

Comparing the Efficacy of the HOPE Scholarship between  
Rural and Urban Students at Regional Comprehensive Universities in Georgia

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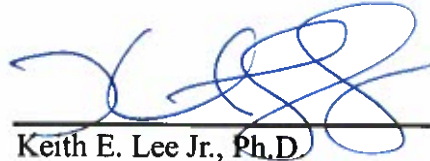
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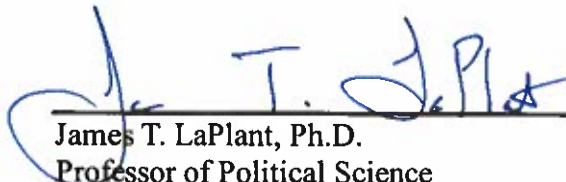
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## ABSTRACT

This study examines whether academic performance and outcomes differ between rural and urban HOPE Scholarship recipients attending Georgia's four regional comprehensive universities. Guided by the Geography of Opportunity framework, the study explores how place of origin can influence a student's ability to benefit from a merit-based financial aid program. The study used a quantitative design with de-identified administrative data provided by the University System of Georgia for first-time, full-time freshman from 2013 through 2019. The dataset included demographic, academic, and financial aid information that enabled the creation of six trajectory categories capturing change in scholarship eligibility throughout the course of enrollment. Descriptive statistics, spatial analyses, and inferential models were used to assess differences in cumulative university GPA, credit hours earned, and bachelor's degree completion between rural and urban HOPE Scholarship recipients. Findings indicate that rural origin is a slight negative predictor of academic performance and degree completion. Differences in outcomes were found to be driven more by scholarship trajectory patterns than by geography. Students who maintained or regained HOPE Scholarship eligibility achieved the highest GPAs and completion rates regardless of origin. Students who lost eligibility were least likely to graduate, with rural students losing HOPE at a higher rate than urban students, highlighting some rural challenge. However, several rural counties demonstrated strong academic performance, challenging assumptions of rural disadvantage. Overall, results suggest that academic preparation and continuity of financial support are vital for all students, indicating that poor outcomes could stem from structural conditions other than geography.

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## DEDICATION

I dedicate this work to my late mother, Brenda O'Keefe, and my late grandfather, Larry Eidson, whose lives continue to guide and inspire me each day. Your wisdom, strength, and unconditional belief in me are woven into every page of this work. Mom, although you aren't here to witness this chapter, your example was a part of every choice that led me here. I wish you both could be here to share this moment. I hope I have made you both proud.

## **Chapter I**

### **Introduction**

A college education has long been considered a core component for achieving prosperity, with degrees linked to higher wages, greater job security, and expanded career opportunities. However, in recent years, rising tuition costs, student loan debt, the growing appeal of college alternatives, and political debate have altered perceptions of the value of a college degree and caused higher education institutions to face increased scrutiny. What used to be recognized as a typical path toward a better life after high school now leaves students and parents with complex decisions before enrolling in college, particularly for low-income families who must weigh potential economic benefits with financial risk.

Though debate endures regarding the advantages of completing a college degree, research continues to validate its long-term benefits. According to the College Board (2023) and the National Center for Education Statistics (2022), individuals who earn a bachelor's degree still earn more over their lifetime than those with only a high school diploma. The U.S. Bureau of Labor reports that graduates with four-year degrees earn an average of 68% more than high school graduates, reinforced by a Georgetown University report stating college graduates earn approximately \$1 million more over a lifetime than those without degrees (Carnevale et al., 2011). Yet, undergraduate college enrollments have declined significantly over the past decade, driven by multiple factors, such as falling birth rates, changes in the labor market, the COVID-19 pandemic, and increasing

concerns about student loan debt and the affordability of college (National Student Clearinghouse Research Center, 2023). These trends have pressured higher education institutions to reevaluate enrollment management strategies and specifically mitigate retention and degree completion challenges (Hanover Research, 2024).

Rising college attendance costs have not only become a significant concern for parents and students in making enrollment decisions, but also for higher education institutions. With reduced state and federal funding and increasing operating costs, it has become more difficult for institutions to maintain affordability. Consequently, tuition, fees, course materials, and the price of living on campus continue to climb, leaving many students questioning whether they can afford to attend and stay in college (NEA, 2022).

Financial aid is often used by federal and state governments to lessen these financial burdens on students and their families by providing funding based explicitly on need and academic achievements to make higher education more attainable and affordable and reduce or eliminate the need for students to take out student loans. These financial aid programs fall into two categories: need-based aid, which provides support based on financial circumstances, and merit-based aid, which rewards academic performance regardless of financial need.

Most states take a need-based approach to distributing aid based on family income, with Georgia being one of only two states that does not offer need-based financial aid (Georgia Budget & Policy Institute, 2022). Nevertheless, merit-based scholarships have gained popularity over the last few decades, especially in Southern states where they are typically funded by state lotteries as a political appeal to taxpayers, to mitigate challenges associated with enrollment and reductions in state funding for

public institutions, and to promote a means of rewarding academic excellence while incentivizing in-state students to attend local colleges and universities (Dynarski, 2000). However, critics argue that such programs may disproportionately benefit students from more affluent backgrounds who are more likely to attend high-performing high schools, have access to better educational resources, and receive more guidance from high school counselors on navigating the college admissions process (Heller, 2002; Lee, 2016).

One such noteworthy state financial aid program that has become the flagship model followed by other states is Georgia's Helping Outstanding Pupils Educationally (HOPE) Scholarship program. HOPE was the first large-scale, lottery-funded merit scholarship in the United States, often cited as a national model for how state-funded merit aid can positively impact college access, affordability, and student success (Dynarski, 2000). Established in 1993 under the leadership of former Governor Zell Miller, the HOPE Scholarship was originally created as a hybrid program that incorporated both needs-based and merit-based components. Funded by revenues from the Georgia lottery, the program was intended to increase access to higher education for all Georgia residents, improve the state's workforce, and tackle economic disparities by broadening educational access. Since its inception, HOPE has increased enrollments and has helped more than 2 million students pursue a college education in Georgia, distributing billions of dollars in tuition aid and becoming the most successful higher education policy in Georgia's history (Georgia Student Finance Commission, n.d.; Morris, 2018).

Following its implementation, HOPE evolved with several structural and eligibility changes that shifted it to an entirely merit-based program. While these changes

were made in response to concerns about financial sustainability of the program, critics have raised equity concerns about these modifications, arguing that the merit-based nature of the program may disproportionately benefit more affluent families and overlook low-income students living in Georgia communities where citizens spend a higher proportion of income playing the lottery. Rural students, who tend to face financial, academic, and geographic barriers, may find it more difficult to meet and maintain the eligibility requirements of HOPE, thereby limiting their ability to benefit from the program (Dynarski, 2000).

It has been consistently noted in prior research that rural students often come from low-income families and face specific challenges and concerns for pursuing higher education, such as limitations regarding convenient access to college campuses, support and guidance for navigating the college experience, access to technology, and access to financial resources, often leading to decisions to forego college and work in their local communities (Means, 2018). According to the U.S. Department of Agriculture (USDA), the National Center for Education Statistics (NCES), and the National Student Clearinghouse (NSC), rural students are less likely to enroll in and complete college despite graduating high school at equal to or higher rates than their urban counterparts. For many of these students, financial hardships, coupled with limited educational opportunities, make it more difficult to attend and be successful in college.

Recognizing the unique challenges faced by rural students, Georgia has recently introduced several initiatives and invested funding focused on improving rural K-12 education, including expanding broadband access, investing in recruitment and retention of qualified teachers, and implementing programs such as the Georgia CTAE (Career,

Technical, and Agricultural Education) for helping rural students explore career pathways and improve skillsets (Crews, 2021; Rural Education and Innovation, 2022). While these efforts represent meaningful progress, they do little to address the challenges rural students face when making college decisions and the factors that impact their success while attending college. College access programs like dual enrollment and the HOPE Scholarship program are available to rural students, but Georgia has dedicated little attention to an extended range of higher education initiatives for improving recruitment and retention of students narrowed to the specific needs associated with growing up in rural communities. This is particularly concerning given that Georgia ranks third nationally in educating the most rural students, but bachelor's degree attainment is lowest in the state's rural counties (Lee, 2020; Showalter et al., 2023). This divergence suggests an unnoticed market of students that could increase the Georgia higher education enrollment pool and help improve rural student higher education trajectories and rural economic progress (Han et al., 2019).

Ironically, Governor Zell Miller originally promoted the Georgia Lottery to fund the HOPE Scholarship program to improve college access and strengthen economic opportunity for students in Georgia, particularly for those who could not otherwise afford higher education, such as rural students (Lanford, 2017). Nonetheless, three decades after the inception of the program, Lee (2020) points out that poor students from rural communities in Georgia lack access to the scholarship due to racial, ethnic, and income inequalities. Also noted is that rural students typically attend smaller state universities and colleges, which historically receive a decreased proportion of HOPE Scholarship funding compared to Georgia's flagship institutions (Suggs, 2016). This unequal

distribution suggests that the HOPE Scholarship program has widened the equity gap and further exacerbates the geographic inequalities in education outcomes faced by rural students.

