

## **The Role of High School Freshman Grades, Socioeconomic Status, and School Location on College Enrollment**

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### **ABSTRACT**

Prior research underscores the pivotal role high school freshman grade-point averages (FGPA) play in college enrollment, with a focus predominantly on urban settings. This study broadens this perspective, employing a diverse Arkansas sample ( $n = 33,207$ ), spanning rural, suburban, and urban high school students and filling a notable literature gap. Utilizing a logit analysis, we found that high school students with an A FGPA were 23% more likely to enroll in college than B FGPA peers. Those failing a course in their high school freshman year were 13% less likely to enroll in college. Among similar academic ability students, economically disadvantaged students were 15% less likely to enroll in college. Locale classifications showed no significant enrollment variations. We conclude that FGPA and socioeconomic status (SES) are stronger enrollment predictors than locale classifications, finishing with intervention recommendations for lower-SES students in exploring college options.

**Keywords:** grade-point average, college enrollment, socioeconomic status, ninth grade, GPA

The transition from high school to college represents a pivotal moment in educational trajectories, particularly for individuals from low-income backgrounds (Simmons, 2022). While attaining a high school diploma was once a benchmark for academic success, the contemporary focus has transitioned to postsecondary education as a critical step toward socioeconomic mobility (An, 2013). However, despite the emphasis on college access, disparities remain prevalent for students from economically disadvantaged backgrounds (Simmons, 2022; Tam & Jiang, 2015). School policy and educational reform aim to unravel how multiple factors cohesively serve as determinants of postsecondary educational paths, contributing to broader discussions on equity, student achievement, and innovative educational interventions. Exploring these dynamics is crucial, providing invaluable insights into academic progression across locales. This catalyzes the development of informed interventions and strategic educational leadership practices to address college access and success disparities. This study digs into this exploration, concentrating on the intersection of ninth grade student performance, socioeconomic status, and school locale to present a multifaceted perspective on their combined impact on college enrollment, thereby enriching the discourse beyond the primarily urban ninth-grade contexts prevalent in the existing literature.

### **REVIEW OF LITERATURE**

#### **Grades**

The significance of grades is a recurring theme in educational research, given its pivotal role in predicting college enrollment and subsequent academic achievements. A confluence of studies underscores that grades reflect a spectrum of student attributes, encapsulating academic proficiency, engagement, persistence, and other positive behavioral traits (Bowers, 2019; Brookhart et al., 2016). High school grade point averages (GPAs), specifically freshman GPAs (FGPA), have emerged as robust indicators of college enrollment and prospective life-earning outcomes (Allensworth & Clark, 2020; Easton et al., 2017; French et al., 2015).

Easton et al. (2017) report that the predictive accuracy of FGPA's surpass that of state-mandated test scores in predicting college enrollment. The comprehensive nature of high school grades is emphasized by Allensworth and Clark (2020), positing that they provide a multifaceted view of a student's diverse skills, behaviors, and the array of expectations encountered throughout various classes, thereby substantiating their validity (Bowers, 2019; Easton et al., 2017). Furthermore, the challenges encountered by students during their transition to high school are attributed more to self-regulatory issues rather than the grading methodologies that teachers employ (Guskey et al., 2020).

However, a counter-narrative exists within the grading community, opposing the inclusion of subjective measures such as engagement and persistence within student grades. These researchers argue that the subjective nature of teacher assessment measures can lead to inconsistencies and inaccuracies in grading (Brookhart et al., 2016; Kunnath, 2017). The empirical discord regarding the correlation between GPA and test scores further accentuates the ongoing debate about the reliability of grades as accurate and equitable measures of academic ability (Brookhart et al., 2016; Feldman, 2019). Kunnath (2017) highlights the potential for variances and inequities in teacher-assigned grades due to the infusion of non-academic factors and external pressures.

