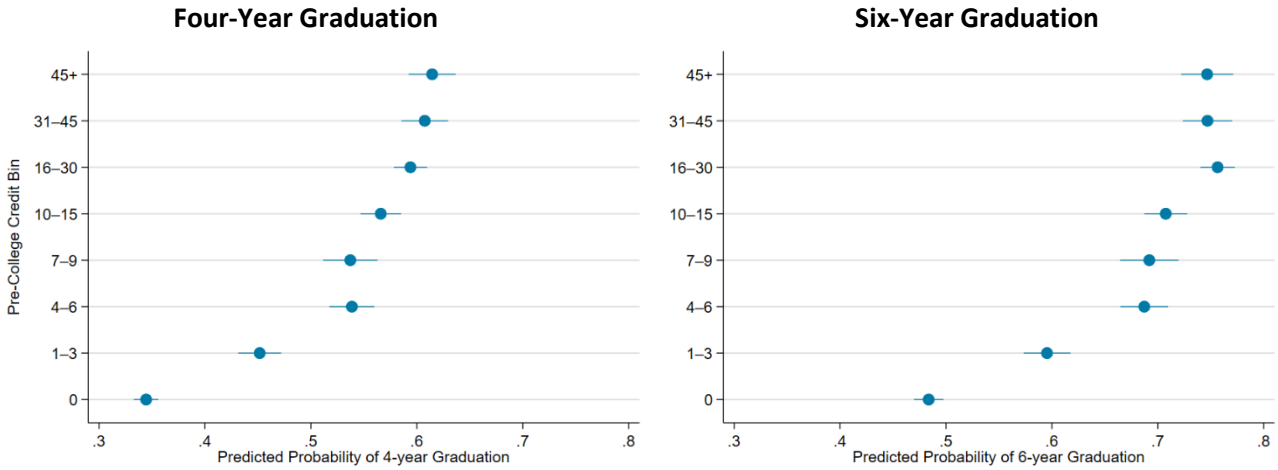
The descriptive results showed a clear upward graduation pattern across the pre-college credit bins. Figure 14 shows the descriptive graduation patterns. Students who entered with no pre-college credit had the lowest graduation rates, at 28.8% for four-year graduation and 42.1% for six-year graduation. Graduation rates increased as the amount of pre-college credit increased. Students in the two highest credit groups had the strongest four-year and six-year graduation rates, reaching above 70% and 80%, respectively.

Figure 14. Four-Year and Six-Year Graduation Rates by Pre-College Credit Bin



The pattern remained clear, after accounting for differences in student background, academic preparation, and high school context. Figure 15 presents predicted probabilities of four-year and six-year graduation based on models with all control variables included. Students with more pre-college credit had a higher likelihood of graduating within both four and six years than otherwise similar students with no pre-college credit. Overall, these results indicate that pre-college credit remained a consistent positive predictor of on-time graduation.

Figure 15. Predicted Probabilities of Four-Year and Six-Year Graduation by Pre-College Credit Bin

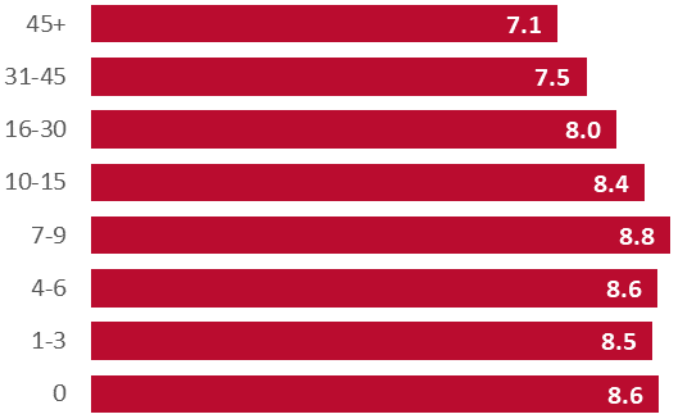


Terms to Degree

The graduation analyses above focused on whether students completed a degree. The next analyses focus only on students who graduated during Academic Year 2024-25. These analyses examine how long graduates took to finish and what their net tuition cost was. The results should be interpreted as comparisons among graduates rather than among all incoming students.

Despite the previous section showing on-time graduation rates increased with larger amounts of pre-college credit, there will a question of whether students graduated *early*. Early graduation is defined as completing a degree before the standard eight-term timeline. The average number of terms changed relatively little from 0 credits through about 15 credits, as shown in Figure 16, with all bins being above 8 terms. In other words, bringing in a small or moderate amount of pre-college credit did not typically translate into early graduation. At the largest bins there was a decrease in terms to degree. Graduates who entered with more than 45 credits graduated, on average, in 7.1 terms.

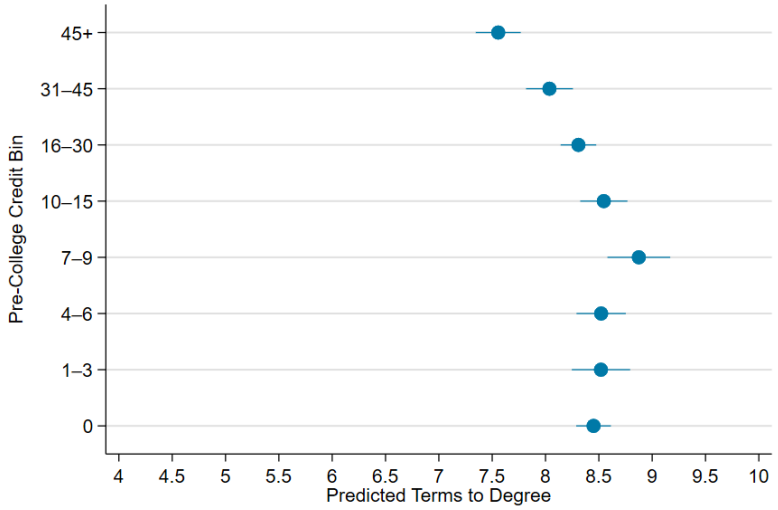
Figure 16. Average Terms to Degree Among Graduates by Pre-College Credit Bin



That pattern is reinforced in the adjusted results. Figure 17 shows predicted terms to degree. For most credit bins, the predicted values remained tightly clustered, indicating little change in time to degree once student

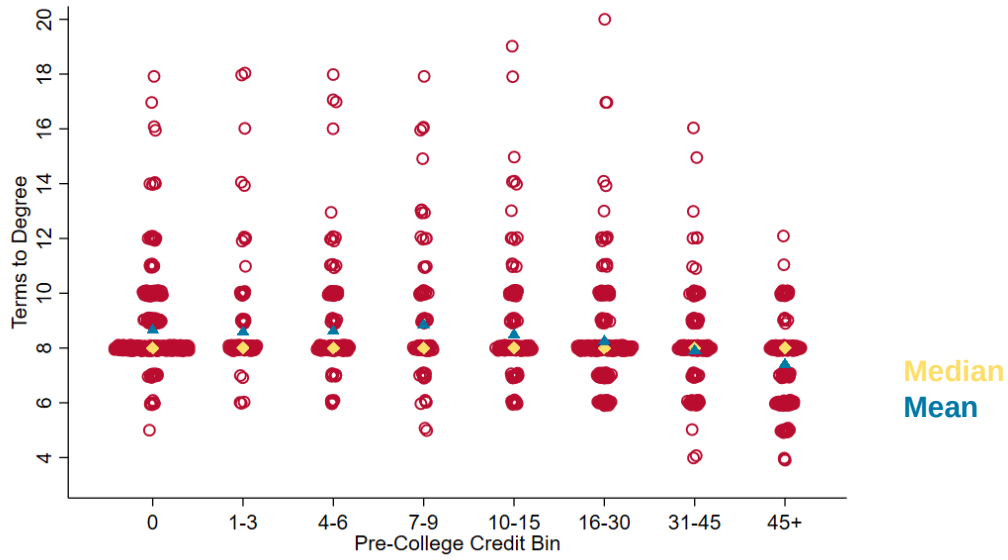
background and preparation were taken into account. Only at the highest credit levels did the predicted number of terms decline more noticeably. In other words, pre-college credit was associated with a higher likelihood of graduating, but acceleration toward early graduation was concentrated among students who entered with relatively large amounts of credit.

Figure 17. Predicted Terms to Degree Among Graduates by Pre-College Credit Bin



Returning back to descriptive analysis, Figure 18 provides a fuller view of the distribution of terms to degree by pre-college credit group. Although the distributions varied somewhat across groups, the median remained at eight terms, and noticeable acceleration appeared only among students with the highest credit totals. One additional and related pattern is that, among students in the 45+ credit group, no graduates took more than twelve terms to complete a degree.

Figure 18. Distribution of Terms to Degree Among Graduates by Pre-College Credit Bin



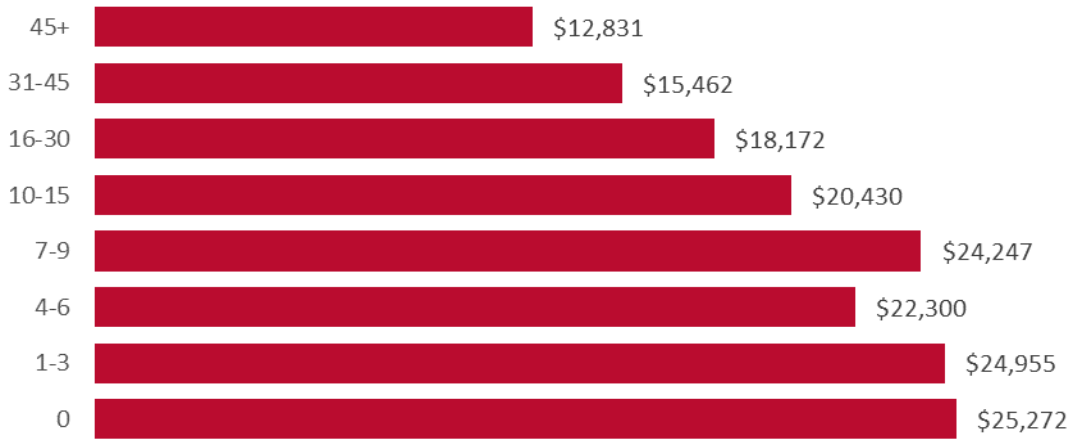
Net Tuition Cost

Net tuition cost generally declined as students entered with larger amounts of pre-college credit, but the adjusted results suggested that lower costs were concentrated mostly among students with higher credit totals.