More than thirty years after its inception, the HOPE Scholarship program still stands as one of Georgia's most impactful and lasting accomplishments in higher education policy and has opened doors to college for generations of students. Yet, pressing questions remain about whether it has impacted all students equally, especially those from underserved backgrounds, like students from rural communities. For these students, the path to college can be filled with obstacles, especially limited access to financial resources. While the HOPE Scholarship program was designed to make higher education more accessible, it is not clear whether these programs are enough to help rural students enroll, persist, and graduate.

Also, despite recent signs of modest rebounds in higher education enrollments, the looming demographic cliff and growing concerns about student loan debt make it especially urgent to evaluate whether the HOPE Scholarship program meets the needs of all students in Georgia. Another factor complicating the impact of the HOPE Scholarship's effectiveness is the notion of grade inflation (ACT, 2022). Because eligibility and retention of the scholarship are tied directly to GPA thresholds, inflated grades in high school have the potential to increase the number of students who initially qualify for the scholarship. However, these students may not be academically prepared for the rigor of college, creating a false sense of access and making them more likely to lose the HOPE Scholarship after their first year. Furthermore, grade inflation may not be

evenly distributed across urban and rural school systems, which intensifies equity concerns (Hurwitz & Lee, 2018).

Understanding how geography shapes student outcomes is critical for informing future higher education policy, addressing longstanding regional disparities, and ensuring that the HOPE Scholarship program fulfills its original mission of expanding opportunity for all Georgia students. Within this framework, this study examines how Georgia's flagship merit-based aid program is working for rural students who choose to pursue higher education.

### **Statement of the Problem**

The HOPE Scholarship program was designed to make college more accessible for Georgia students by offering financial support to those who earn and maintain a 'B' average in high school and college. While it has served as a core aspect of the state's higher education policy, important questions remain about whether the program fully meets the needs of all students across the state. The HOPE Scholarship program may not adequately address the unique barriers faced by rural students, leading to gaps in college access and success when compared to students from urban areas. As such, continued assessment and potential reform are needed to ensure that the program lives up to its original intention of expanding opportunity for all Georgia students, regardless of their origin.

Rural students often come from low-income families and face unique challenges to pursuing higher education, including limited access to resources, fewer educational opportunities, and economic barriers that may prolong existing inequalities in educational attainment for these students and hinder economic progress. Governor Zell Miller

intended for the HOPE Scholarship program to help lessen these burdens across the socioeconomic spectrum in Georgia by closing the gap in postsecondary education attainment. However, persistent rural-urban disparities in educational outcomes in general raise critical questions about whether the model financial aid program is achieving its intended goal of effectively promoting equitable access and success in higher education for all students.

Previous research has examined the impact of the HOPE Scholarship on college enrollment rates and the influence of socioeconomic factors on merit-based scholarship recipients. However, no studies have explored how geographic context, specifically, rural versus urban origin, affects academic outcomes under the HOPE Scholarship program. Therefore, this study seeks to address this gap by examining academic performance and persistence between these two groups of HOPE Scholarship recipients to understand whether the program supports its original goals of promoting educational equity across all geographic contexts and continues to fulfill its mission of expanding opportunity for all Georgia students.

### **Purpose of the Study**

The purpose of this study is to examine whether academic outcomes among HOPE Scholarship recipients differ based on geographic background, specifically between rural and urban students in Georgia. This research focuses on two key outcomes: academic performance and completion. Regional comprehensive universities were selected because they serve a large population of in-state, first-generation, and low-income students, many of whom are affected by state merit aid policies. Recognizing that students from rural areas often encounter additional barriers to higher education, this

study seeks to determine whether the HOPE Scholarship program effectively supports them in achieving successful higher education outcomes. By analyzing differences in academic outcomes among rural and urban HOPE Scholarship recipients attending regional comprehensive universities in Georgia, this study also aims to broaden the understanding of geographic disparities in higher education. The results of this study provide insights that can be helpful for informing policymakers in strengthening and refining policy. These findings can also inform higher education institutional strategies to better support marginalized students in achieving positive academic outcomes.

### **Research Questions**

Given these trends, challenges, and concerns, the following research questions (RQ) and associated hypotheses (H) focused on academic performance and completion guiding the examination of the efficacy of the HOPE Scholarship program between rural and urban students attending regional comprehensive universities in Georgia:

RQ1: Is there a difference in academic performance between HOPE Scholarship recipients from rural areas and those from urban areas attending regional comprehensive institutions in Georgia?

H1: HOPE Scholarship recipients from rural areas attending regional comprehensive institutions in Georgia are expected to have lower academic performance, as measured by cumulative GPA and credit hours earned, compared to their urban counterparts.

RQ2: Is there a difference in patterns of HOPE Scholarship receipt over time between recipients from rural areas and those from urban areas attending regional comprehensive universities in Georgia?

H2: Rural students attending regional comprehensive universities in Georgia are expected to exhibit lower continuity of HOPE Scholarship receipt across terms compared to their urban counterparts.

RQ3: Is there a difference in bachelor's degree completion between HOPE Scholarship recipients from rural areas and those from urban areas attending regional comprehensive institutions in Georgia?

H3: HOPE Scholarship recipients from rural areas attending regional comprehensive institutions in Georgia are expected to have lower rates of bachelor's degree completion compared to their urban counterparts.

### **Research Methodology**

This study utilized a quantitative, nonexperimental, ex post facto design to examine academic outcomes among HOPE Scholarship recipients from rural and urban areas attending regional comprehensive universities in Georgia. By using data consisting of records across multiple academic years, student progress could be analyzed over time while accounting for individual characteristics that do not change, such as motivation or family background. The primary statistical approach included descriptive, spatial, and inferential analyses to assess differences between rural and urban HOPE Scholarship recipients.

Data for this study was collected from institutional records provided by the University System of Georgia's Office of Research and Policy Analysis (RPA). De-identified student-level records were accessed under a data-sharing agreement with RPA, and this study received IRB exemption for secondary analysis of archived data. The sample includes first-time, bachelor's-degree-seeking freshman from fall 2013 through

summer 2019, covering the four regional, comprehensive universities: Georgia Southern University, Kennesaw State University, the University of West Georgia, and Valdosta State University. The regional, comprehensive sector was intentionally selected to represent a variety of geographic and demographic contexts in the state. The six-year observation period was selected to allow time to measure key outcomes such as graduation rates and to reflect the significant policy changes to the HOPE Scholarship program enacted in 2011. The period also ensured that findings would not be impacted by any potential disruptions from the COVID-19 pandemic.

Academic performance and completion were measured using the following dependent variables: cumulative GPA, credit hours earned, and HOPE trajectory categories. Specifically, GPA and credit hours were measured cumulatively through the last academic term attended and graduation was measured as being awarded a bachelor's degree within a six-year period. Key independent variables included rural or urban origin, HOPE Scholarship eligibility, gender, race/ethnicity, Pell Grant status, and high school GPA. HOPE Scholarship eligibility requires a 3.0 GPA in high school and maintenance of a 3.0 cumulative GPA at designated credit-hour checkpoints in college. Program variants include the HOPE Scholarship and the more selective Zell Miller Scholarship, however, for the purposes of this study, both are captured under a unified HOPE Scholarship award indicator. Descriptive statistics were first used to better understand the characteristics of the student sample and to identify any obvious difference between rural and urban students. Spatial analysis was incorporated to visualize academic outcomes by county using heat maps, which offered an additional layer of insight, showing where rural students may face challenges or where targeted support might be the most beneficial.

Finally, inferential analysis was utilized to examine relationships between origin, HOPE Scholarship eligibility status, and academic success.

### **Theoretical Framework of the Study**

This study is guided by the *Geography of Opportunity* framework, which is a concept most strongly associated with sociologist George C. Galster. At its core, this framework emphasizes that where a person lives can have a significant impact on their access to critical resources and opportunities, including quality education, economic advancement, social connections, and public services. As Galster (2001) explains, a person's geographic location can either open doors or create barriers, influencing their academic success, career attainment, and overall well-being.

In the context of higher education, this perspective helps explain how students from different communities, especially those from rural areas, may not have the same access to resources that support college readiness and success. Many rural students face hurdles such as access to fewer advanced high school courses, limited high school counseling, unreliable internet access, transportation challenges, and financial hardship. Even with programs like the HOPE Scholarship program, these conditions can make it more difficult for rural students to thrive in college.

By applying this theoretical lens, the study looks closely at whether geography influences how well the HOPE Scholarship program supports academic success. It asks whether rural students experience different outcomes than urban students, even when they meet the same academic and eligibility criteria. This approach helps uncover how place-based inequalities can persist, despite the availability of financial aid, and raises important questions about whether merit-based programs truly serve all students

equitably. It also underscores the need for state policymakers and higher education institutional leaders to develop financial aid and support systems that take geography into account so that students from rural communities are not unintentionally left behind by one-size-fits-all policies.