Research exploring the relationship between grading methodologies and student GPAs is notably scarce. However, one study by Townsley and Varga (2018) stands out, revealing no substantial discrepancies in GPAs when assessed either purely on academic ability or through traditional methods incorporating behavioral measures. The study discovered that students evaluated solely based on their understanding of the material tended to achieve lower ACT scores compared to those assessed through a traditional approach that also considers their behavior and engagement. It's important to note that these findings did not consider variations in student demographics, programmatic features, or prior academic achievements. Moreover, the observed differences may merely reflect the isolated fixed effects of the two schools rather than a pattern that approaches normality.

The collective insights from these studies spotlight the intricate and diverse nature of grading and its crucial role in forecasting future academic trajectories like college enrollment. While consensus on the precise value and composition of high school or FGPA remains elusive, the overarching agreement is the predictive reliability of grades for college enrollment. Nevertheless, the external generalizability of these findings, especially those originating from urban locales like Chicago, remains in question, raising concerns regarding their applicability to suburban or rural contexts. Moreover, a noticeable gap persists in the literature concerning the interplay between FGPA, socioeconomic status, and college enrollment, highlighting a pressing need for more nuanced and diversified research in this domain.

## **Socioeconomic Status**

Previous research highlights pervasive disparities in grading practices, particularly concerning the influence of socioeconomic (SES) factors on teachers' evaluations of students (Denessen et al., 2022). Griffin and Townsley (2022) revealed descriptive discrepancies between students who received free or reduced lunch (FRL) and non-FRL students. However, the analysis did not account for variables like teacher, school, or other student characteristics. While teachers often grade lower socioeconomic status (SES) students more harshly (Hannah & Linden, 2012), subjective grading practices are consistently observed across schools with varying poverty compositions (Kunnath & Suleiman, 2018). Ultimately, the autonomy in grading practices is defined by individual educators (Morris et al., 2023). However, no existing study has articulated how lower SES students' grades relate to college enrollment.

The disparities for lower SES students extend beyond grading practices, prominently influencing college enrollment decisions and experiences. Socioeconomic status substantially influences immediate college enrollment choices for students (Rowan-Kenyon, 2007), with low-income students preferring more economical options such as two-year colleges (Callaway, 2020). The substantial challenges lower SES students and their families face, including time poverty and limited financial resources, further exacerbate these educational inequities (Gorski, 2013). Nonetheless, family support emerges as a pivotal factor influencing college enrollment of low-income students (Roksa & Kinsley, 2019).

Interestingly, despite facing time poverty and prevalent adversities, lower SES students exhibit a higher likelihood of completing online college courses, demonstrating an innate perseverance once provided with the opportunity to enroll in college courses (Wladis et al., 2023). However, access to financial aid and college opportunities often represent insurmountable hurdles for socioeconomically disadvantaged students (Gorski, 2013). Some schools utilize dual enrollment programs to mitigate these disparities, as they have pronounced benefits in increasing college enrollment for lower SES students (An, 2013; Lee et al., 2022). These programs, coupled with informative initiatives like the Georgia College Advising Corps and the Arkansas Career Pathways Institute, are critical in bridging informational gaps and preparing low-income students for college (Cain & Class, 2023; Callaway, 2020; Morgan et al., 2015). Researchers also advocate for

diversified educational pathways, including vocational tracks, to cater to the diverse needs of low-SES students (Tam & Jiang, 2015).

The interplay between socioeconomic status and academic outcomes underscores the critical need for intentional interventions, which range from less subjective grading practices to informative initiatives and diverse educational pathways. As socioeconomically disadvantaged disparities are nuanced and multifaceted, considering locale classifications can further refine the understanding of SES variances and their implications on college enrollments. There is a pressing need within the research community for a nuanced exploration of locale classifications and SES variations. This refined understanding is pivotal to enhancing the precision of implemented targeted interventions and optimizing their efficacy in improving college enrollment outcomes for students of varying socioeconomic backgrounds.