Net tuition cost was defined as mandatory resident tuition and fees minus federal, state, and institutional gift aid. For this analysis, net tuition cost was bounded at zero. Students whose gift aid exceeded tuition and required fees were considered having a net tuition cost of $0 rather than a negative value. In short, the focus is on the amount of tuition and fees students were responsible for after gift aid.

The descriptive relationship between pre-college credit and net tuition cost is shown in Figure 19. Although the decline was not perfectly linear across credit bins, students with more pre-college credits generally had lower net tuition costs than students who entered with fewer credits.

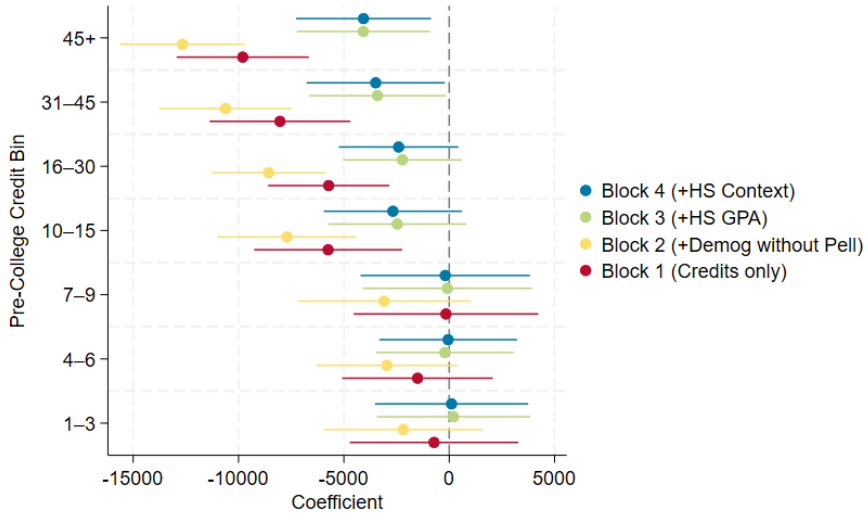
Figure 19. Descriptive Net Tuition Cost by Pre-College Credit Bin



The regression results show a more nuanced pattern. As with other outcomes, the relationship between pre-college credit and net tuition cost became weaker after high school GPA was added to the model, indicating that academic preparation explained a meaningful portion of the relationship.

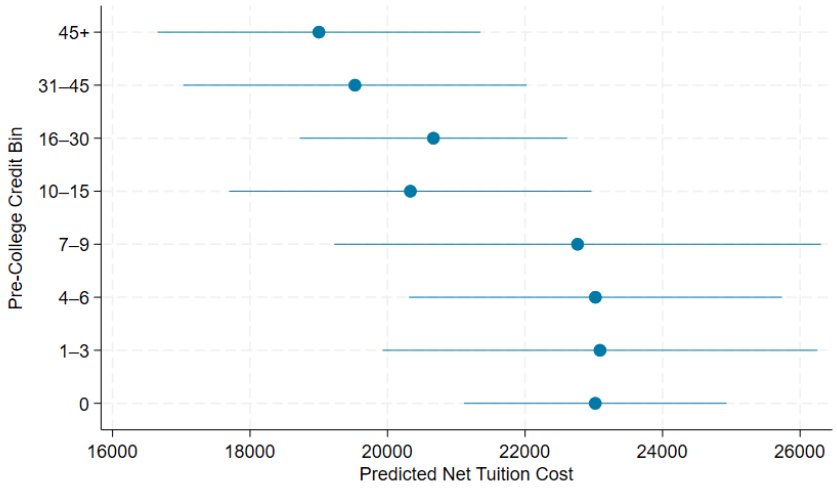
Figure 20 shows the block regression coefficients for net tuition cost by pre-college credit bin. Unlike the models for first-year and graduation outcomes, the association between pre-college credit and net tuition cost became stronger after demographic controls were added. This is shown by the yellow dots shifting to the left. The demographic block did not include Pell eligibility because Pell Grant aid was already reflected in net tuition cost. Residency was also not included because the analysis focused only on Indiana residents. As with other outcomes, the relationship between pre-college credit and net tuition cost became weaker after high school GPA was added to the model, indicating that academic preparation explained a meaningful portion of the relationship.

Figure 20. Block Regression Coefficients for Net Tuition Cost by Pre-College Credit Bin



The adjusted results suggest a threshold pattern. Figure 21 presents predicted net tuition costs from the fully adjusted model. Rather than showing a steady decline across every credit bin like in Figure 19, the predicted net tuition costs were relatively similar across the lower credit groups. Lower costs were most apparent among students entering with larger amounts of pre-college credit.

Figure 21. Predicted Net Tuition Cost by Pre-College Credit Bin



This pattern loosely mirrors the findings for terms to degree. A supplemental model, included in Table 10 in the appendix, included terms to degree as a predictor, since shorter enrollment pathways may contribute to lower net tuition cost. Terms to degree was a statistically significant predictor, and adding it further reduced the pre-college credit differences. This suggests that part of the lower net tuition cost associated with pre-college credit may operate through shorter time to degree.

Variation by Student Subgroup and Credit Type

This section examines whether the relationship between pre-college credit and student outcomes differed across key subgroups and whether outcomes varied by the type of pre-college credit. Using the same block regression framework as the earlier sections, the analysis added subgroup interactions and credit type comparisons to the models that included control variables, as shown in Figure 22.

Figure 22. Block Regression Diagram

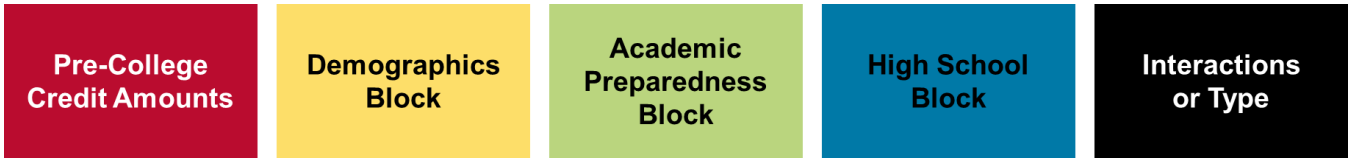
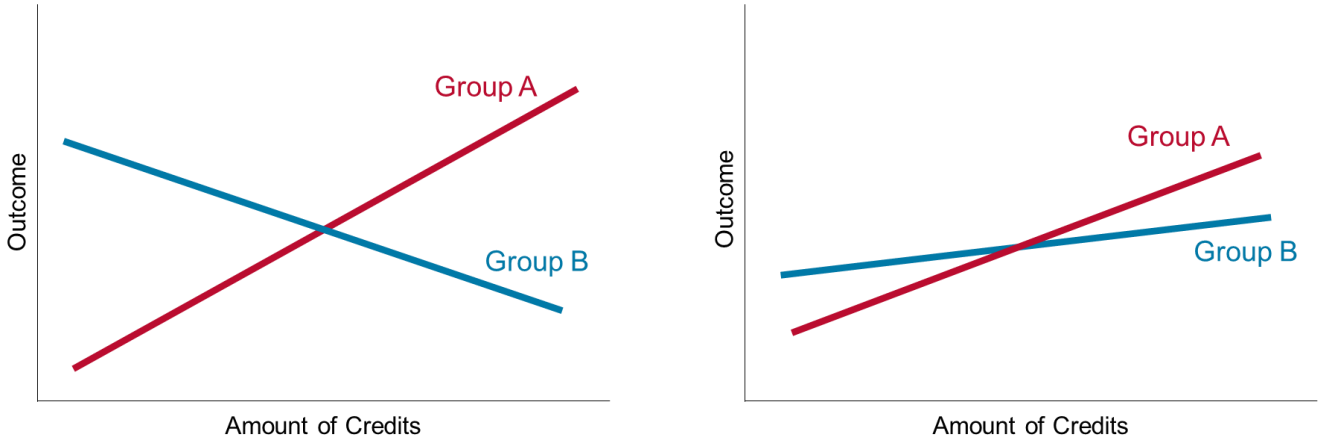


Figure 23 provides a conceptual illustration of possible interaction effects. An interaction would be present if the relationship between pre-college credit and an outcome differed meaningfully across groups. This could be if slope for one group was steeper than the slope for another group (like the right diagram) or moved in a different direction (like the left diagram). In the analyses presented in this section, such patterns were not observed.

Figure 23. Interaction Effect Examples



Figures 24, 25, and 26 show predicted outcomes by pre-college credit level for Pell status, first-generation status, and race/ethnicity. To start, the predicted outcomes differed across groups, as evidenced by blue lines being above the red and green lines. For example, the line for non-Pell-eligible students is higher than the Pell-eligible line, showing better outcomes for non-Pell students. However, we do not see interaction effects. The lines have similar slopes and there are very limited intersections of lines. In short, while there are baseline differences in outcomes between groups, the effect of pre-college credit on outcomes does not vary by student group. For all students, having more pre-college credit is related to better outcomes.