### **Significance of the Study**

This study contributes to the existing literature and policy discussions surrounding student success in higher education in at least three important ways. First, it addresses a critical gap in research by examining how geographic origin influences academic outcomes among HOPE Scholarship recipients in Georgia. By using descriptive, spatial, and inferential analyses, the study offers new insights into how geographic origin shapes higher education trajectories.

Second, this research not only contributes to the literature but also informs policymakers and institutional leaders about the variation of state financial aid impact on students from underserved rural communities. As state and national initiatives such as Complete College America, Complete College Georgia, and Georgia Match work to increase enrollment and increase college completion, the findings of this study can inform resource allocation, advising strategies, and retention initiatives targeted toward rural populations.

Finally, the integration of spatial heat maps of academic outcomes introduces a visual for understanding disparities in student success among the different regions of Georgia. These tools can support data-informed decision-making at the state and institutional level, helping identify regions where students may benefit from additional academic or financial support.

This study aims to support policymakers, higher education administrators, and researchers in implementing and understanding place-based interventions that promote retention, persistence, and degree attainment. Not only are these initiatives important for influencing economic and social upward mobility for underserved students from rural backgrounds, but they can also advance broader goals like workforce development and regional revitalization through the strategic support of Georgia’s regional comprehensive universities. Findings may also extend beyond Georgia to inform other states with similar merit-based financial aid models, where rural-urban divides remain critical.

### **Assumptions, Delimitations, and Limitations of the Study**

#### ***Assumptions***

This study is based on several key assumptions necessary for ensuring the validity and generalizability of the findings. First, an assumption is that the sample of students included in the dataset accurately represents the broader population of rural and urban HOPE Scholarship recipients in Georgia. This assumption supports the generalizability of the study’s findings to similar student populations across the state.

Second, the study assumes that the model provides sufficient observations across multiple academic years to accurately depict the relationships between independent and dependent variables. The use of longitudinal data collected from the University System of Georgia assumes consistency in data collection methods and sufficient variation over time to support the outcomes.

Third, the study assumes that the institutional records obtained through the University System of Georgia are accurate, complete, and consistently reported across

institutions and years. The validity of the analysis depends on the integrity of the data, including demographic, academic, and financial aid variables.

### ***Delimitations***

This study includes boundaries that were intentionally utilized to keep the research focused and manageable. First, the period is limited to students who enrolled between fall semester 2013 and summer semester 2019. This range was selected to reflect a period after significant changes were made to the HOPE Scholarship program in 2011, while also avoiding any potential disruptions from the pandemic starting in 2020. Additionally, the study centers on Georgia's regional comprehensive universities. This sector was selected because of the strong regional focus and diverse student demographics, making it relevant for exploring how academic outcomes may differ for HOPE Scholarship recipients from rural versus urban areas.

### ***Limitations***

Limitations should be considered when interpreting the findings of this study. First, the reliability of this analysis heavily depends on the quality and availability of the institutional data obtained from the University System of Georgia. Missing, inaccurate data, or inconsistently reported data can compromise the validity of the results. Also, the study is limited to variables available within these official records and does not include factors that may influence student performance, such as motivation, family support, or high school experiences.

Second, the selected period was chosen based on major legislative changes and to avoid the confounding effects of the pandemic. While this allows for a more controlled

analysis, it limits the ability to assess the long-term impacts of the HOPE Scholarship program since its inception and post-pandemic.

Third, while the methodology utilized measure relationships between geographic origin and academic outcomes, other unmeasured, time-varying factors – such as changes in family income, economic conditions, or institutional policies or interventions – may influence student performance. Finally, geographic background is classified using permanent home addresses of students at the time of college admission. While this rural-urban classification provides an important lens for research, it does not capture more detailed regional or community characteristics.

### **Definition of Terms**

For the purposes of this study, the following terms are used with specific definitions to maintain consistency:

- **Academic Performance.** In this study, academic performance refers to student success as measured by cumulative grade point average (GPA) and credit hours earned per academic term.
- **Geography of Opportunity.** A theoretical framework developed by George C. Galster that emphasizes how geographic location influences access to critical resources, including education, economic mobility, and social services, which can shape individual outcomes (Galster, 2001).
- **HOPE Scholarship.** A merit-based financial aid program in Georgia funded by state lottery revenues. These scholarships provide tuition assistance to eligible students who graduate from high school with a minimum 3.0 GPA and maintain academic standards while enrolled in college.

- **Pell Grant Eligibility.** An indicator of socioeconomic status used in this study. Pell Grants are federal need-based financial aid awards provided to low-income undergraduate students.
- **Regional Comprehensive Universities.** Four-year public institutions in Georgia that serve broad geographic regions and offer a wide range of academic programs. In this study, these institutions include Georgia Southern University, Kennesaw State University, the University of West Georgia, and Valdosta State University.
- **Rural-Urban Classification.** In the context of this study, rural students are defined based on the U.S. Census Bureau's 2010 urban-rural classification at the county level, which aligns with the period of the study (2013-2019). According to the 2010 census delineation, urban areas consist of 50% or less people living in rural areas. All other populations not residing in urban areas are classified as rural (U.S. Census Bureau, 2010).
- **Spatial Analysis.** A technique used to analyze data with a geographic or spatial component. In this study, heatmaps were utilized to visualize patterns in academic outcomes across Georgia counties.

## **Chapter Summary**

This chapter introduced the background, purpose, and significance of this study, which examines the academic outcomes of HOPE Scholarship recipients from rural and urban origins attending regional comprehensive universities in Georgia. Grounded in the Geography of Opportunity framework, this study explores how place-based disparities influence higher education trajectories. The chapter outlined the problem that, despite the

intent of merit-based scholarships, geographic inequities may persist in academic performance and degree completion. The purpose of the study was defined as an effort to examine these differences through descriptive, spatial, and inferential analyses. The research questions, hypotheses, and conceptual framework were presented that guide the investigation. The chapter briefly described the study's quantitative design, introduced relevant definitions, and acknowledged key assumptions, delimitations, and limitations to the study. Specifically, the study focuses on a defined period through 2019, a targeted segment of regional comprehensive universities, and administrative data from the University System of Georgia, with a simplified rural-urban classification based on student county of origin. The next chapter will review existing literature to place this study within larger discussions about merit-based financial aid and differences in higher education outcomes between rural and urban students.

### **Outline of the Study**

This dissertation is organized into five chapters. Chapter 1 introduces the study, presenting the background, statement of the problem, purpose of the study, and significance of the research. It also outlines the research questions, theoretical framework, and provides an overview of the quantitative methodology used to examine geographic disparities in academic outcomes among HOPE Scholarship recipients.

Chapter 2 provides a comprehensive review of the literature relevant to the study. It begins with a discussion of the Geography of Opportunity framework, followed by exploration of existing research on the HOPE Scholarship program background, history, and retention, rural student higher education outcomes, and general merit-based financial aid.

Chapter 3 describes the research design and methodology, outlining the study's population sample, data sources, and variables, as well as the procedures for data collection and analysis. Quantitative methods, including descriptive statistics, spatial analysis, and regression analysis, are described. This chapter also addresses the steps taken to ensure the reliability and validity of the data.

Chapter 4 presents the results of the data analysis. Findings are organized by the three research questions and highlight differences in academic performance and persistence between rural and urban HOPE Scholarship recipients. Tables, figures, and statistical outputs are used to provide clarity and support the interpretation of results.

Chapter 5 concludes the study by summarizing the key findings, discussing their implications for higher educational policy and practice, and offering recommendations for future research. Particular attention is given to how education policy along with targeted institutional interventions, might be refined to better support students from rural communities and reduce geographic disparities in college outcomes.

## **Chapter II**

### **Literature Review**

Understanding how geography shapes student experiences in higher education is at the heart of this study. As established in Chapter 1, this study is based on the Geography of Opportunity framework, which highlights how a person's location of origin can impact their access to key resources like education and economic opportunity. In that context, this chapter reviews what the existing research reveals about the impacts of merit-based financial aid, the differences in college access and success between rural and urban students, and the specific outcomes associated with Georgia's flagship HOPE Scholarship program. Collectively, this summary of the literature helps paint a clearer picture of the broader conversation around equity in higher education and how place-based barriers may influence student outcomes.

A review of the literature reveals several studies regarding statewide merit-based scholarship programs, including the HOPE Scholarship program, as well as a growing body of research concerning rural postsecondary education outcomes. Together, these areas of literature provide the foundation for understanding how state policy, institutional structures, and student background intersect to shape college access and success. To guide this review, the discussion is organized in six sections: 1) Theoretical Framework: Geography of Opportunity 2) College Access and Affordability 3) Merit-Based Financial Aid 4) Georgia's HOPE Scholarship Program 5) Rural vs. Urban Student Higher Education Outcomes and 6) Geographic Disparities in Georgia.