### **Locale Classification**

The intersection of locale classifications and socioeconomic status provides a multifaceted lens to view disparities in college enrollment patterns. Schools embedded within different locale classifications, such as rural, urban, and suburban, encounter distinctive challenges and manifest divergent academic environments (Parson et al., 2016). Buckmiller et al. (2020) advocate for a proactive approach for rural schools, highlighting the potential adoption of standards-based grading practices. However, no matter how students are graded in rural schools, rural students are less likely to enroll in college than their urban peers (Byun et al., 2015). Finding similar results, Wells et al. (2023) suggest rural students are less likely to enroll in college than their non-rural peers because of the lower average SES in rural areas.

The discourse around urban schools reveals a spectrum of advantages and impediments. Roderick et al.'s (2011) report on urban students in schools with a history of college enrollment and teacher support for college applications showcases an increased likelihood to pursue higher education. Tam and Jiang (2015) suggest urban students are more in the pipeline for college enrollment than rural students. However, Liu et al. (2019) highlight the plight of low-SES students in lower-performing urban schools in China, citing a lack of college preparation support from teachers and financial constraints from parents as significant barriers to college enrollment.

Suburban schools seem to stand out in college enrollment, with a National Student Clearinghouse (2021) report indicating a 62% college enrollment rate, surpassing urban and rural locale rates (both at 56%). However, the distinct experiences and challenges within suburban schools and college enrollment are still largely unexplored in existing literature.

Furthermore, the nuanced perspectives of students from rural Arkansas emphasize the multitude of factors influencing their academic journey for college enrollment. Students from rural Arkansas pinpointed the pivotal role of family support, or the lack thereof, in shaping their educational aspirations and decisions regarding college enrollment (Simmons, 2022). The voices of these students resonate with a collective call for increased awareness of financial aid opportunities in rural schools and a shift in the negative perceptions of some high school teachers regarding college pursuits from rural students (Simmons, 2022; Tam & Jiang, 2015).

The interplay between SES, locale classification, and college enrollment unfolds a narrative of diverse challenges and opportunities within different academic environments. The disparities in college enrollment across different locale classifications, compounded by SES variables and FGPA, demand a more nuanced and comprehensive examination. A gap in the literature regarding how SES and locale classifications, in tandem with FGPA, influence the likelihood of college enrollment necessitates further exploration and research in this domain.

### **This Study**

Building on this existing literature, this study explores the nuanced relationships between ninth grade course performance, student socioeconomic status, and students' school locale classification in predicting college enrollment. The scholarly community (e.g., Allensworth & Clark, 2019; Easton et al., 2017) has previously indicated the critical role of early high school performance in shaping college enrollment and the influential relationships between socioeconomic status and geographical locale. However, a gap exists in understanding the collective interplay of these factors, mainly focusing on ninth grade alone.

Chicago researchers (Easton et al., 2017) have predominantly focused their inquiries on urban school environments, limiting the breadth of understanding to the specific external contexts of these settings. This study, however, leverages a large and robust sample that spans across diverse school locales, enabling a comprehensive exploration that compares students in urban schools with their peers in suburban and rural settings. Including diverse school locales augments the study's scope, facilitating a more holistic understanding of the complex determinants influencing college enrollment. By employing a robust logit analysis, we will address the following research questions:

R1: How does ninth-grade academic performance, such as FGPA and course failure, relate to the probability of college enrollment four years later?

R2: How do student FRL status and school locale classification interact with FGPA and course failures to modify this relation?

## METHODS

### Data and Sample

We utilized anonymized student-level data provided by the Arkansas Department of Education (ADE), focusing on a sample of Arkansas ninth grade students from the most recent available college enrollment year of data. The sample, consisting of 33,207 first-time, full-time ninth-grade students, includes 2013-2014 eighth-grade achievement scores, 2014-2015 ninth-grade student and course data, district characteristics data, and 2018-2019 National Student Clearinghouse college enrollment data. Given the precedent set by research emphasizing the significance of ninth-grade course failures (Easton et al., 2017; BLIND 1), our analysis includes only ninth grade students.