Figure 24. Predicted Probability of First-Year Retention by Pre-College Credit Level and Pell Eligibility

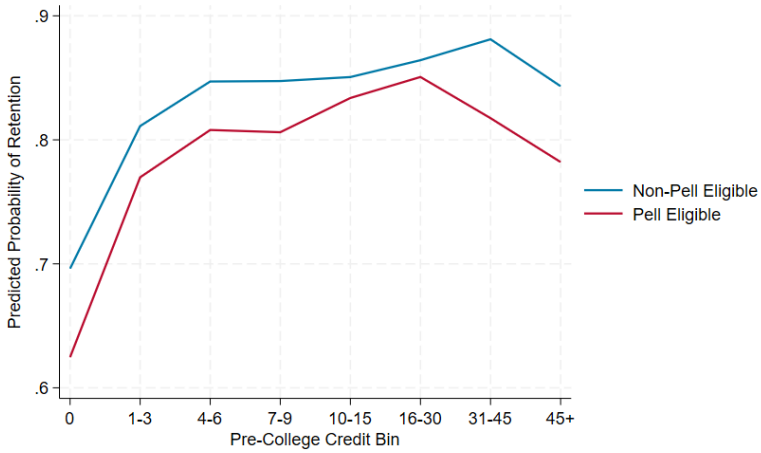


Figure 25. Predicted Probability of First-Year Retention by Pre-College Credit Level and First-Generation Status

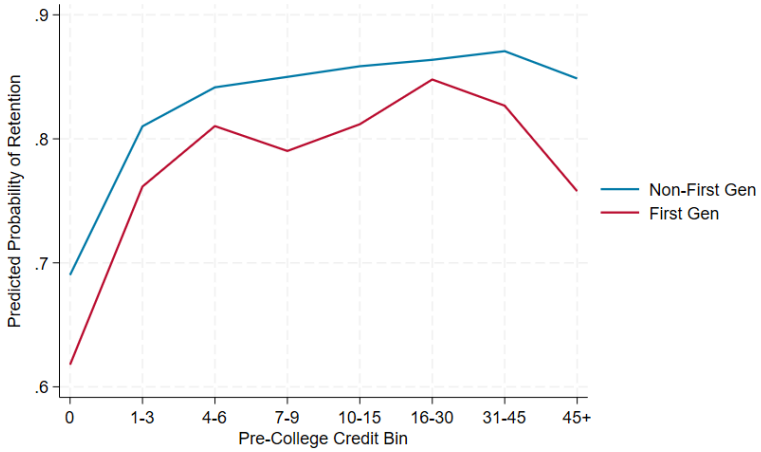
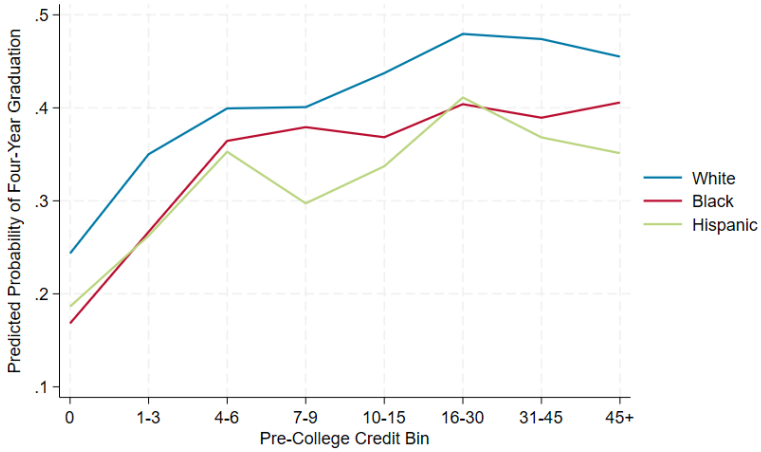
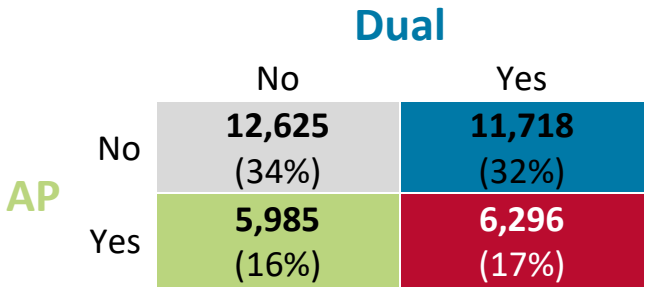


Figure 26. Predicted Probability of Four-Year Graduation by Pre-College Credit Level and Race/Ethnicity



A different pattern appeared when pre-college credit type was examined more closely. Figure 27 shows how students were distributed across AP and dual credit participation. About one-third of students entered with neither AP nor dual credit, about one-third entered with dual credit only, and smaller shares entered with AP only or both AP and dual credit.

Figure 27. Incoming Students by AP and Dual Credit Participation



Descriptive results indicate substantial variation in persistence and completion across these four credit groupings, with students with the combination of AP and dual credit having the highest retention and four-graduation rates.

Table 2. Retention and Graduation Rates by AP and Dual Credit Participation

Credit Type	First-Year Retention	Four-Year Graduation
AP & Dual Credit	91.2%	70.0%
AP Credit	84.4%	54.8%
Dual Credit	82.1%	56.4%
None	60.9%	28.8%

Figures 28 and 29 presented modeled outcomes for all four groups. Across outcomes, students with both AP and dual credit had the highest predicted probabilities of first-year retention and four-year graduation. In these results, the AP only group slides below the dual credit only group. This may be due to high school GPA being controlled for in the model, while being strongly correlated with AP participation itself. Despite this, the AP and dual credit combination group consistently had the strongest performance.

Figure 28. Predicted Probability of First-Year Retention by AP and Dual Credit Participation

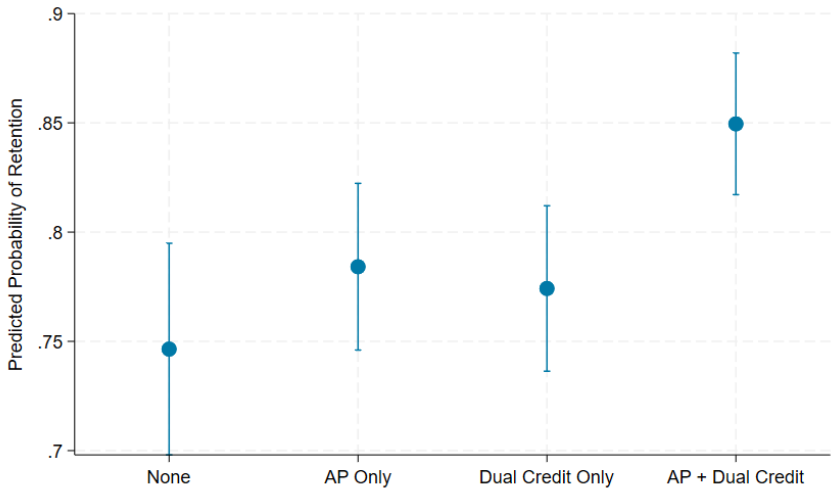
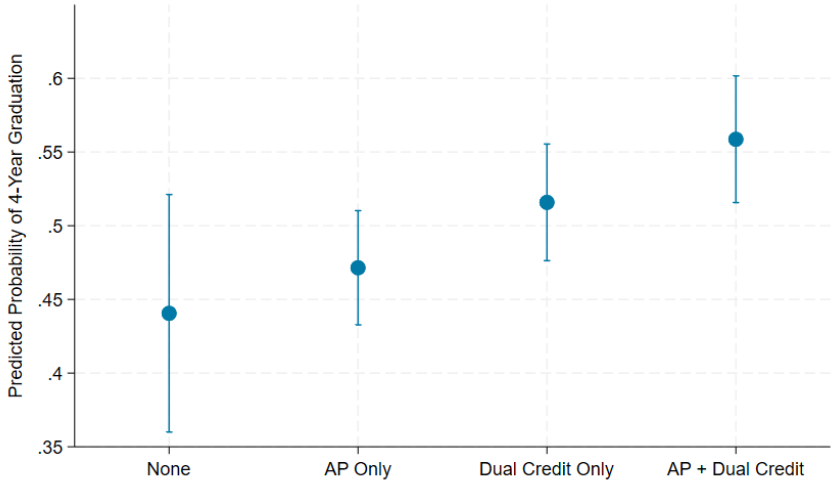


Figure 29. Predicted Probability of Four-Year Graduation by AP and Dual Credit Participation



Limitations

This analysis has several data limitations. First, the study identifies pre-college credit based on credit awarded by Ball State, rather than all college-level learning attempted while students were in high school. As a result, the analysis may not capture pre-college coursework or examinations that did not ultimately appear in Ball State's records as awarded credit. Second, the data do not distinguish between dual credit and dual enrollment. Third, the available data do not provide information about course modality or instructional setting, such as whether a course was taught in a high school, online, or on a college campus. All three distinctions may matter for understanding the observed relationships as well as students' own experiences, but they could not be examined here.

This study used observational data and regression models to examine associations between pre-college credit and student outcomes. It did not have an experimental or quasi-experimental design. Thus, findings should be interpreted as associations and not causal effects. Students who entered Ball State with pre-college credit differed from students who entered without it in several ways, including academic preparation and other background characteristics. The regression models accounted for many of these differences, but unmeasured factors still contribute to the patterns observed. In addition, the population was first-time, full-time, bachelor's-seeking students at Ball State, so the findings may not generalize to other student populations or institutional contexts.

Connections to Prior Research

This section connects the findings from this study to prior academic research and reports from the Indiana Commission for Higher Education. Overall, this study's results were consistent with prior work showing that pre-college credit is common, varies across student groups, and is associated with stronger college outcomes.

Most incoming students brought some pre-college credit, but participation patterns differed by background and academic preparation. This finding was consistent with statewide patterns reported by the Indiana Commission for Higher Education. In its 2021 Early College Credit Report, the Commission reported that 64% of Indiana high school graduates in 2018 earned dual credit, AP credit, or both, and that early college credit participation had grown over time (Indiana Commission for Higher Education [ICHE], 2021). The Commission also found persistent participation gaps, with lower dual credit participation among Black, Hispanic/Latino, and low-income students (ICHE, 2021). Prior academic research has similarly found that dual enrollment participation is often shaped by academic preparation and access, with high-achieving, White, and higher-SES students historically more likely to participate (An & Taylor, 2019).