## **Theoretical Framework: Geography of Opportunity**

### ***Origins and Definition***

The *Geography of Opportunity* framework is rooted in the concept that where people live shape their access to life-changing resources, such as education and employment opportunities (Galster, 2001). The framework was developed based on how opportunity is unequally distributed across geographic spaces, which challenges the belief that individual success is determined entirely by individual efforts and choices. In Galster's work with Killen, *The Geography of Metropolitan Opportunity: A Reconnaissance and Conceptual Framework*, he mapped out how public policy, real estate markets, and segregation of neighborhoods interact to create unequal "opportunity structures" across metropolitan regions (Galster & Killen, 1995). His research argues that these structures limit mobility and highlight disparities, specifically along lines of race and class. In later studies, Galster (2003, 2012) presented detailed factors to explain how neighborhoods affect life outcomes, including the people and role models students encounter in their neighborhoods, the safety and resources of the places where they live, how easily they can reach schools and jobs, the strength of schools and libraries, and the housing conditions that shape where families are able to live.

Building on this concept, Xavier de Souza Briggs introduced the term "*Geography of Opportunity*" in his late 1990s studies regarding housing mobility programs that helped bring the idea into wider conversations about both policy and education. He highlighted that geography is not just a setting, but it actively shapes people's opportunities in life. Through his work, he showed that where a person lives,

and how communities are supported or neglected over time, can have a lasting impact on areas such as education and upward economic mobility.

### ***Key Scholars***

Galster and Briggs are widely credited with founding the concept, but several other scholars have built on their work, particularly in education and social policy. Researchers such as Massey and Denton used this lens to demonstrate how residential segregation, especially along racial and economic lines, create vastly different educational opportunities for children growing up in different neighborhoods. In *American Apartheid* (Massey & Denton, 1993), they showed how housing policies reinforce segregation, leaving many Black and Latino students excluded from well-resourced schools, safe neighborhoods, and other public services. This work highlighted how where a family lives can directly shape the quality of education and opportunities available to their children.

More recent research by Chetty and Hendren (2018) has provided support for these ideas by demonstrating how the neighborhood in which a person grows up can have measurable impacts on income, educational attainment, and college access later in life. Their research shows that even the smallest differences in zip code can lead to completely different outcomes. Similarly, Turner et al. (2012) explored how “high-opportunity” neighborhoods influence educational outcomes, finding that children who move to areas with better schools tend to perform better academically and adding to the argument that where a person lives is an active force in shaping opportunity.

### ***Use in Higher Education Research***

In the context of higher education, the Geography of Opportunity framework has gained increasing relevance in better understanding how a student's geographic origin shapes their access to, and success in, post-secondary education. The application of the framework to higher education suggests that educational opportunities do not begin at college entry but are influenced by place-based factors that begin long before students attend college. According to Byun et al. (2012), students from rural backgrounds frequently encounter significant barriers to college preparedness, including limited school resources and geographic isolation from post-secondary institutions. These challenges can negatively impact both their readiness for and access to higher education. Building on this concept, Koricich et al. (2018) find that students from rural and lower-income communities are more likely to enroll in two-year colleges, attend part-time, or even delay post-secondary education. These trends reflect not merely individual choices, but barriers tied to geographic location, which can restrict higher education opportunities available to these students.

Hillman and Weichman (2016) also apply the concept to higher education, showing that students in "education deserts" without nearby colleges are less likely to enroll in and complete college. Similarly, Turley (2009) demonstrates how geographic proximity to a four-year college significantly impacts enrollment decisions, particularly for low-income students.

### ***Relevance to the Study***

For students who choose to enroll in college, geographic origin may continue to shape their outcomes. Factors such as distance from home, cultural mismatch between

rural students and more urban environments, and differences in socioeconomic class may affect persistence and degree completion. These dynamics are important in states like Georgia, where merit-based programs like the HOPE Scholarship program are designed to promote college attendance and success, but may not fully account for the barriers rural students face in accessing and maintaining the scholarship. This study draws on the Geography of Opportunity framework to examine how place, specifically rural versus urban origin, influences how effectively students can benefit from the HOPE Scholarship program. While the program is intended to promote college access through merit-based aid, its impact may vary depending on a student's geographic context. Students from urban areas with more resources may be more likely to attend and succeed in college. In contrast, rural students may face structural challenges that limit their ability to benefit from the HOPE Scholarship equally. Using this framework allows the study to critically examine whether geography plays a role in the effectiveness of state financial aid and adds to a growing body of research that considers equity not only in terms of who has access to college, but who succeeds in college, and how place shapes that journey.

### **College Access, Affordability, and Retention**

College access and affordability remain critical concerns in higher education policy, especially as states rely on programs such as Georgia's HOPE Scholarship program to improve affordability and expand opportunity. While research continues to demonstrate that a college degree generates significant returns, affordability barriers, and differences in outcomes persist. For HOPE Scholarship recipients, the promise of tuition coverage encourages enrollment, but the ability to remain enrolled and complete a degree often depends on factors beyond the initial cost relief.

### *Access and Enrollment*

The ability of financial aid to cover tuition costs is a strong influence on whether and where students enroll in college. A consistent finding across students is that lower net prices increase college enrollment, particularly for low-income and first-generation students (Hemelt & Marcotte, 2011). Need-based programs like the Pell Grant have been shown to raise both enrollment and degree completion, while merit-based programs such as the HOPE Scholarship program tend to expand in-state enrollment but often redistribute aid toward students already more likely to attend college (Cornwell & Mustard, 2001b; Dynarski, 2000; Sjoquist & Winters, 2015).

Access is not only found to be shaped by price but also by place. Students enroll close to home, and those with limited postsecondary options face reduced likelihood of attendance (Hillman & Weichman, 2016; Turley, 2009). For rural students in Georgia, the combination of distance, transportation, and living expenses can reduce the impact of the HOPE Scholarship on recruitment, since tuition coverage does not extend to housing, food, books, fees, or other living expenses. Nationally, unmet financial need remains a significant predictor of attrition (Ledford, 2023). Rural students may be disproportionately impacted since enrolling at campus far away from home requires taking on these additional costs.

Even when tuition is covered, students from lower-income and rural backgrounds may need to work longer hours to cover living expenses, potentially reducing credit accumulation and academic performance and persistence (Goetz et al., 2008). Further, the complexities and information gaps associated with financial aid, such as completing the Free Application for Federal Student Aid (FASFA), can negatively impact low-income

and first-generation families. In Georgia, even when HOPE Scholarship eligibility is clear, families may underestimate living costs, leading to financial stress later in college that may impact retention.

### ***Retention and Persistence***

Retention is just as important as recruitment for realizing the long-term benefits of financial aid. In Georgia, HOPE Scholarship recipients often face high attrition rates, with less than half retaining the scholarship through graduation (University System of Georgia, 2019). Scholarship loss is especially common among students with weaker academic preparation, heavier work obligations, or majors in fields with rigorous coursework such as STEM (Dee & Jackson, 1999; Sjoquist & Winters, 2015). For rural students, these risks are compounded by fewer advanced coursework opportunities in high school, cultural and social adjustment challenges at larger campuses, and higher unmet need due to relocation costs. As a result, even students who are successfully recruited into college through the HOPE Scholarship program may be less likely to retain the scholarship or persist to graduation.

### ***Relevance to the Study***

These patterns suggest that access, affordability, and retention interact across the lifecycle of a student attending college, which is relevant to this study and the risks rural students face in scholarship loss and non-completion. The literature indicates that:

- College affordability policies raise access, but the benefits vary.
- The HOPE Scholarship in Georgia reduces access barriers but does not cover non-tuition costs that weigh heavily on rural students.
- Retention depends on both financial capacity and academic preparation.

## **Merit-Based Financial Aid and Equity**

### ***National Trends in State Merit-Aid Programs***

Since the creation of Georgia's innovative HOPE Scholarship program, merit-based scholarships have become popular among states, aimed at playing a vital role in encouraging academic achievement, promoting equal access to higher education, and fostering economic progress. Most research regarding the efficacy of merit-based scholarships focuses on the impact on enrollment, particularly as eligibility requirements change. For example, Crowne (2022) assessed the effect of a merit-based scholarship program on enrollment yield through case study research of a Japanese branch of a large United States university and found positive enrollment yields and academic rank for scholarship recipients compared to non-recipients. Zhang and Ness (2010) also find that merit-based programs increase resident enrollment and decrease the migration of students attending college out of state. Further, Farrell and Kienzl (2009) found that while merit-based scholarships increase enrollment, policymakers should consider other factors, such as need-based financial aid, to help close the gaps and assist students with low socioeconomic backgrounds. Correspondingly, Biswas and Dasgupta (2023) found that while enrollments grew following program inception, they tended to decline as eligibility requirements elevated. Studies also find that while merit-based scholarships are found to increase enrollments, they may not improve the quality of students (Upton, 2016).