The data contains student demographic and programmatic attributes, course grades, absences, and discipline infractions. Course grades within the provided data are represented by numerical or grade letter values. We generated a binary indicator for our analysis to delineate student course failure, characterized as receiving an F, E, NC, I-0, or any grade below 60. A comprehensive summary of information on our selected sample is illustrated in Table 1.

**Table 1**

*Ninth-Grade Student Characteristics: Demographic, Programmatic, and Course Grades by Locale Classifications*

	Rural		Suburban		Urban		State	
	n	%	n	%	n	%	n	%
Female	5,005	29.5	6,345	37.4	4,875	28.7	16,982	51.1
White	8,114	78.6	8,697	66.8	4,526	45.9	21,337	64.3
Black	1,278	12.4	2,792	21.4	2,623	26.6	6,693	20.2
Hispanic	577	6.6	1,102	8.5	1,976	20.0	3,655	11.0
Other Races	351	3.4	437	3.4	734	7.4	1,522	4.6
FRL	6,512	63.1	7,248	55.6	5,599	56.8	19,359	58.3
GT	1,261	12.2	1,459	11.2	1,227	12.4	3,947	11.9
ELL	258	2.5	517	4.0	1,414	14.3	2,189	6.6
SPED	1,135	11.0	1,327	10.2	1,025	10.4	3,487	10.5
Failed	2,421	23.5	3,003	23.1	2,754	27.9	8,178	24.6
A	2,989	29.0	3,984	30.6	2,904	29.5	9,877	29.7
B	4,627	44.8	5,382	41.3	3,817	38.7	13,826	41.6
C	2,235	21.7	2,847	21.9	2,320	23.5	7,402	22.3
D	431	41.8	740	5.7	727	7.3	1,898	5.7
F	38	0.4	75	0.6	91	0.9	204	0.6
Enrolled	4,306	41.7	5,651	43.4	4,466	45.3	14,423	43.4

Student programmatic statuses include Free or Reduced-Lunch Status (FRL), Gifted and Talented (GT), English Language Learners (ELL), and Special Education services (SPED). The variable *Failed* indicates whether a student failed at least one course during their ninth-grade year. The A through F indicators represent overall ninth-grade GPA, classified as  $A > 3.5$ ,  $3.5 \leq B > 2.5$ ,  $2.5 \leq C > 1.5$ ,  $1.5 \leq D > 0.5$ ,  $F \leq 0.5$ .

Within our ninth-grade sample, 29.5% are enrolled in rural schools, 37.4% in suburban schools, and 28.7% in urban schools. White students constitute the majority of the sample at 64.3%, with the urban schools comprising the lowest number of White students at 45.9%. Black and Hispanic students in urban settings account for 26.6% and 20% of the composition,

respectively. Approximately 60% of the sample receive FRL services, with rural schools exhibiting the highest proportion at 63.1%.

Further, 24.6% of the ninth-grade students in our sample failed at least one course, with urban schools displaying the highest levels at 27.9%. Notably, 71.3% of the students achieved an A or B average FGPA, while merely 0.6% averaged an F. The college enrollment rate for our ninth-grade sample across the state is 43.4%. Rural students exhibited the lowest enrollment rates at 41.7%, compared to 43.4% for suburban students and 45.3% for urban students.