High school characteristics were also associated with dual enrollment participation, with higher participation rates reported among smaller (vs. larger), public (vs. private), rural (vs. urban/suburban), and less affluent high schools (Lochmiller et al., 2016; Rivera et al., 2019; Xu et al., 2021). In addition to participation differences, prior research also found differences in the amount of dual enrollment credit accumulated, as students from both rural high schools and smaller high schools (fewer than 1,000 students) were more likely to have accumulated a greater number of dual enrollment credits than were their urban counterparts from larger schools (Rivera et al., 2019; Xu et al., 2021).

Pre-college credit can be viewed as a signal of college readiness. Our results showed that students entering with pre-college credit had stronger first-year outcomes than students entering without credit. This aligns with prior research showing that dual enrollment is associated with stronger college persistence, academic performance, degree completion, and time-to-degree outcomes (An & Taylor, 2019). In our report, the largest first-year differences appeared between students with no pre-college credit and students with only a small amount of credit, suggesting that the presence of pre-college credit may capture prior differences in preparation, momentum, or exposure to college-level expectations.

Prior academic research similarly suggests that the association between pre-college credit and stronger course performance, GPA, and greater cumulative credits earned was stronger for students with higher prior academic achievement (Brake, 2023; Crouse & Allen, 2014). Further, the association between pre-college credit and completion outcomes was stronger for students with higher prior academic achievement, in that academically stronger students tended to experience larger completion advantages associated with pre-college credit participation (Berger et al., 2013; Edmunds et al., 2020; Haxton et al., 2016; Miller et al., 2018).

Pre-college credit improved the likelihood of graduating on time, but acceleration toward earlier graduation occurred only at the highest credit totals. The Indiana Commission for Higher Education reported a similar broad pattern for dual credit, finding that dual credit earners were more likely to complete on time or early, and that students with larger amounts of dual credit were more likely to graduate early (ICHE, 2021). Our results add nuance to that pattern. Although students with pre-college credit were more likely to graduate within four and six years, their average terms to degree remained at or above eight, unless they brought in more than a year's worth of credit.

Academic research also supports the idea that dosage matters, but that it may matter differently depending on the outcome being studied. Multiple studies suggested a dosage effect, in that a greater number of pre-college credits was associated with higher rates of degree attainment (An, 2013; Brake, 2023; Burns et al., 2019). However, previous work suggests that dosage effects may involve thresholds rather than steady linear increases (An, 2013). Liu et al. (2025) found that the benefits of additional dual enrollment credits diminished for enrollment outcomes, while the benefits for bachelor's degree completion were more consistent across credit levels. This distinction fits our findings. The first-year outcome advantage was most visible between no credit and some credit, while graduation, terms to degree, and cost were more closely tied to higher credit totals.

Higher levels of pre-college credit were associated with lower net tuition cost. This finding connects directly to state policy discussions about pre-college credit as a cost-saving strategy. The Indiana Commission for Higher Education estimated that earning college credit in high school saved Indiana students roughly $82 million in potential tuition costs in 2018 (ICHE, 2021). This analysis extends that discussion by examining students' net tuition cost after gift aid. Net tuition cost generally declined as pre-college credit increased, and the regression-adjusted results showed the largest cost differences among students with the highest credit totals. This pattern aligns with the terms-to-degree findings, where noticeable acceleration toward earlier graduation also appeared mainly among students entering with more than a year's worth of credit.

Students' backgrounds and preparation explained part of the pre-college credit advantage, while pre-college credit was still linked to stronger outcomes within student subgroups. Prior academic research is mixed on the benefit of pre-college credit for less affluent students. Although economically disadvantaged students with pre-college credit remained less likely than affluent students with pre-college credit to complete a four-year degree, economically disadvantaged students with pre-college credit completed bachelor's degrees at higher rates than economically disadvantaged students without pre-college credit (Berger et al., 2013; Edmunds et al., 2020; Miller et al., 2018). Previous work further suggested that the lower likelihood of bachelor's degree completion among lower-income dual-enrolled students may reflect differences in prior academic preparation (Miller et al., 2018). An and Taylor (2019) summarized evidence that dual enrollment generally benefits students across race and SES groups, but that participation itself remains unequal. Our findings fit this pattern. Pre-college credit was associated with stronger outcomes within subgroups, but the uneven distribution of pre-college credit suggests that access and preparation remain central to interpreting those differences.

Avenues for Future Research

Credit Structure and Articulation

The Indiana College Core (ICC), formerly the Statewide Transfer General Education Core, is a block of 30 credit hours of college-level general education coursework that is guaranteed to transfer among Indiana public colleges and universities. Students can earn this certificate in high school. In our initial research plan we included a proposed analysis of ICC, but the number of first-time students entering with the completed credential was too low during the study period. As more first-time students enter Ball State with the ICC, research could compare their outcomes with those of all incoming students, as well as with students who enter with similarly high amounts of pre-college credit but without the completed ICC. This would help distinguish the role of total credit volume from the value of completing a full set of general education requirements.

Additional research could examine individual course patterns. For example, future analyses could identify the courses students most commonly transfer to Ball State and then examine how those students perform in later Ball State courses, including gateway courses, subsequent courses, and courses in the same subject. This could provide a more detailed understanding of the quality of pre-college credit.

Relatedly, future work could examine how pre-college credits apply toward Ball State degree requirements, not just how many credits students bring. Credits that satisfy general education requirements or major requirements may function differently from credits that count as electives. An added layer of this work could focus specifically on dual credit, examining whether outcomes differ for students whose credits came through priority liberal arts, career and technical education, or non-priority courses. These analyses could provide a more precise understanding whether and how pre-college credit helps progress toward a degree.

Student Pathways and Longer-Term Outcomes

Another avenue for future research would be to examine if and how students use the flexibility created by pre-college credit. Students who bring several terms worth of credit may have more room to pursue additional majors or minors, take lighter course loads in certain terms, or participate in experiential learning opportunities such as internships, study abroad, or immersive learning. Examining these patterns would help clarify whether pre-college credit contributes to outcomes beyond retention, graduation, and cost.

Other long-term research could study whether pre-college credit is associated with post-graduation outcomes, such as employment or continuing education. This might involve using First Destination Survey data, when coverage and response patterns allow for meaningful analysis.

Applied Use of Credit Information

Beyond studies of student outcomes, there are potentially ways to use information about pre-college credits across the university. Future work could explore how pre-college credit should be interpreted in admissions, enrollment planning, advising, and student success contexts. The findings in this report suggest that pre-college credit is associated with stronger outcomes. Caution is needed though. The results do not imply that pre-college credit participation or amounts should be used as standalone measures of student potential or readiness. Pre-college credit may also reflect opportunity, academic preparation, college-going knowledge, and support before enrollment. Used too heavily, a pre-college credit measure could reinforce existing differences in access and preparation. Used carefully, such a measure may provide useful context alongside high school GPA, coursework, and other indicators.

Finally, future research could test whether including students' pre-college credit amounts improves predictive models for first-year retention. This work would need to account for a practical limitation. Because students submit official transcripts and test scores at different times, pre-college credit information may not be complete when advising or early outreach decisions are made. Comparing statistical models based on data available at different points in time (e.g., at orientation, at the start of the fall semester, and later in the first year) would help clarify if and when students' pre-college credit records add value for predictive analytics.

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Appendix A – Technical Notes

Pre-College Credit Identification

Pre-college credits were identified in two ways.

First, external pre-college credits were drawn from transfer credit records. To identify credits likely earned before college entry, the analysis used both the date the transcript was received and the attendance dates reported on the transcript, focusing on credits received before or during the student's first fall term and associated with pre-enrollment attendance. These records were classified by source using institution descriptions and institution codes, including Advanced Placement, International Baccalaureate, military credit, and external transfer credit.

Second, Ball State dual credit was identified separately from course registration records by selecting courses taken while the student was a high school student and excluding unsuccessful grades such as F, NC, and W.

Together, these sources captured pre-college credit earned externally and through Ball State.

High School Context Variables and Matching Method

High school context variables were collected from public data sources and then matched to the rest of the dataset.

Locale codes came from the National Center for Education Statistics (NCES), whose framework classifies individual schools by geographic locations into City, Suburb, Town, and Rural categories.

Neighborhood socioeconomic context was estimated using tract-level poverty estimates from the 2015–2019 American Community Survey five-year data, accessed through NHGIS. This measure reflects the poverty rate of the census tract associated with the high school's location and must be interpreted as a school-neighborhood context measure rather than a direct measure of each student's household or residential neighborhood.

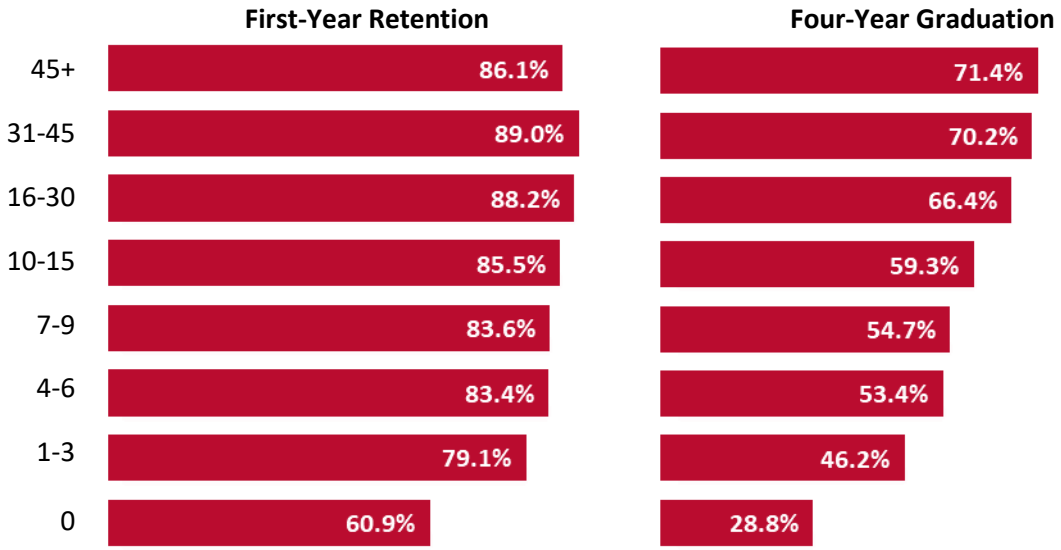
For each high school, the final context file included school name, state, city, county, longitude, latitude, NCES locale code and label, and a neighborhood poverty measure.