While enrollment impacts of merit-based aid have been widely studied, research on retention and persistence shows more mixed results. In contrast to enrollment-based findings, Bugler et al. (1999) were among the first to note that although Georgia's HOPE Scholarship program increased initial enrollment, many recipients lost eligibility after the

first year due to GPA requirements. Other state-level studies show these same patterns with Trant et al. (2015) examining Tennessee's HOPE program and finding that high school GPA, class attendance, and critical thinking skills predicted scholarship retention, with marginal students losing aid at disproportionately higher rates. Erwin and Binder (2020) observed that some merit-based programs unintentionally encourage students to attend institutions for which they are underprepared, further increasing the risks of losing the scholarship. Some research even suggests that merit-aid programs are adopted in states with lower completion and retention rates (Doyle, 2006). Manic and Ptukhina (2022) examined retention and migration patterns of college graduates in states with merit aid programs over 28 years and found that states with these programs retain college graduates at more significant rates but, over time, weaken, especially for states that spend more on the merit-based aid. This research validated prior research that financial aid improves retention but found the effects minor for the neediest students (Singell, 2004).

### ***Equity Concerns and Need-Based Aid***

Only a few studies examine merit-based aid's impact on retention for marginal students, specifically. Nationally, scholars conclude that merit-based programs often provide the greatest long-term benefits to the academically prepared, middle and upper-income students, while low-income and underrepresented students face higher risk of scholarship loss (Singell, 2004; Sjoquist & Winters, 2015).

Other research focuses on the impact of merit-based aid programs on equity and need-based aid. For example, Doyle (2010) examines the impact of merit-based aid on need-based aid over time. While the findings show no considerable evidence that merit-based aid is displacing need-based aid, the research acknowledges that policymakers

should consider revising merit-based aid programs in terms of equity and progressiveness.

Lastly, the literature also suggests that merit-based programs have a minimal impact on increasing educated labor within a state, primarily contributing to a disproportionate amount of funds being given to middle to upper-class students who would have attended college anyway and no incentives to stay in the state after graduation (Groen, 2011).

### ***Target Populations and Geographic Gaps***

Regarding the literature pertaining to merit-based scholarships for underserved students, a few studies previously mentioned acknowledge barriers for marginalized students but there is a gap in the literature specifically focused on the impact based on the differences in geographic backgrounds of students.

### **Georgia's HOPE Scholarship Program**

#### ***History and Policy Development***

**Origins of HOPE.** Former Governor Zell Miller created the HOPE Scholarship program in Georgia in 1993, which has become known as the most popular merit-based scholarship program in the United States. Funded by a portion of proceeds from the Georgia Lottery, the HOPE Scholarship program has transformed education in Georgia by providing scholarships to millions of students in the state who have demonstrated academic achievement to pursue post-secondary education (Boyd, 2022). This funding mechanism quickly gained popularity, with Condon et al. (2011) finding it to be successful less than two decades after its inception in raising awareness in Georgia regarding the positive impact of higher education and becoming a model used by other

states. Cornwell et al. (2003) found that four-year college enrollments in Georgia increased six % in the first four years after the HOPE Scholarship program was implemented. Not only did the HOPE Scholarship program have a positive impact on college enrollment, but also on high school graduation rates. A similar study by Yadudu (2017) examined differences in high school graduation rates between states and Georgia to understand better if merit-based aid programs such as the HOPE Scholarship program have a positive impact beyond increasing college enrollment and found that for Georgia, the HOPE Scholarship increased high school graduation rates, improved standardized test scores, and increased grade point averages.

In reflecting on Georgia's policy landscape, prior literature argues that the most consequential public policy decision in Georgia over the past half-century was the adoption of the state lottery and creation of the HOPE Scholarship program (Golden, n.d.). Golden notes the HOPE Scholarship as a signature public policy accomplishment that helped position Georgia as a Growth State. Using census data, he illustrates that between 1980 and 2020, Georgia's college-educated population grew from 14.6 % to 33.6 %, one of the most dramatic rises among Southern states, second only to North Carolina. The HOPE Scholarship program has become deeply embedded in Georgia's political identity and widely regarded as a signature policy success. This status has made the program politically untouchable, even as research has raised equity concerns and questions regarding its long-term sustainability (Suggs, 2016; Lanford, 2017). As a result, policy debates around the HOPE Scholarship often emphasize preserving its popularity and lottery funding stream rather than considering reform.

While Coleman's reflections provide a powerful policy narrative highlighting the political vision and momentum surrounding the HOPE Scholarship program, some research complicates this picture showing the positive effects of the HOPE Scholarship were not found for all classifications of students. Dynarski (2000) assessed HOPE's impact on college attendance rates of middle and upper-income students and found that college attendance increased for these groups after the inception of the program, creating more significant racial gaps between black and white students and between students from low and high-income families. Likewise, Cornwell and Mustard (2004) examined the program's impact on minority enrollment and outcomes. They concluded that students from high schools with a large share of black students are less likely to receive and retain the HOPE Scholarship, attributed to preparation for college influenced by families, peers, and the quality of schools. More significantly, Evans (2017) demonstrates how demographic and socioeconomic factors such as income, race, and ethnicity negatively impact students' potential for receiving the HOPE Scholarship.

**Transition from Hybrid to Merit-Based.** The HOPE Scholarship program has undergone many changes specifically related to eligibility criteria, award amounts, and types of expenses the scholarship covers to ensure sustainability. The original HOPE Scholarship included a family income-eligibility cap, which was raised in 1994 and abolished entirely in 1995, quickly eliminating the needs-based component of the program. During this same period, new academic requirements were enacted, mandating high school students maintain a B average in core classes to receive the scholarship.

Some reviewers have noted that this transformation was driven by political influence that created unintended consequences and ultimately widened educational

access disparities. For example, within the first decade after the HOPE Scholarship program was launched, Bradbury and Campbell (2003) suggested that the eligibility requirements negatively impacted high school education by encouraging grade manipulation and dilution at the local levels so more students could receive the aid. Soon after the first changes to the program, Cornwell and Mustard (2002) and Chen (2004) reported that the scholarship's most significant shortcomings are the distributional consequences of helping wealthier families send students to college at the expense of the poor. These shifts were also influenced by the financial sustainability of the program. Lottery revenues, which fund the program, have not always kept pace with rising tuition and enrollment demands, creating budgetary pressures that provoked tightening eligibility requirements (Sjoquist & Winters, 2015). As Georgia's college-going population grew, particularly among students who previously would not have attended college, policymakers made these changes to preserve the program's solvency.

In 2011, the most meaningful change to the HOPE Scholarship program occurred with the addition of the Zell Miller Scholarship, which covers full tuition for students graduating from high school with elevated academic achievements, including the requirement for higher GPAs and more rigorous core academic credits. Following this modification, research indicated policymakers should mitigate further disparities in the HOPE Scholarship program and restore need-based solutions. For example, Taylor (2015) found that HOPE does not integrate disadvantaged student populations and suggested policy proposals for alleviating these disparities with the addition of need-based scholarship programs for low-income students. Other supporting research examines the disparities of the HOPE Scholarship program, finding gaps specifically for students

from low-income families and suggesting new policy initiatives to close the gaps, including a stand-alone needs-based financial aid program to supplement the program (Suggs, 2016).

Lee (2020) posits that the HOPE Scholarship fails to provide opportunities to low-income students, and instead funds students from affluent families to attend the University of Georgia. Recently, Song and Rubenstein (2024) examined the effects of the design changes of merit-based scholarships on enrollment trends. They concluded that the highest-achieving students receiving the new Zell Miller Scholarship are more likely to attend four-year institutions after the changes to HOPE in 2011, and those receiving only partial scholarships are less likely to attend after the changes due to reduced certainty of funding. Ironically, a study by Cornwell and Mustard (2001a) found that while enrollments in Georgia did increase at four-year institutions after the program was implemented, the increases could be primarily attributed to the financial incentive for students who would have attended two-year institutions to attend four-year institutions instead. In contrast, for those students from poorer communities who chose to pursue higher education following the HOPE Scholarship program policy changes, Shell (2016) found that these students are steering away from four-year universities and toward technical and community colleges.

These findings reinforce the analyses of the HOPE Scholarship's history as viewed through the political frameworks of Taylor (2015), Lanford (2017), and Sirois (2020). Their research concludes that while the program has profoundly influenced higher education in Georgia, the original social equity objectives established by Governor Zell Miller during its implementation have waned over time. As political priorities have

shifted, the program has regressed and decreased college access for many Georgians. Their studies validated an earlier study by Rubenstein (2003) showing how political pressures have negatively influenced the program's efficacy regarding social equity, attendance, and retention. All concluded that the program needed further critical review and policy revision to fulfill Governor Miller's original purpose and goals.