## Analysis

To investigate our research questions, we employ a logit model, a suitable statistical approach given our binary outcome of interest—college enrollment. Given that one of our focal variables, the FRL indicator, frequently correlates with various student demographic and programmatic characteristics, we integrate these as control variables within our model to account for intercorrelation (Cunningham, 2021). A logit model is preferable over an Ordinary Least Squares (OLS) regression in this scenario due to the binary nature of our dependent variable (Cunningham, 2021). Accordingly, our statistical model to explore the research question is presented below.

$$Prob(Enrolled_i) = \beta_0 + \beta_1 FGPA_i + \beta_2 failed_i + \beta_3 FRL_i + \beta_4 locale_i + \beta_5 \chi_i + \beta_6 \Omega_i + \beta_7 (FGPA * locale)_i + \beta_8 (FGPA * FRL)_i + \beta_9 (locale * FRL)_i + \beta_{10} (Failed * locale)_i + \beta_{11} (FGPA * locale * FRL)_i + \varepsilon_i, \text{ where:}$$

- $Enrolled_i$  is the outcome variable, representing whether student  $i$  enrolls in college the Fall semester following their Spring high school graduation. It is binary, with 1 denoting enrollment.
- $\beta_1$  represents the categorical variable for the ninth-grade (freshman) Grade Point Average (FGPA) of student  $i$ , categorized as  $A > 3.5$ ,  $B > 2.5$ ,  $C > 1.5$ ,  $D, > 0.5$ , and  $F \leq 0.5$ .
- $\beta_2$  is an indicator variable, valued 1 if a student  $i$  failed at least one course during their ninth-grade year.
- $\beta_3$  is an indicator variable, representing participation in the Free or Reduced-Lunch program by student  $i$ .
- $\beta_4$  is a categorical variable depicting the locale identifications—rural, suburban, or urban—of the school for student  $i$ .
- $\chi_i$  is a vector representing the characteristics of student  $i$ , including gender, race, ethnicity, Gifted and Talented status, English Language Learning status, Special Education status, and math and ELA prior achievement scores. It is associated with corresponding  $\beta_5$  coefficients.
- $\Omega_i$  is a vector reflecting the district characteristics for student  $i$ , including district FRL compositions, district minority composition, and log of district enrollment, each associated with the corresponding  $\beta_6$  coefficients.
- $\beta_7, \beta_8, \beta_9, \beta_{10}$ , and  $\beta_{11}$  coefficients correspond to double and triple interactions of interest.
- $\varepsilon_i$  accounts for the random error associated with the student  $i$ .

In this model, we employ robust standard errors, and to facilitate interpretation, we render our logit estimates as average marginal effects.

## RESULTS

Our study's four primary independent variables—FGPA, Failed, FRL status, and locale classification—were found to be statistically significant predictors of the probability that ninth-grade students will enroll in college four years later when all other variables are held constant. The results of interest of our logit model in Table 2 below.

### Research Question 1: How does ninth-grade academic performance, such as FGPA and course failure, relate to the probability of college enrollment four years later?

Ninth-grade students with an A FGPA were, at a 99% confidence level, 23% more likely to enroll in college than their peers with a B FGPA. Moreover, these students with an A FGPA were 54% and 62% more likely to enroll in college than their counterparts with D and F FGPA's, respectively. When translated into odds ratios, this implies that ninth-grade students with an A FGPA were over two times as likely to enroll in college compared to those with a D FGPA and nearly five times as likely as those with an F FGPA.