These school-level variables were merged to the student data (including student characteristics, pre-college credit information, and outcomes) using school-name, state, city, and county keys. The multi-phase matching process first looked for exact school name, state, and county matches and then unique school name and state matches. The last phase was a restricted fuzzy match within state for remaining unmatched schools. All original student records were retained, with high school context variables added when a reliable school match was made.

Appendix B – Additional Look at Low Credit Groups

This appendix provides an additional look of students at the lower end of the pre-college credit distribution. Earlier descriptive and regression-adjusted results indicated that the largest difference in outcomes appeared between students with no pre-college credit and students with only 1-3 credits. As repeated in Figure 27, students with 0 credits were retained at a rate of 60.9%, compared with 79.1% for students with 1 to 3 credits. A similar pattern occurred with four-year graduation rates. The rate jumped from 28.8% among students with no credit to 46.2% among students with 1 to 3 credits. These large shifts motivated a closer look at the two lowest credit groups. This sensitivity analysis relied on propensity score weighting to compare students in the 0-credit and 1-to-3-credit groups.

Figure 30. First-Year Retention and Four-Year Graduation Rates by Pre-College Amount



To start, students with zero credits were compared to students with 1-3 credits on demographic and high school variables, and there were several differences. Relative to students with 1 to 3 credits, students with no pre-college credit were more likely to be Pell-eligible, first-generation, and non-white. They also tended to have lower high school GPAs and were more likely to come from rural or town high schools. These differences suggested that part of the descriptive gap between the two groups reflected differences in student background and academic preparation rather than pre-college credit alone.

To strengthen the comparison between students with 0 credits and those with 1 to 3 credits, propensity score weighting was used in addition to regression adjustment. The purpose of the weighting procedure was to better balance the two groups on observed covariates before estimating differences in outcomes. This weighting approach served a similar purpose as regression adjustment, but at a different stage of the analysis. Regression adjustment controlled for observed covariates *within* the model, whereas propensity score weighting makes adjustments *before* modeling.

Figure 31 illustrates how the first-year retention gap between students with 0 credits and those with 1 to 3 credits changed after propensity score weighting and regression adjustment. In the unadjusted comparison, the retention gap was 15.8 percentage points, with rates of 62.0% for the 0-credit group and 77.8% for the 1-to-3-credit group. After adjustment, the gap narrowed to 10.5 percentage points. This narrowing of the gap means a

portion of that original 15.8 percentage point gap was from observable differences between the groups. Yet, a sizeable portion was left unexplained. The amount due to unobserved characteristics (i.e., data we do not have) versus the effect attributable to pre-college credit is unknown.

Figure 31. First-Year Retention Propensity Score Weight and Regression Adjustment Summary

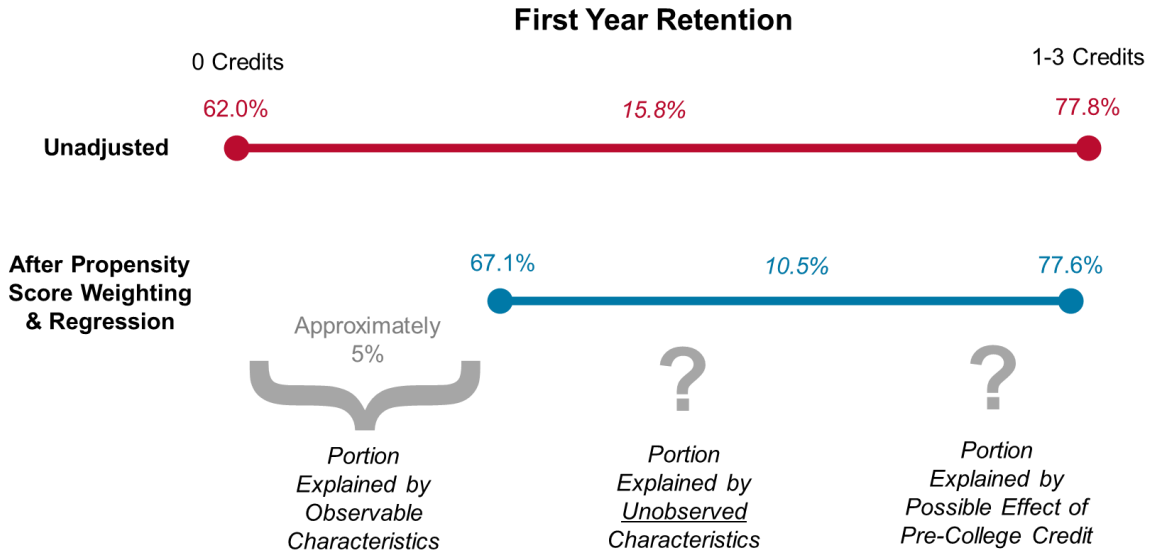
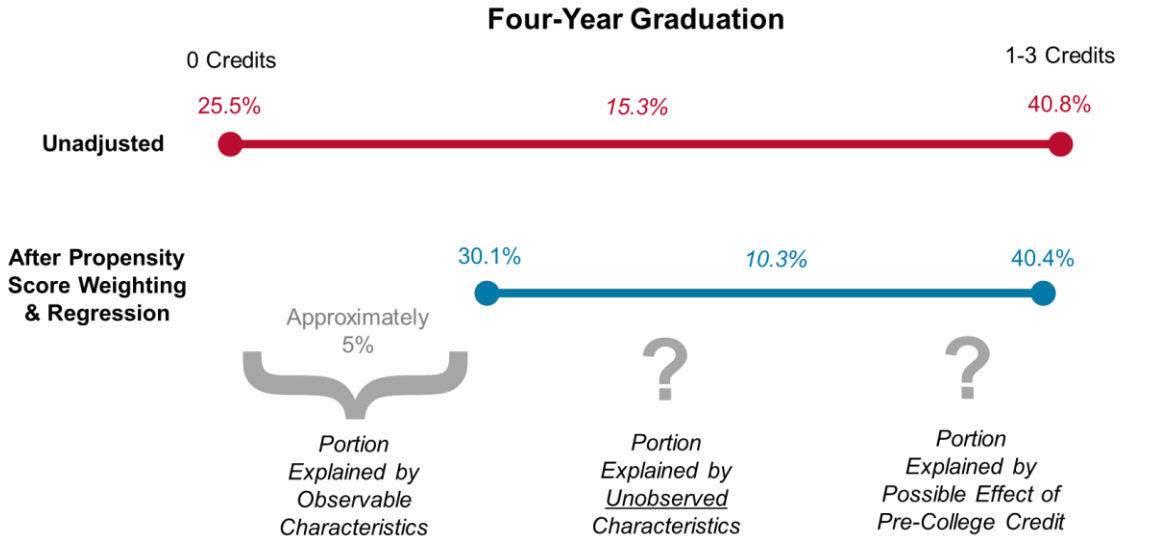


Figure 32 shows a similar pattern for four-year graduation. Starting with the unadjusted difference, the gap between the two groups was 15.3 percentage points. After propensity score weighting and regression adjustment, the gap narrowed to 10.3 percentage points. This reduction indicates that part of the original difference was associated with differences in measured background characteristics, but not all of it.

Figure 32. Four-Year Graduation Propensity Score Weight and Regression Adjustment Summary



Appendix C – Regression Results

Table 3. First-Year Retention – Block Logistic Regression Results

	(1)	(2)	(3)	(4)
	OR	OR	OR	OR
Pre-College Credit Bin (Ref: 0)				
1-3	2.371***	2.299***	2.006***	1.982***
4-6	3.147***	3.014***	2.568***	2.545***
7-9	3.303***	3.150***	2.550***	2.536***
10-15	3.802***	3.647***	2.785***	2.790***
16-30	4.819***	4.555***	3.097***	3.142***
31-45	5.335***	5.025***	2.989***	3.101***
45+	3.882***	3.803***	2.275***	2.317***
Residency (IN Resident vs Non)		0.874**	1.048	1.068
Pell Eligibility (Pell Eligible vs Non)		0.722***	0.732***	0.753***
First Generation (First Gen vs Non)		0.716***	0.717***	0.732***
Race/Ethnicity (Ref: White)				
Black		0.999	1.058	1.032
Hispanic		0.898*	0.940	0.923
Asian		1.118	1.076	1.042
Two+ Races		0.859*	0.888	0.877*
Other/Unknown		0.927	0.956	0.957
Nonresident		2.253	2.706	2.728
High School GPA (Ref: Below 3.0)				
3.00 to 3.249			1.257***	1.269***
3.25 to 3.499			1.514***	1.539***
3.5 to 3.749			1.784***	1.825***
3.75 to 3.99			2.281***	2.344***
4.0 to 4.249			2.983***	3.066***
4.25+			3.334***	3.414***
High School Locale (Ref: Urban)				
Suburban				1.017
Town				0.793***
Rural				0.912*
High School Neighborhood Poverty				0.993***
Observations	33,644	33,644	33,644	33,644
AIC	33604.997	33200.739	32749.643	32696.597
BIC	33672.386	33343.940	32943.386	32924.034