### ***Scholarship Design***

The HOPE Scholarship program remains a key element of Georgia's commitment to higher education. Funded by the state lottery and awarded based on academic merit, it rewards students who excel in high school and maintain strong performance in college. However, the details on eligibility, retention, and if it ultimately leads to success can significantly influence whether it helps those students it aims to support.

**Eligibility and Requirements.** To earn the HOPE Scholarship, students must meet several key criteria, including graduation from a Georgia high school with at least 3.0 Grade Point Average (GPA) in core courses, successfully completing a set of advanced classes, and continuing attending college full-time while maintaining a 3.0 cumulative GPA. There is also a seven-year window of eligibility post-high school to complete college and students can lose the scholarship if they slip below the GPA threshold. These requirements seem straightforward in rewarding hard work with college support. However, students from rural areas may have limited access to advanced coursework, making them less capable to meet these benchmarks. These limitations highlight how policy design can favor more affluent students, even when the criteria are merit-based.

Also, because the HOPE Scholarship covers only tuition, it interacts heavily with federal need-based aid. Many low-income students rely on Pell Grants to cover other expenses, yet the combined awards still leave unmet funding needs. Unlike many states, Georgia does not maintain a need-based companion program to complement the HOPE Scholarship, a gap previous studies identify as a key limitation in supporting the state's most vulnerable students (Singell, 2004; Taylor, 2015;).

### ***Access, Retention, and Completion Trends***

The initial impact of the HOPE Scholarship program was powerful. College enrollment across Georgia surged after its inception, demonstrating that tying financial aid to merit can open doors for more students to attend college (Cornwell et al., 2003). While the program encourages students to pursue college, retaining them is a different and difficult challenge. Prior research points to a troubling trend. Soon after the implementation of the HOPE Scholarship program, questions surfaced regarding the program's impact on enrollment and retention and effectiveness for student success to assess whether the state is maximizing the benefits of the scholarship.

HOPE Scholarship recipients have been found to have better persistence and outcomes than students not receiving the scholarship, particularly for recipients with higher baseline GPAs and an accumulation of more credit hours and for recipients who attended 4-year institutions (Henry et al., 2004). However, Bugler et al. (1999) noted that while the program positively impacted enrollment and kept students in Georgia, many recipients did not retain the scholarship through the entire four years of college. According to the University System of Georgia (2019), less than half of HOPE or Zell Miller Scholarship recipients retain the funding through graduation. A study by the

Georgia Policy Institute examines rates at which recipients of the HOPE and Zell Miller Scholarships change during students' college careers given the changes in policy allowing scholarships to be gained and regained at specific grade checkpoints. The findings of this research point to the fact that scholarship loss is especially true for minority and low-income students with frequent changes to scholarship status and less likelihood of gaining and retaining the funding and completing college (Ribar & Rubenstein, 2021). An earlier and conflicting study by Dee and Jackson (1999) concluded that neither race nor ethnicity of students significantly impacts retention, but students taking challenging courses in science, engineering, and computing are at an increased risk of losing funding; however, the data studied was limited to the first few years after the inception of the program.

Several design features of the program, combined with prior research, help explain these low retention rates. The strict GPA checkpoints, along with limited opportunities to regain eligibility, create high stakes that particularly disadvantage students with weaker academic preparation (Dee & Jackson, 1999; Ribar & Rubenstein, 2021). The financial management behaviors of students also impact who retains and loses the HOPE Scholarship. Working students with positive financial behaviors are found to be likelier to maintain the scholarship than those with significant levels of credit card and student loan debt, which is often associated with students with greater financial barriers, such as rural students (Goetz et al., 2008; Rhodes, 2022).

The loss of the HOPE Scholarship is found to have substantial consequences for students as they are more likely to stop out, transfer to lower-cost institutions, or drop out entirely (Bugler et al., 1999; Georgia Budget & Policy Institute, 2022). Recognizing this problem, some institutions have developed programs aimed at targeted interventions.

Georgia State University's "Keep HOPE Alive" program, which offers modest stipends and intensive advising to student who lose the HOPE Scholarship, nearly double graduation rates for participants compared to peers without such support (Complete College Georgia, 2020). These findings suggest that timely financial and academic interventions can mitigate the negative effects of scholarship loss.

It is also important to note that the Zell Miller component of the HOPE Scholarship program, despite being a significant addition, has not demonstrated substantial impacts on enrollment or graduation rates. This lack of impact is likely due to wealthier students, who are higher-performing and less price sensitive, being the primary recipients of the scholarships (Jones et al., 2022). These students are likely to attend and graduate from college regardless of receiving the HOPE Scholarship.

While there are a few examples of policy reports that acknowledge there are gaps in the HOPE Scholarship policies in Georgia related to low-income and marginalized students, no broad research studies focus specifically on rural students. Specifically, there is a lack of comprehensive analysis on how the HOPE Scholarship impacts access to higher education in rural communities, the unique challenges that rural students face in gaining and retaining the scholarship, and how rural students compare to their urban counterparts. More research is needed to understand the effectiveness of the HOPE Scholarship in addressing socioeconomic barriers that impact rural students and how geographic location influences their academic success.

## **Rural vs. Urban Student Higher Education Outcomes**

### *Access and Enrollment Barriers*

The U.S. Department of Agriculture reports that only 20 % of rural adults have a college degree, which is lower than the national average of 33 % (Marré, 2017). Although rural students excel in high school, many are not pursuing higher education (Postsecondary National Policy Institute, 2021). Rural students face unique barriers to college attendance, including lacking broadband access, living far away from more prominent colleges and universities, and coming from low-income families, all impacting attitudes and increasing skepticism regarding the value of a college education (Byun et al., 2012; Rosenboom & Blagg, 2018; Whiteside, 2021). Their perceptions are shaped by high school counselors and college admissions offices, but most significantly by parents and specifically by those with lower socioeconomic status (Tieken, 2016). For first-generation rural students, these are often anxious conversations attempting to balance broadening opportunity with leveraging financial resources (Yang & Venezia, 2020). Grant and Roberts (2022) find that first-generation rural students with lower socioeconomic status often experience financial barriers and opposition from parents to attending more prominent universities. Only those rural students with higher family capital and connections to larger institutions through athletic program awareness or family alumni are likely to attend.

Lower socioeconomic status is found to be a primary contributing factor to rural students' postsecondary decisions, with rural status making students less likely to decide to go to college and more likely to delay the process (Byun et al., 2015). Perceptions related to financial investment in college can be the main deterrent for lower-income students and families (Provasnik et al., 2007). Even high-achieving high school graduates

from rural communities are often challenged by financial status and parental income and have concerns about college costs, financial aid, and student loans that deter them from even applying to attend college (Giancola & Kahlenberg, 2016; Goldman, 2019; Morton et al., 2018; Tieken, 2016). Further, overused jargon associated with higher education concepts, especially involving subjects like financial aid, can increase these barriers (Grant, 2019).

### ***Persistence and Completion***

For those rural students who decide to pursue college, many need help with the challenges of attending more prominent colleges and universities with increased size and scope of the campus, expanded academic offerings, cultural differences, and access to support services (Guiffrida, 2008). Moreover, many students rely on loans for financial support, and rural students have been found to accumulate more student debt than their urban or suburban counterparts (Rhodes, 2022). Also, elevated levels of student loan debt are associated with the migration of college graduates out of rural communities and into larger cities for employment, which does not help resolve the “rural brain drain” or boost the economic strength of rural communities (Mezza et al., 2019). Regarding rural college student retention, challenges associated with coming from a lower socioeconomic background negatively impact degree completion. Byun et al. (2012) found the retention of rural college students is impacted by ignorance regarding costs and financial aid policies, feelings of disconnection and feeling different than others, and the realization of needing to work harder to meet the rigorous demands of college culture.

Studies have also evaluated the challenging political and social environments in which rural students navigate post-secondary education, focusing on the institutional

resources necessary for supporting them through the process and easing the constraints long associated with college access and attainment inequalities. Strategies are essential for policymakers, communities, higher education institutions, and professionals to prioritize rural education, collaborate on efforts to reform policy, mentor, recruit, communicate, and educate rural populations, and change the perceptions and deficiencies often associated with rural student educational outcomes (Means, 2018; Showalter et al., 2019).

Showalter et al. (2019) uses five indicators to determine the condition of rural education and urgency in addressing issues in each state nationwide including importance, diversity, policy context, educational outcomes, and college readiness. He concludes that Georgia ranks seventh in terms of these most dire issues in rural education, highlighting that poverty-related challenges are prevalent throughout the rural footprint of the state and stand in the way of postsecondary readiness and attainment. While merit-based scholarship programs, such as the HOPE Scholarship, aim to mitigate challenges associated with financing a college education, research is unclear regarding its effectiveness for underserved students such as rural students. HOPE Scholarships only cover tuition and do not cover living expenses necessary for living away from home. While low-income students often qualify for federal need-based grant programs, such as Pell Grant funding, the maximum annual awards usually do not cover all school-related expenses (Georgia Budget & Policy Institute, 2022). This gap in funding contributes to the financial challenges of college attendance faced by rural students who live far away from colleges and universities.