**Table 2**

***Ninth-Grade Student Factors Related to the Probability of Enrolling in College***

Variable	Contrast	Robust Std. Er.
<i>FGPA</i>		
B vs A	-0.23***	0.01
C vs A	-0.40***	0.01
D vs A	-0.54***	0.01
F vs A	-0.62***	0.01
C vs B	-0.16***	0.01
D vs B	-0.31***	0.01
F vs B	-0.38***	0.01
D vs C	-0.14***	0.01
F vs C	-0.22***	0.01
F vs D	-0.08***	0.02
<i>Failed</i>		
1 vs 0	-0.13***	0.01
<i>FRL</i>		
1 vs 0	-0.15***	0.01
<i>locale</i>		
Suburban vs Rural	-0.02***	0.01
Urban vs Rural	0.00	0.01
Urban vs Suburban	0.02***	0.01
<i>FGPA#locale</i>		
(A#Suburban) vs (A#Rural)	-0.02***	0.01
(A#Urban) vs (A#Rural)	0.00	0.01
(A#Urban) vs (A#Suburban)	0.02***	0.01
<i>FGPA#FRL</i>		
(A#1) vs (A#0)	-0.14***	0.01
(B#1) vs (B#0)	-0.15***	0.01
(C#1) vs (C#0)	-0.11***	0.01
(D#1) vs (D#0)	-0.06***	0.01
(F#1) vs (F#0)	-0.01***	0.01
<i>locale#FRL</i>		
(Rural#1) vs (Rural#0)	-0.15***	0.01
(Suburban#1) vs (Suburban#0)	-0.14***	0.01
(Urban#1) vs (Urban#0)	-0.15***	0.01
<i>Failed#locale</i>		
(1#Suburban) vs (1#Rural)	-0.02***	0.01
(1#Urban) vs (1#Rural)	0.00	0.01
(1#Urban) vs (1#Suburban)	0.02***	0.01
<i>FGPA#locale#isFRL</i>		
(A#Rural#1) vs (A#Rural#0)	-0.14***	0.01
(A#Suburban#1) vs (A#Suburban#0)	-0.14***	0.01
(A#Urban#1) vs (A#Urban#0)	-0.13***	0.01

Variable	Contrast	Robust Std. Er.
<i>Observations</i>	33,207	
<i>Pseudo R<sup>2</sup></i>	0.21	

*Note.* Results displayed as average marginal effects. Robust standard errors are in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Another way to communicate ninth-grade success is to consider whether students fail at least one course during the year. Students who failed at least one course during their ninth-grade year were 13% less likely to enroll in college, which is statistically significant at the 99% confidence level, indicating a substantial decrease in the likelihood of college enrollment.

Utilizing our logit model, we discerned that students participating in the FRL program were 15% less likely to enroll in college, a statistically significant finding at the 99% confidence level. Our model also adjusts for other student demographics, programmatic characteristics, and prior test scores. Thus, when considering students with similar prior academic abilities, the differing factor identified as FRL status, a student with FRL status was still 15% less likely to enroll in college.

Next, we examined the association between students' school locale classifications and their probability of college enrollment. Although two of our three examined relationships were statistically significant, these findings lack practical significance. Specifically, students located in suburban areas were 2% less likely to enroll in college compared to their rural counterparts and 2% less likely to enroll compared to urban students. However, the relationship between urban and rural student locations did not yield statistical significance. Given the marginal difference of 2%, we do not consider these findings to bear substantial practical significance.

**Research Question 2: How do student FRL status and school locale classification interact with FGPA and course failures to modify this relation?**

In examining the interplay between various categorical and indicator variables, we examined double and triple interaction results to discern their relationship with college enrollment probabilities. Our findings revealed that for students with A and B FGPA, the likelihood of enrolling in college did not manifest substantial practical differences across varying school locale classifications. Focusing on A FGPA students, those with FRL status were 14% less likely to enroll in college compared to their non-FRL counterparts, consistent with the non-interacted coefficient of a 15% difference in college enrollment likelihood between FRL and non-FRL status students. This pattern persisted regardless of school locale classification. FRL status students consistently exhibited a 14–15% lower chance of college enrollment than their non-FRL peers across all locale classifications. Moreover, among students experiencing at least one-course failure in their ninth-grade year, the school locale classification did not contribute to significant variations in where these course failures occurred. Finally, examining our triple interaction of interest, no meaningful differentiation in college enrollment probabilities was observed among A FGPA students participating in the FRL program across different locale identifications—all three results were within 1% of one another. For ease in interpretation, we provide Table 3 below to summarize our findings.

**Table 3**

*Summary of Ninth-Grade Student Factors Related to the Probability of Enrolling in College*

Relationship on College Enrollment	Finding
FGPA	Higher FGPA were associated with higher college enrollment likelihoods.
Freshman Course Failure	Students who fail at least one course freshman year were less likely to enroll in college.
Low SES	FRL students were less likely to enroll in college.
School Locale	Students in rural, suburban, and urban locales were not practically more or less likely to enroll in college.
FGPA and School Locale	No substantial practical differences.
FGPA and Low SES	No substantial practical differences.
School Locale and Low SES	No substantial practical differences.
FGPA, School Locale, and Low SES	No substantial practical differences.