Table 4. First-Year Cumulative GPA – Block Linear Regression Results

	(1) Coef	(2) Coef	(3) Coef	(4) Coef
Pre-College Credit Bin (Ref: 0)				
1-3	0.541***	0.497***	0.313***	0.303***
4-6	0.681***	0.629***	0.411***	0.402***
7-9	0.748***	0.683***	0.409***	0.400***
10-15	0.844***	0.786***	0.443***	0.440***
16-30	1.006***	0.938***	0.463***	0.467***
31-45	1.138***	1.067***	0.465***	0.486***
45+	1.018***	0.987***	0.383***	0.400***
Residency (IN Resident vs Non)		-0.379***	-0.176***	-0.152***
Pell Eligibility (Pell Eligible vs Non)		-0.220***	-0.190***	-0.168***
First Generation (First Gen vs Non)		-0.179***	-0.168***	-0.152***
Race/Ethnicity (Ref: White)				
Black		-0.230***	-0.159***	-0.166***
Hispanic		-0.073***	-0.015	-0.025
Asian		0.087*	0.042	0.023
Two+ Races		-0.133***	-0.089***	-0.094***
Other/Unknown		-0.119**	-0.087*	-0.085*
Nonresident		0.004	0.173	0.197
High School GPA (Ref: Below 3.0)				
3.00 to 3.249			0.235***	0.243***
3.25 to 3.499			0.459***	0.471***
3.5 to 3.749			0.705***	0.723***
3.75 to 3.99			0.944***	0.966***
4.0 to 4.249			1.180***	1.200***
4.25+			1.261***	1.282***
High School Locale (Ref: Urban)				
Suburban				0.047***
Town				-0.147***
Rural				-0.034*
High School Neighborhood Poverty				-0.006***
Constant	2.235***	2.791***	2.222***	2.249***
Observations	30,436	30,436	30,436	30,436
R-squared	0.164	0.209	0.310	0.316
RMSE	0.968	0.941	0.879	0.875

Figure 33. First-Year Cumulative GPA – Coefficient Plot

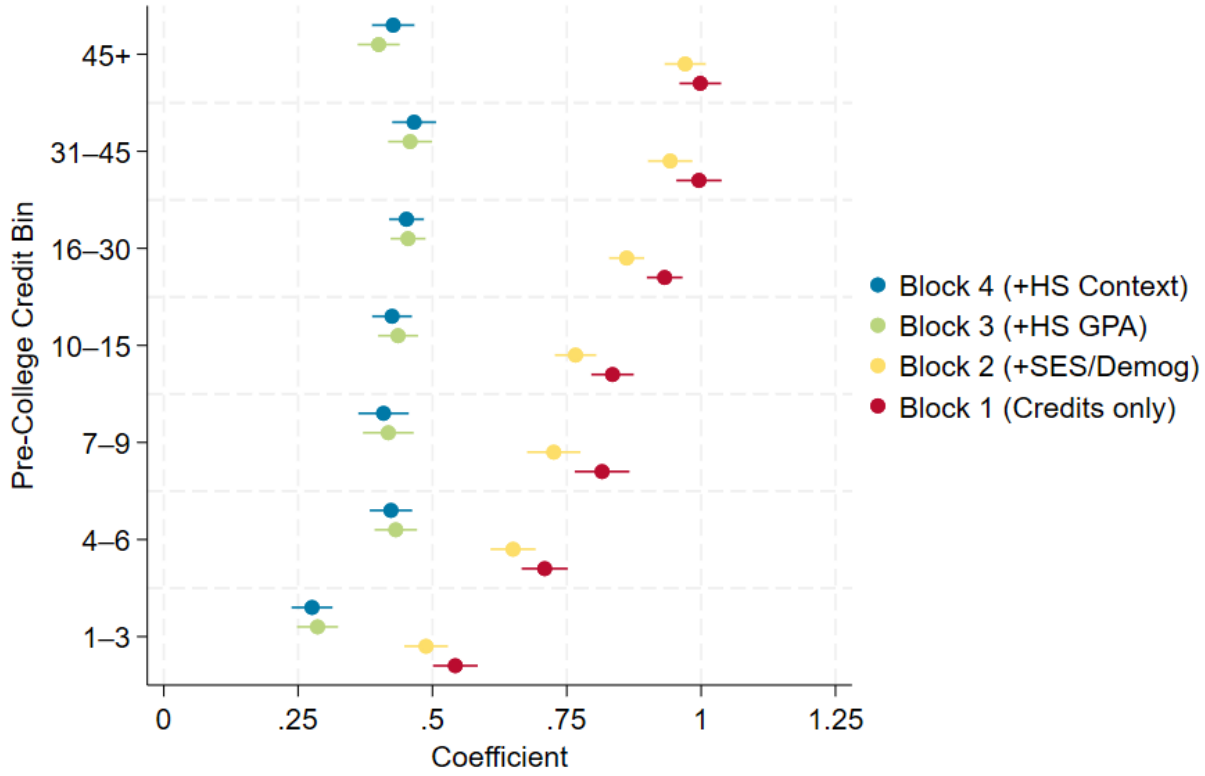


Table 5. First-Year Credits Earned - Block Linear Regression Results

	(1) Coef	(2) Coef	(3) Coef	(4) Coef
Pre-College Credit Bin (Ref: 0)				
1-3	4.124***	3.982***	2.991***	2.909***
4-6	4.889***	4.717***	3.546***	3.473***
7-9	5.097***	4.890***	3.381***	3.316***
10-15	5.665***	5.487***	3.583***	3.552***
16-30	6.564***	6.352***	3.696***	3.723***
31-45	7.683***	7.496***	4.052***	4.193***
45+	7.098***	7.028***	3.567***	3.694***
Residency (IN Resident vs Non)		-1.553***	-0.397*	-0.214
Pell Eligibility (Pell Eligible vs Non)		-1.020***	-0.860***	-0.688***
First Generation (First Gen vs Non)		-1.026***	-0.959***	-0.837***
Race/Ethnicity (Ref: White)				
Black		-0.120	0.283	0.255
Hispanic		0.688**	1.030***	0.956***
Asian		1.710***	1.476**	1.338**
Two+ Races		-0.362	-0.128	-0.159
Other/Unknown		-0.072	0.101	0.115
Nonresident		3.996	4.999*	5.188*
High School GPA (Ref: Below 3.0)				
3.00 to 3.249			1.649***	1.710***
3.25 to 3.499			2.999***	3.097***
3.5 to 3.749			4.079***	4.219***
3.75 to 3.99			5.225***	5.391***
4.0 to 4.249			7.071***	7.236***
4.25+			7.638***	7.807***
High School Locale (Ref: Urban)				
Suburban				0.385*
Town				-1.072***
Rural				-0.231
High School Neighborhood Poverty				-0.045***
Constant	18.902***	21.081***	17.656***	17.852***
Observations	33,644	33,644	33,644	33,644
R-squared	0.065	0.072	0.101	0.105
RMSE	10.929	10.885	10.714	10.695