Some researchers have suggested institutional scholarships to supplement rural students focused on outreach efforts to meet the specific needs of this unique population of students (Provasnik et al., 2007). Yan (2002) goes on to point out that rural students with more than one type of financial aid and those with higher socioeconomic status (SES) persisted at better rates than those with less financial aid and lower SES. A few examples of the success of supplemental, institutional aid are found in research, such as the George Mason University scholarship program aimed at recruiting and retaining rural students, showing that students in the program have higher GPAs and first-year retention rates than the national average. The study also found an increase in the number of rural students who applied to the university due to the program (Jones & Cleaver, 2020).

Similarly, Lewine et al. (2021) examined a unique program at a four-year university that provided full financial support for students with low socioeconomic status and found that removing economic burdens from low-income students makes a significant difference in overcoming barriers associated with achieving postsecondary education. McDavis (2010) noted an Ohio University president's account of a unique merit and need-based scholarship supporting first-year rural students. The scholarship was created to help break the cycle of rural, poor populations deciding to forgo college due to financial constraints, highlighting the first class of recipients experiencing a 100 % retention rate.

Elue and Martinez (2019) also recognize campus-based aid as a means for supporting rural student college attendance and completion. Their research shows that while some institutions offer scholarships, none are intended explicitly for bachelor's degree-seeking students. This discrepancy could negatively impact enrollment and

persistence at larger universities for low-income, rural students. Perhaps even more significant, Campbell et al. (2015) argue that financial aid policies, specifically penalties, create restraints and inequities for poor students and call for financial aid policy reform that supports flexibility and improved communication.

### ***Comparison with Urban Counterparts***

The difficulties rural students face in accessing and succeeding in higher education become more apparent when compared to their urban counterparts. National data show that rural students are significantly less likely to enroll in college immediately after high school, more likely to attend smaller institutions closer to home, and less likely to a complete bachelor's degree (Byun et al. 2012; Institute for College Access & Success, 2023). In fact, rural college completion rates still lag well behind the national average, with 19 % of rural students completing a bachelor's degree compared to 33 % of urban students holding a bachelor's degree (USDA Economic Research Service, 2017). Beyond academics, rural students frequently face barriers that urban students may not encounter, such as long commutes, limited public transportation, food, and housing insecurity, and less access to resources to prepare them for college (Mowreader, 2024). These differences represent persistent inequalities that shape how rural students experience higher education. Understanding this rural-urban divide is essential for evaluation whether financial aid programs like the HOPE Scholarship program are equitable, or if they unintentionally reinforce the gaps they aim to close.

### **Geographic Disparities in Georgia**

Even with financial aid programs like the HOPE Scholarship program, where a student grows up in Georgia can still play a significant role in shaping their path through

higher education. The resources available to students often vary dramatically between rural and urban areas, such as the quality of K-12 education and access to nearby colleges. This section explores how these place-based differences continue to affect educational journeys.

### ***Educational Infrastructure Gaps***

For many students in Georgia, preparing for college starts with limited options. The high schools they attend may not offer as many advanced classes, dual enrollment opportunities, or comprehensive guidance counseling. Recruiting and keeping highly qualified teachers is a persistent challenge in many rural school districts (Showalter et al., 2023). Additionally, basic infrastructure, including reliable internet, access to transportation, and even proximity to a college campus can be difficult for students living in these areas (Rosenboom & Blagg, 2018). These gaps can make the transition to college feel overwhelming and increase the likelihood that students choose not to enroll and if they do enroll, struggle to retain once they get there. Even with the HOPE Scholarship, students who do not start with a strong educational foundation may not have an equal footing as their urban peers.

### ***HOPE Aid Distribution***

Although the HOPE Scholarship program is meant to close equity gaps through availability to all students in Georgia, how and where the funding is most utilized is not evenly distributed. Rural students are much more likely to attend one of the state's regional comprehensive universities, colleges that serve local populations but often operate with fewer resources than Georgia's flagship research institutions (Lee, 2020). The flagship, well-funded institutions tend to attract students who are already well-prepared and more

likely to maintain their scholarship eligibility over time. Meanwhile, students at state or regional universities, many of whom are first-generation or from lower-income backgrounds, may face additional hurdles that make it harder to keep the scholarship after the first year (Dee & Jackson, 1999). This imbalance raises important questions about whether the HOPE Scholarship supports all students equally, or if it inadvertently benefits more affluent students.

### ***Spatial Patterns in Enrollment and Completion***

Much attention has been given to those who receive the HOPE Scholarship, but little has been studied regarding where these students come from and how well they do after enrolling. Many rural counties in Georgia continue to show lower rates of bachelor's degree attainment despite having high school graduation rates even to or exceeding urban students (Showalter et al., 2023). Even when rural students complete college, studies show they are more likely to migrate to metropolitan areas for employment, contributing to the “rural brain drain” and reinforcing geographic disparities in educational and economic outcomes (Mezza et al., 2019). What is missing is a deeper look at how academic success plays out geographically. This study addresses that gap by using heatmaps to map academic outcomes, including GPA, credit hours, and graduation by county or origin. These visual tools offer powerful insight into where rural students may be falling behind and where targeted support could have the most impact. Understanding these patterns can help inform how to improve the HOPE Scholarship program to expand opportunity to all Georgia students, regardless of where they live.

### **Chapter Summary and Gap in the Literature**

This chapter provided an overview of the background and efficacy of merit-based

scholarship programs, including the HOPE Scholarship program in Georgia, and the implications of financial aid policies for rural student achievement and how geography interacts with merit aid. The Geography of Opportunity framework demonstrates that place shapes access to resources and opportunities. Studies regarding access and affordability reveal that while financial aid that covers tuition increases enrollment, non-tuition costs, financial aid information gaps, and student preparation gaps continue to influence outcomes, Merit-based financial aid, such as Georgia's HOPE Scholarship program, has expanded enrollment but generated mixed equity and completion effects. Research on rural students highlights unique barriers that can undermine the ability to fully benefit from the HOPE Scholarship. Despite extensive research on merit-aid, little research directly examines whether rural students who receive merit-aid experience different outcomes compared to their urban peers. This study addresses that gap by using student-level data to analysis academic performance and persistence across place of origin.

The next chapter describes the research design used to examine the differential outcomes of HOPE Scholarship recipients by geographic origin. The data sources are outlined, including de-identified student-level records provided by the University System of Georgia, and the process detailed for classifying students as rural or urban based on their county of origin. The chapter also explains the construction of outcome variables, including cumulative GPA, credit hours earned, and graduation withing six years, along with control variables such as high school GPA, Pell eligibility, gender, and race/ethnicity. Finally, the chapter presents the descriptive, spatial, and inferential strategies used to answer the research question.

## **Chapter III**

### **Methodology**

#### **Overview**

The purpose of this chapter is to provide a description of the methodology used to complete this study. The chapter explains the research design, describes the population and sample, describes the data sources and preparation, defines the variables and discusses the analytic approaches used to examine the academic performance and outcomes of students at Georgia's regional comprehensive universities, with particular attention to HOPE Scholarship trajectories and geographic context. The choices for methodology were made with the goal of providing a rigorous foundation for understanding how HOPE Scholarship eligibility and student geographic origin intersect to impact student performance and outcomes.

This study builds on the conceptual foundation of the Geography of Opportunity established in Chapter II. The framework highlights the way in which place expands and constrains individual opportunities. In higher education, geography is often thought to influence access to resources, scholarship funding, and ultimately degree attainment. Therefore, a quantitative, longitudinal research design was implemented that integrates descriptive, spatial, and inferential methods for understanding if place influences college outcomes for students who receive Georgia's Hope Scholarship and choose to enroll in college. The dataset in this study consists of student-level, de-identified administrative

records provided by the University System of Georgia (USG) Research and Policy Analysis (RPA) office. The dataset contains multiple cohorts of first-time, full-time freshman enrolled between fall term 2013 and summer term 2019. The dataset includes demographic information, high school performance, enrollment patterns, academic performance, financial aid receipt, and graduation outcomes, across multiple academic terms, making it possible to examine both the cross-sectional differences between rural and urban students and the longitudinal dynamics of HOPE Scholarship eligibility.

### **Research Design**

The primary unit of analysis was the individual student. The research design progresses in three intentional stages. In the first stage, the multi-term records are flattened to one row per student to construct (a) HOPE Scholarship trajectory groups, (b) end-of-observation academic performance outcomes using cumulative university GPA and cumulative credit hours earned, and (c) a binary indicator of bachelor's degree completion within a six year period. Students are categorized into distinct HOPE Scholarship trajectory groups that capture the dynamics of scholarship receipt across time enrolled at the institution. These groups include students who (a) maintain HOPE Scholarship eligibility throughout their enrollment, (b) never receive the HOPE Scholarship, (c) enter the institution without the HOPE Scholarship and later gain it, and (d) begin with the HOPE Scholarship but subsequently lose it, (e) lose the HOPE Scholarship and later regain eligibility, and (f) have variations in HOPE Scholarship eligibility throughout enrollment. This classification of HOPE Scholarship trajectories provides a more refined understanding of how scholarship status evolves during college

and to what extent trajectories may be associated with student performance and outcomes.