## **DISCUSSION**

This study explored the intersecting realms of ninth-grade performance, socioeconomic status, and school locale to decipher the collective influence of these factors on college enrollment. Ninth-grade course performance was found to be a pivotal influence on college enrollment. A FGPA students were 23% more likely to enroll in college than their B FGPA peers, significant at the 99% confidence level. Failing one course freshman year was associated with a 13% decreased likelihood of enrolling in college compared to passing all courses. Moreover, students in the FRL program were found to have a 15% reduced probability of college enrollment, highlighting persistent socioeconomic disparities in educational access. The marginal differences we observed in college enrollment probabilities across school locales were statistically but not practically significant, indicating the overarching influence of ninth-grade academic performance and socioeconomic status irrespective of the locale. Additionally, we found that the double and triple interaction of these variables did not substantially change the likelihood outcomes; we found ninth-grade student grades and FRL status to be the most substantive observed influencers of college enrollment.

Aligning with Easton et al. (2017) and Allensworth and Clark (2020), this study substantiates that ninth-grade performance is a pivotal influence on college enrollment. However, the empirical discord regarding the objectivity and reliability of grades, highlighted by Brookhart et al. (2016) and Kunnath (2017), remains pertinent. Given that FGPA's indicate a student's diverse skills for college enrollment, the academic community must continue exploring grading methodologies and seek to enhance the fairness and accuracy of grades.

Our results showcase the relationship between socioeconomic status and college enrollment probabilities. The observed decreased likelihood of college enrollment for students enrolled in the FRL program, even when considering student demographic and programmatic attributes, academic aptitudes, and school characteristics, mirrors the enduring disparities elucidated by Griffin and Townsley (2022). This accentuates the urgent need for deliberate interventions for students from low SES backgrounds.

The locale classification intersection with SES and FGPA presents a nuanced and diversified view. Our findings underscore diverse challenges and opportunities within different academic environments. Yet, the unique experiences of student course grades and socioeconomic status appear to be more predictive of college enrollment than in rural, suburban, or urban locations. In our study, no locale classification demonstrated a meaningful variance in the likelihood of enrolling in college, suggesting that college enrollment extends beyond mere geographical school attendance. The implications drawn here underscore the intricacy of college enrollment and stress the role of individual academic and socioeconomic contexts over geographical determinants.

### **Recommendations**

Given the findings and implications of our study, we provide several recommendations. First, aligning with insights from Allensworth and Clark (2020), there is a pressing need for schools to broaden their evaluative scope beyond ACT scores and standardized tests. This adjustment can facilitate a more accurate appraisal of students' college readiness, mitigating the pitfalls of over-relying on standardized test prep and the associated misestimations. Furthermore, we urge schools to include dual enrollment opportunities (An, 2013; Lee et al., 2022). The proliferation of such programs is pivotal for lower-SES students, aiding in fostering first-year college success. Dual enrollment enables students from disparate backgrounds to participate in higher learning experiences.

Additionally, refining and extending support structures is vital. Callaway (2020) and Cain and Class (2023) recommend expanding programs like the Arkansas College and Career Coach Program and the Georgia College Advising Corps. These initiatives are invaluable conduits in helping lower-SES students navigate the college admissions process.

Lastly, echoing the sentiments of Tam and Jiang (2015) and Morgan et al. (2015), schools need to establish more diverse educational pathways for students. Policies that afford lower socioeconomic status students access to vocational routes during high school and initiatives that bolster awareness about postsecondary enrollment options are fundamental steps in enhancing college preparedness and ensuring inclusivity. The amalgamation of these recommendations forms a comprehensive framework that fosters an equitable academic ecosystem wherein every student can navigate their path to higher education.