Figure 34. First-Year Credits Earned – Coefficient Plot

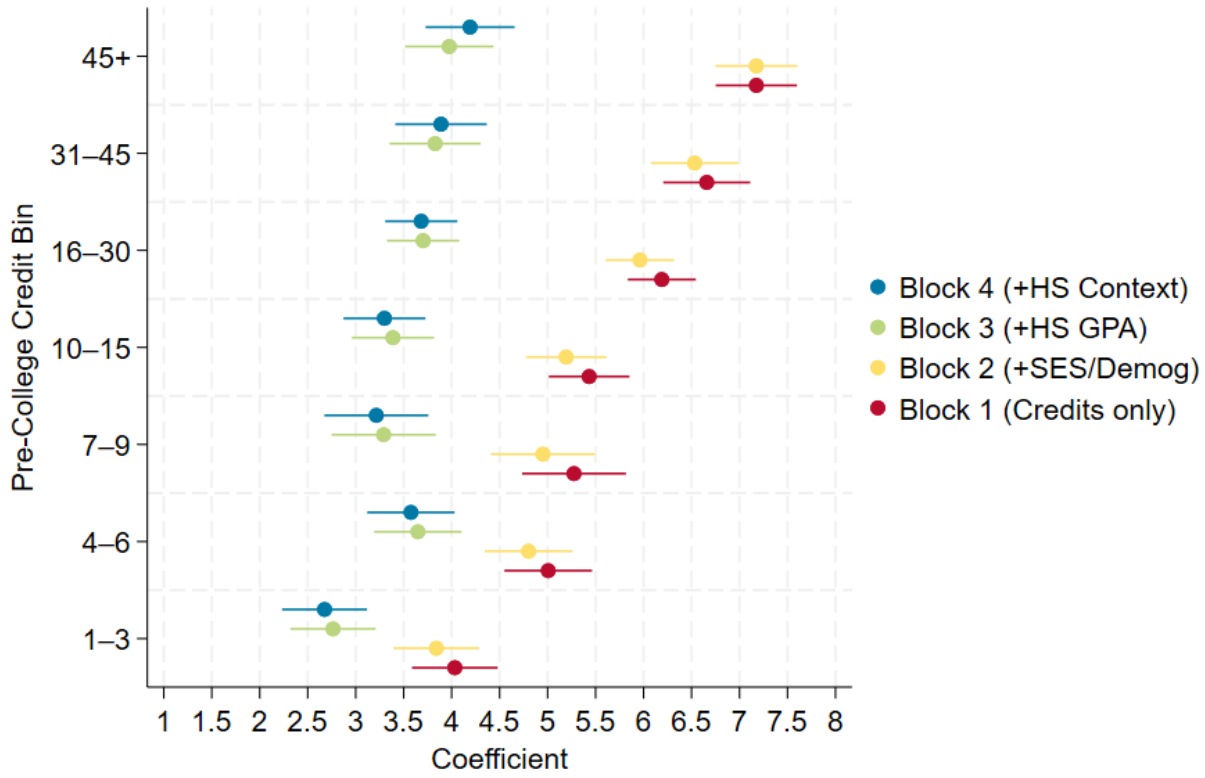


Table 6. First-Year Course Passage - Block Linear Regression Results

	(1) Coef	(2) Coef	(3) Coef	(4) Coef
Pre-College Credit Bin (Ref: 0)				
1-3	0.115***	0.107***	0.075***	0.073***
4-6	0.155***	0.145***	0.107***	0.105***
7-9	0.156***	0.144***	0.097***	0.096***
10-15	0.177***	0.165***	0.109***	0.108***
16-30	0.194***	0.180***	0.107***	0.108***
31-45	0.205***	0.191***	0.104***	0.108***
45+	0.181***	0.175***	0.089***	0.092***
Residency (IN Resident vs Non)		-0.069***	-0.038***	-0.034***
Pell Eligibility (Pell Eligible vs Non)		-0.045***	-0.041***	-0.036***
First Generation (First Gen vs Non)		-0.042***	-0.041***	-0.038***
Race/Ethnicity (Ref: White)				
Black		-0.037***	-0.025***	-0.025***
Hispanic		-0.003	0.006	0.004
Asian		0.010	0.004	0.001
Two+ Races		-0.034***	-0.027***	-0.027***
Other/Unknown		-0.034***	-0.029**	-0.029**
Nonresident		0.016	0.042	0.047
High School GPA (Ref: Below 3.0)				
3.00 to 3.249			0.067***	0.068***
3.25 to 3.499			0.112***	0.114***
3.5 to 3.749			0.154***	0.157***
3.75 to 3.99			0.175***	0.179***
4.0 to 4.249			0.189***	0.193***
4.25+			0.198***	0.203***
High School Locale (Ref: Urban)				
Suburban				0.008**
Town				-0.031***
Rural				-0.004
High School Neighborhood Poverty				-0.001***
Constant	0.714***	0.821***	0.708***	0.715***
Observations	30,436	30,436	30,436	30,436
R-squared	0.096	0.124	0.165	0.170
RMSE	0.256	0.252	0.246	0.245

Figure 35. First-Year Course Passage – Coefficient Plot

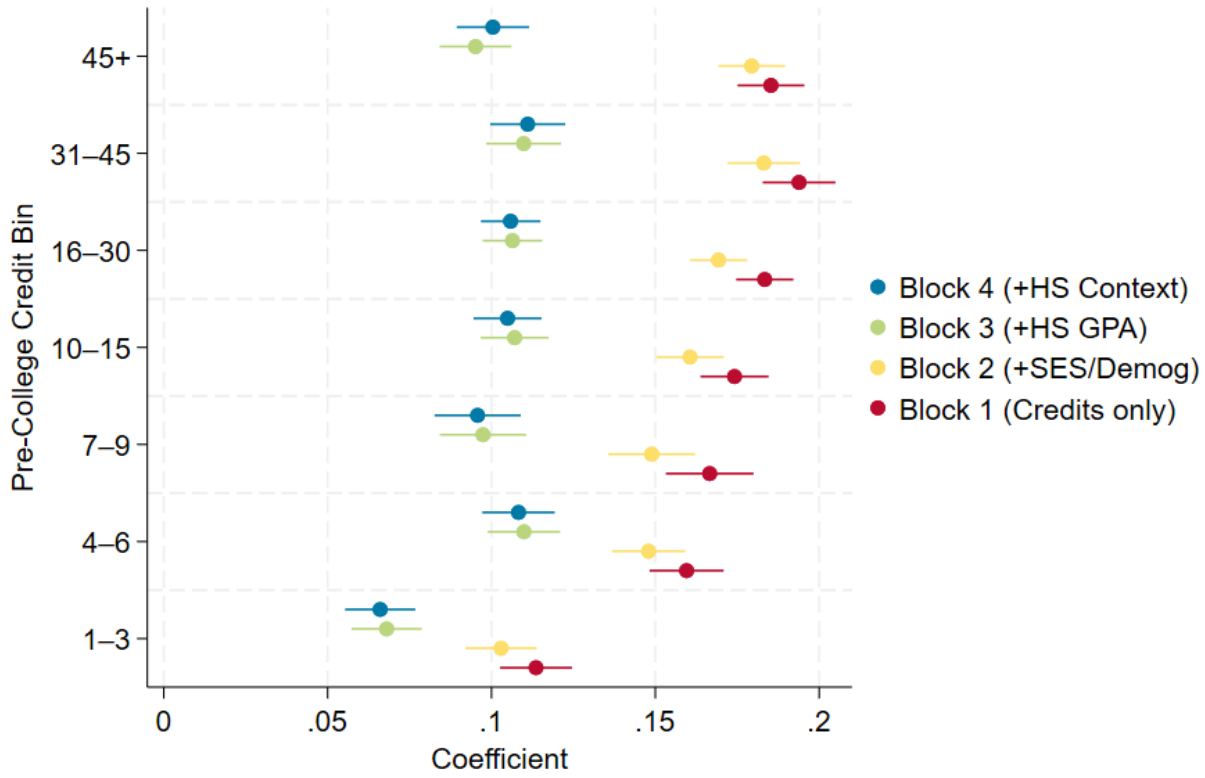


Table 7. Four-Year Graduation – Block Logistic Regression Results

	(1)	(2)	(3)	(4)
	OR	OR	OR	OR
Pre-College Credit Bin (Ref: 0)				
1-3	2.133***	2.076***	1.756***	1.739***
4-6	2.849***	2.765***	2.329***	2.312***
7-9	3.088***	2.945***	2.331***	2.316***
10-15	3.703***	3.599***	2.695***	2.693***
16-30	4.891***	4.721***	3.159***	3.183***
31-45	6.034***	5.830***	3.500***	3.591***
45+	6.316***	6.458***	3.919***	4.008***
Residency (IN Resident vs Non)		0.608***	0.725***	0.743***
Pell Eligibility (Pell Eligible vs Non)		0.672***	0.683***	0.698***
First Generation (First Gen vs Non)		0.767***	0.767***	0.780***
Race/Ethnicity (Ref: White)				
Black		0.756***	0.792***	0.788***
Hispanic		0.789***	0.836**	0.827**
Asian		0.978	0.932	0.915
Two+ Races		0.832*	0.845*	0.836*
Other/Unknown		0.819	0.826	0.825
Nonresident		0.267	0.289	0.298
High School GPA (Ref: Below 3.0)				
3.00 to 3.249			1.326***	1.340***
3.25 to 3.499			1.625***	1.651***
3.5 to 3.749			1.926***	1.969***
3.75 to 3.99			2.585***	2.653***
4.0 to 4.249			3.063***	3.138***
4.25+			3.158***	3.239***
High School Locale (Ref: Urban)				
Suburban				1.050
Town				0.861**
Rural				0.956
High School Neighborhood Poverty				0.994***
Observations	23,757	23,757	23,757	23,757
AIC	30458.298	29850.824	29369.512	29338.747
BIC	30522.903	29988.109	29555.252	29556.789

Figure 36. Four-Year Graduation – Odds Ratio Plot

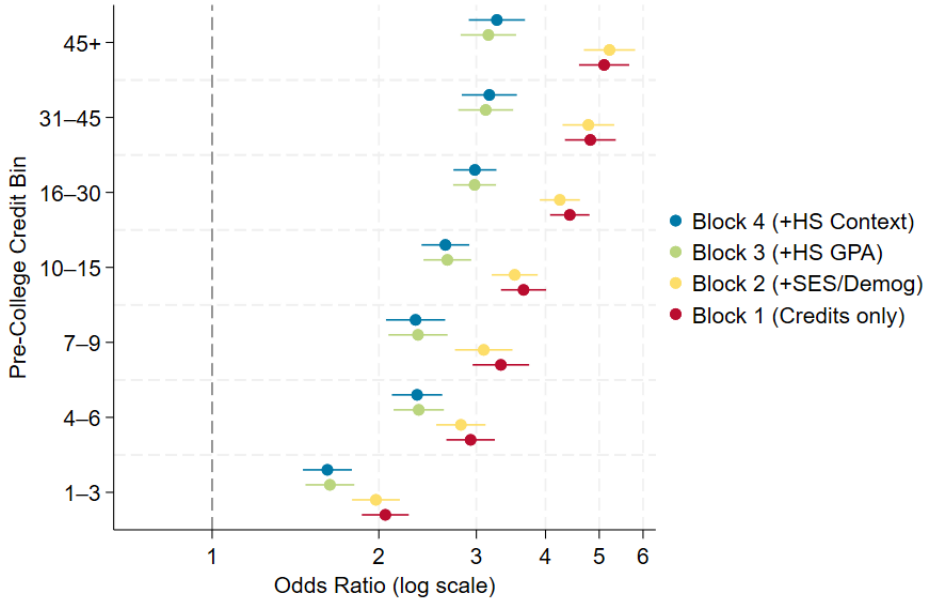


Table 8. Six-Year Graduation – Block Logistic Regression Results

	(1) OR	(2) OR	(3) OR	(4) OR
Pre-College Credit Bin (Ref: 0)				
1-3	2.081***	2.085***	1.765***	1.741***
4-6	2.936***	2.938***	2.499***	2.474***
7-9	3.168***	3.125***	2.497***	2.484***
10-15	3.885***	3.882***	2.933***	2.959***
16-30	5.457***	5.435***	3.651***	3.747***
31-45	6.290***	6.299***	3.704***	3.920***
45+	5.959***	6.240***	3.731***	3.880***
Residency (IN Resident vs Non)		0.689***	0.836***	0.853**
Pell Eligibility (Pell Eligible vs Non)		0.592***	0.598***	0.616***
First Generation (First Gen vs Non)		0.709***	0.715***	0.732***
Race/Ethnicity (Ref: White)				
Black		0.966	1.003	0.971
Hispanic		0.922	0.970	0.948
Asian		1.154	1.114	1.083
Two+ Races		0.864	0.876	0.850
Other/Unknown		0.747	0.763	0.754
Nonresident		0.974	1.259	1.313
High School GPA (Ref: Below 3.0)				
3.00 to 3.249			1.331***	1.351***
3.25 to 3.499			1.623***	1.663***
3.5 to 3.749			1.907***	1.972***
3.75 to 3.99			2.417***	2.507***
4.0 to 4.249			3.415***	3.523***
4.25+			3.827***	3.921***
High School Locale (Ref: Urban)				
Suburban				1.047
Town				0.719***
Rural				0.911
High School Neighborhood Poverty				0.994**
Observations	17,543	17,543	17,543	17,543
AIC	21245.020	20749.545	20418.184	20365.595
BIC	21307.199	20881.676	20596.949	20575.450

Figure 37. Six-Year Graduation – Odds Ratio Plot

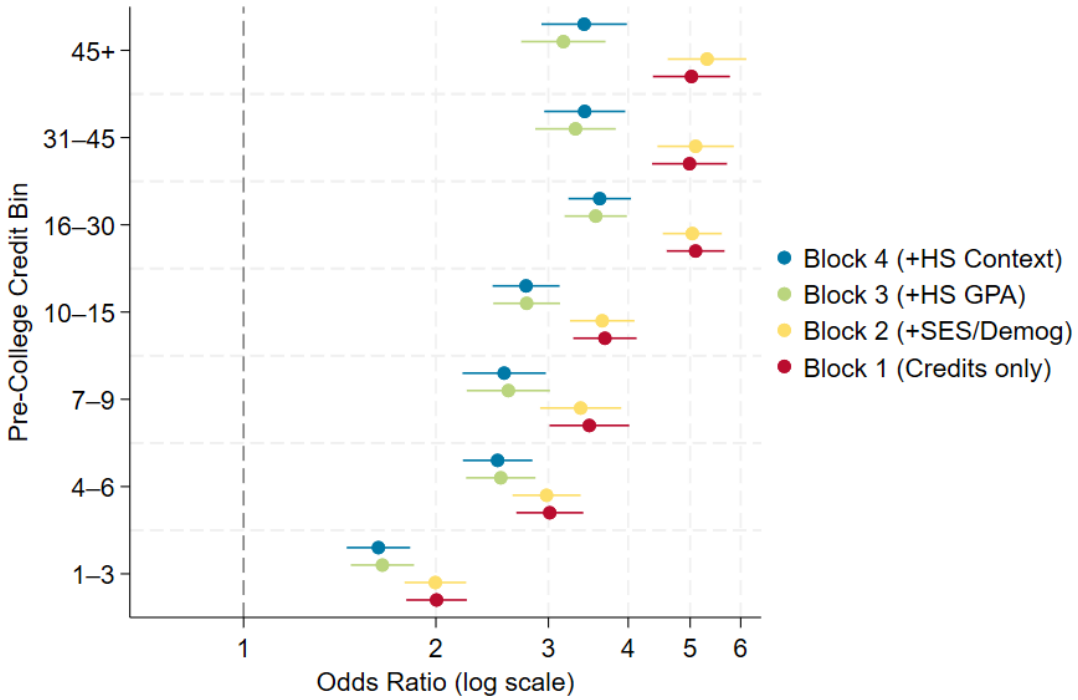


Table 9. Terms to Degree – Block Poisson Regression Results

	(1) Coef	(2) Coef	(3) Coef	(4) Coef
Pre-College Credit Bin (Ref: 0)				
1-3	-0.016	-0.012	-0.001	-0.001
4-6	-0.005	-0.006	0.009	0.009
7-9	0.019	0.024	0.040	0.042
10-15	-0.036	-0.032	-0.005	-0.002
16-30	-0.082***	-0.078**	-0.042	-0.038
31-45	-0.152***	-0.146***	-0.106**	-0.100**
45+	-0.208***	-0.208***	-0.168***	-0.166***
Residency (IN Resident vs Non)		0.008	-0.003	-0.009
Pell Eligibility (Pell Eligible vs Non)		0.026	0.027	0.024
First Generation (First Gen vs Non)		-0.027	-0.028	-0.028
Race/Ethnicity (Ref: White)				
Black		0.051	0.042	0.034
Hispanic		0.019	0.012	0.008
Asian		0.035	0.031	0.022
Two+ Races		0.023	0.024	0.022
Other/Unknown		0.031	0.025	0.025
Nonresident		-0.088	-0.113	-0.114
High School GPA (Ref: Below 3.0)				
3.00 to 3.249			0.001	0.002
3.25 to 3.499			-0.003	-0.002
3.5 to 3.749			-0.044	-0.047
3.75 to 3.99			-0.056	-0.058
4.0 to 4.249			-0.073*	-0.076*
4.25+			-0.062	-0.070
High School Locale (Ref: Urban)				
Suburban				-0.021
Town				-0.012
Rural				-0.026
High School Neighborhood Poverty				0.001
Constant	2.162***	2.144***	2.173***	2.185***
Observations	1,888	1,888	1,888	1,888
AIC	8016.658	8027.165	8026.818	8031.373
BIC	8061.004	8121.401	8154.313	8181.041

Note: Bachelor's degree graduates from Academic Year 2024-25.

Figure 38. Terms to Degree – Coefficient Plot

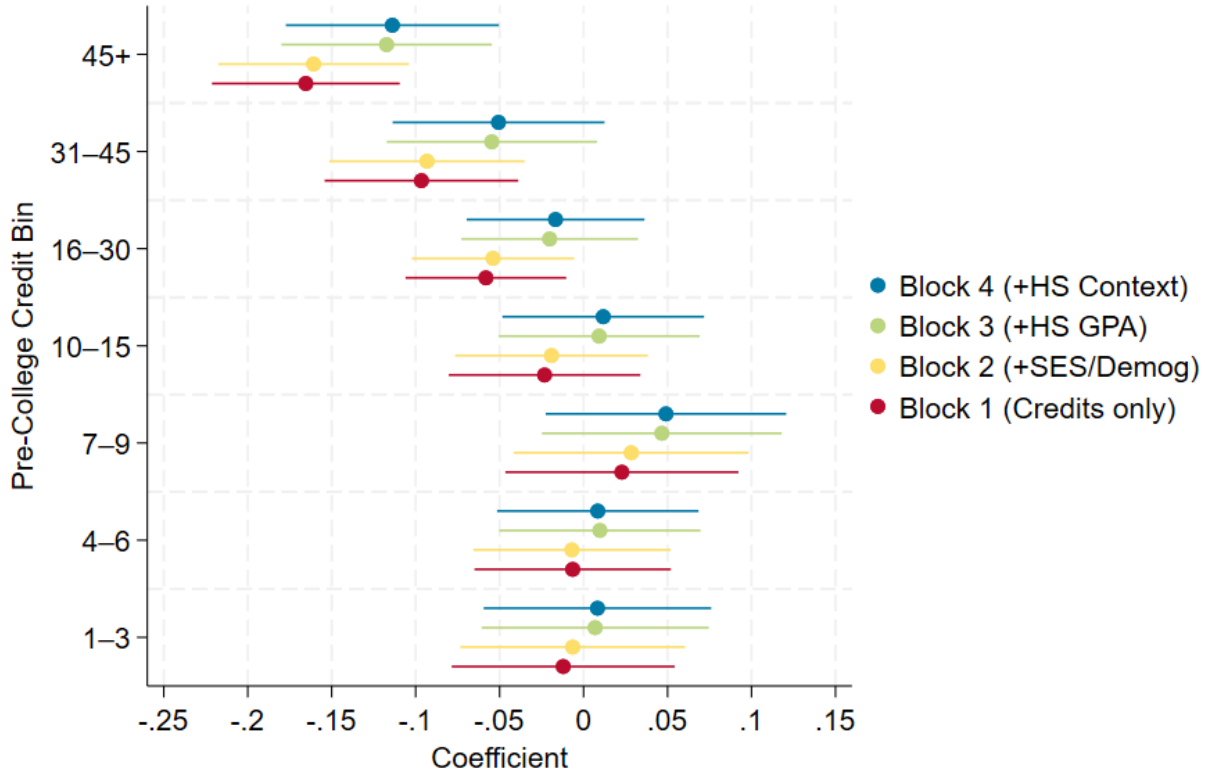


Table 10. Net Tuition Cost – Block Linear Regression Results

	(1) Coef	(2) Coef	(3) Coef	(4) Coef	(5) Coef
Pre-College Credit Bin (Ref: 0)					
1-3	-720	-2181	205	111	15
4-6	-1502	-2951*	-207	-50	-177
7-9	-155	-3093	-86	-190	-720
10-15	-5748***	-7701***	-2464	-2672	-2745*
16-30	-5720***	-8573***	-2222	-2401*	-2183
31-45	-8031***	-10618***	-3401**	-3487**	-2915*
45+	-9800***	-12660***	-4075**	-4066**	-2844*
First Generation (First Gen vs Non)		-11684***	-12047***	-11836***	-11615***
Race/Ethnicity (Ref: White)					
Black		-11607***	-13074***	-12886***	-13338***
Hispanic		-7348***	-8675***	-8496***	-8630***
Asian		-1341	-144	-1039	-1381
Two+ Races		-5058**	-5107**	-5209**	-5471**
Other/Unknown		3576	1379	1343	1205
Nonresident		-29392	-34093*	-32965*	-31792*
High School GPA (Ref: Below 3.0)					
3.00 to 3.249			-920	-1014	-1134
3.25 to 3.499			-914	-993	-1046
3.5 to 3.749			-6350***	-6126***	-5744***
3.75 to 3.99			-9181***	-8993***	-8417***
4.0 to 4.249			-15763***	-15425***	-14631***
4.25+			-17843***	-17236***	-16432***
High School Locale (Ref: Urban)					
Suburban				1288	1446
Town				-439	-346
Rural				275	500
High School Neighborhood Poverty				-94**	-104**
Terms to Degree					13034***
Constant	25492***	33286***	36515***	36912***	25465***
Observations	1,726	1,726	1,726	1,726	1,726
R-squared	0.033	0.164	0.238	0.242	0.251
RMSE	19684	18352	17553	17528	17416

Note: Bachelor's degree graduates from Academic Year 2024-25, who were Indiana Residents.

Figure 39. Net Tuition Cost – Coefficient Plot