### **Limitations**

Our study, albeit insightful, has limitations that warrant consideration. Primarily, by focusing on quantitative variables such as FGPA, standardized test scores, and SES means, we potentially overlook impactful qualitative factors like student



motivation, teacher-student relationships, and the overarching school culture, all pivotal in shaping college enrollment decisions. Secondly, our study doesn't unravel the ongoing debate and empirical discord regarding the signaling value of grades. This limitation is crucial as unresolved issues related to grading disparities may impact the generalizability and applicability of our findings related to FGPA, possibly necessitating cautious interpretation and application of these insights in policymaking and educational strategies.

Furthermore, while our dataset is extensive, it fails to encapsulate the myriad of individual experiences of FRL students, constrained to the indicative variable of FRL status. This omission implies that the nuanced challenges and unique circumstances inherent to FRL students are not fully represented, potentially affecting the depth and breadth of our insights into this demographic's impediments and enablers of college enrollment. Lastly, our robust and extensive data set is not readily available for other researchers across the country. Future researchers may be challenged in replicating our results as anonymized student-level data is not easy to obtain.

## **Future Research**

Given this study's implications, recommendations, and limitations, future research should explore a more holistic approach to understanding college enrollment patterns. Specifically, incorporating qualitative analyses could offer deeper insights into the nuanced influences of student motivation, teacher-student relationships, and overall school culture on college enrollment, addressing the gaps left by our quantitative focus. Furthermore, continuing to investigate the ongoing debates and empirical disparities surrounding the signaling value of grades will be crucial to establishing more equitable and reliable grading methodologies and criteria. Investigations into the myriad individual experiences of FRL students are also essential to grasp the full range of challenges and opportunities this demographic faces, fostering more inclusive and comprehensive educational strategies and policies. These refined research avenues promise to enable the creation of robust, multifaceted frameworks to understand and facilitate college enrollment more effectively and equitably.

## **CONCLUSION**

Overall, our study expounds on the critical influence of ninth-grade performance and FRL status on college enrollment. By integrating these diverse variables into one analysis, this research fills significant gaps in academic discourse, offering a nuanced perspective on how early academic performance and socioeconomic conditions interweave to shape educational outcomes. Our analysis establishes that high school freshman year performance, particularly FGPA, is a more significant predictor of college enrollment than previously understood, underscoring the necessity for early academic interventions tailored to student's diverse needs. Educators and policymakers must prioritize these interventions to mitigate the long-term educational disparities students from varied socioeconomic backgrounds face.

Our study also reveals a link between students' SES, as indicated by FRL participation, and their likelihood of college enrollment, pointing towards the need for targeted support and resources for economically disadvantaged students. This finding emphasizes the call for schools and communities to implement comprehensive support systems that address academic and non-academic barriers to higher education access. By discovering no association between school locale and college enrollment rates, our research challenges prevailing assumptions about the influence of urban, suburban, and rural educational settings on postsecondary access. This insight demands a shift in focus towards individual student achievement and socioeconomic conditions, rather than geographical determinants, as the primary factors in shaping college enrollment pathways.

However, the journey of exploration in this domain is far from complete. While our study illustrates how ninth-grade courses and FRL status relate to college enrollment, the inherent limitations pinpoint several uncharted territories. The unresolved debates on grading disparities, the unexplored qualitative dimensions of FRL student experiences for college enrollment, and the necessity for equitable educational strategies and policies underscore the pressing need for further inquiry and action.

Our work calls researchers, educators, and policymakers alike to explore deeper, refine understanding, and innovate solutions. The quest for educational equity and accessibility mandates a relentless pursuit of research and intervention to ensure every student has the chance to access higher education, regardless of their background or circumstances. The convergence of insights from this study reinforces the importance of early academic interventions and highlights the indispensable role of continual, multifaceted research in shaping a more inclusive and equitable educational landscape.

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