In the second stage, the study uses descriptive statistics and spatial visualization analyses to compare differences across the HOPE Scholarship trajectory groups and geographical contexts, specifically for the trajectory groups associated with students enrolling with the HOPE Scholarship. Measures such as cumulative university grade point average (GPA), cumulative credit hours earned, and bachelor's degree completion are compared across both trajectory groups and geographic context. Additionally, geographic patterns are further explored using county-level heat maps, which display the distribution of academic performance, HOPE Scholarship persistence and attrition, and degree completion across rural and urban areas of Georgia. This stage provides a broad descriptive and visual overview of academic and geographic variation in HOPE Scholarship trajectory experiences.

In the final stage, the study utilizes inferential regression analyses to assess predictors of academic performance, HOPE Scholarship trajectory status, and bachelor's degree completion. Ordinary least squares (OLS) linear regression is used to model the continuous outcomes regarding cumulative university GPA and cumulative university credit hours, and binary logistic regression is employed to model the binary outcome of bachelor's degree completion. To address differences in HOPE Scholarship eligibility trajectories between rural and urban students, a multinomial logistic regression model is used to estimate the likelihood of membership in each HOPE Scholarship trajectory category. Collectively, these regression models are conducted to estimate the impact of geographic origin and HOPE Scholarship dynamics on student success.

Together, this three-stage approach to the research design integrates descriptive, spatial, and inferential methods to provide a comprehensive examination of HOPE Scholarship dynamics among rural and urban students who enroll with the scholarship and their relationship to student success. The descriptive stage provides a foundation for understanding the basic differences between groups, the spatial stage illustrates visually how opportunity varies across Georgia, and the inferential stage evaluates these relationships to determine which factors most strongly influence student outcomes. By capturing both geographic disparities and longitudinal changes in scholarship status, the design aligns with the Geography of Opportunity framework guiding this study and provides a practical basis for addressing the following research questions:

RQ1: Is there a difference in academic performance between HOPE Scholarship recipients from rural areas and those from urban areas attending regional comprehensive institutions in Georgia?

H1: HOPE Scholarship recipients from rural areas attending regional comprehensive institutions in Georgia are expected to have lower academic performance, as measured by cumulative GPA and credit hours earned, compared to their urban counterparts.

RQ2: Is there a difference in patterns of HOPE Scholarship receipt over time between recipients from rural areas and those from urban areas attending regional comprehensive universities in Georgia?

H2: Rural students attending regional comprehensive universities in Georgia are expected to exhibit lower continuity of HOPE receipt across terms compared to their urban counterparts.

RQ3: Is there a difference in bachelor's degree completion between HOPE Scholarship recipients from rural areas and those from urban areas attending regional comprehensive institutions in Georgia?

H3: HOPE Scholarship recipients from rural areas attending regional comprehensive institutions in Georgia are expected to have lower rates of bachelor's degree completion compared to their urban counterparts.

Considering the problem statement and research questions, this study utilizes a quantitative research design grounded in the analysis of longitudinal, student-level data. Quantitative approaches are well established in higher education research because they enable systematic measurement of academic outcomes and the testing of statistical relationships between financial aid dynamics, demographic characteristics, and institutional performance measures (Creswell & Creswell, 2018; Perna & Thomas, 2008). The use of a large dataset such as the one used in this study offers a unique opportunity to examine patterns that are not visible through small-scale surveys or case studies. A quantitative approach ensures both statistical power and generalizability within Georgia's regional comprehensive universities, ensuring findings have broader applicability to similar institutions (Toutkoushian & Paulsen, 2016).

The rationale for utilizing this design is threefold. First, the categorization of students into HOPE Scholarship trajectory groups requires longitudinal perspective to follow changes in scholarship eligibility over time. Second, the incorporation of spatial variation in county of origin aligns with the Geography of Opportunity framework, which emphasizes how place influences educational opportunity and attainment (Galster & Sharkey, 2017). Third, because the data follows students over time, the research can track

how each student changes while controlling for the stable traits that do not vary, making findings more dependable and less affected by hidden factors (Baltagi, 2021).

The three stages also align directly with the Geography of Opportunity framework guiding this study. The descriptive stage establishes baseline differences in academic performance and scholarship receipt across student groups, reflecting how opportunity structure shape initial differences. The spatial stage connects geography to opportunity by visually mapping county-level variation in academic performance, HOPE Scholarship eligibility, and degree completion. Finally, the inferential stage examines whether a student's origin, together with their HOPE Scholarship eligibility status, predicts their academic performance and degree completion. This offers a clear, data-driven picture of how geography can either expand or limit students' opportunities in higher education.

### **Population and Sample**

The population for this study includes first-time, full-time freshman enrolled at Georgia's regional comprehensive universities between fall term 2013 and summer term 2019. These institutions include Georgia Southern University, Kennesaw State University, University of West Georgia, and Valdosta State University, which were selected because they represent the regional and access-orientated sector of the University System of Georgia (USG) and collectively serve large numbers of students from diverse geographic and socioeconomic backgrounds. Georgia Southern University and Valdosta State University serve many rural students. Regional comprehensive universities play a particularly key role in providing access to higher education for students for both rural and urban counties that make up regions across Georgia, making them an appropriate setting for examining variation in HOPE Scholarship outcomes.

Within this population, students are classified into two primary subgroupings. The first involved HOPE Scholarship trajectory groups, which capture patterns of scholarship eligibility during enrollment. Six categories are defined that capture how students' scholarship eligibility changes across time. These groups include:

1. Fully HOPE: Students who maintain the HOPE Scholarship for the entire time enrolled.
2. HOPEless: Students who never receive the HOPE Scholarship.
3. HOPE Winner: Students who gain the HOPE Scholarship after entering college without it.
4. HOPE Loser: Students who lose the HOPE Scholarship after beginning college with the award.
5. HOPE Regainer: Students who lose and subsequently recover the HOPE Scholarship.
6. Rollercoaster: Students with variations in HOPE Scholarship eligibility.

The second subgrouping was geographic origin, which distinguishes students by county of origin, classified as rural or urban using the 2010 U.S. Census Bureau's classification system. This distinction enables the study to analyze how geographic origin interacts with HOPE Scholarship eligibility trajectories to shape student outcomes. Together, these classifications provide the framework that allows for the comparisons of HOPE versus non-HOPE students, rural versus urban students, and the interaction of scholarship status by geography.

## **Data Source and Collection Procedures**

The data for this study were collected from the University System of Georgia (USG) Research and Policy Analysis (RPA) office through an official data request process, which included review and approval by a formal committee. Once approved by the committee, a formal Data Sharing Agreement was implemented to ensure compliance with all institutional and system-level ethical requirements. The request specified the inclusion of all first-time, full-time freshmen enrolled at Georgia's regional comprehensive universities between 2013 and 2019 and details regarding the research design, including the research questions, specified variables, and the planned statistical approach.

To protect student privacy and compliance with the Family Educational Rights and Privacy Act (FERPA), the RPA office prepared the dataset in deidentified form. All personally identifiable information (PII) was removed prior to delivery, and each student was assigned a randomized identification number to allow longitudinal tracking across academic terms while maintaining anonymity.

The data were securely transmitted to the researcher via MOVEit, USG's encrypted file transfer platform. This system allows for the secure download and storage of the files, ensuring both confidentiality and data integrity. The dataset included a comprehensive set of student-level variables relevant to the research questions. Key variables provided included:

- Demographic variables: gender, race/ethnicity, county of origin (rural/urban classification), and high school GPA.

- Academic outcomes: university GPA by term, cumulative credit hours earned, and degree completion.
- Financial aid status: HOPE Scholarship receipt by term, Pell eligibility

As explained in the next section, the student records containing these variables were restructured into a single row per student, including patterns of HOPE Scholarship eligibility.

### **Data Preparation and Management**

The raw data files provided by the University System of Georgia (USG) Research and Policy Analysis (RPA) office were received in 28 separate files, with four files for each cohort covering enrollment, demographics, academic performance, and financial aid awards. To prepare the dataset for analysis, several steps were taken to ensure consistency, accuracy, and alignment with the study's research questions, which required cleaning, merging, and restructuring, aligned with best practices in preparing administrative datasets for quantitative research (Johnson & Christensen, 2019).

#### ***Cleaning and Merging Procedures***

Student-level records were cleaned to remove duplicate entries, correct formatting inconsistencies, and standardize institutional codes. The original USG data are structured in files with multiple records representing each term students were enrolled at one of the four studied institutions. Four separate data files for each cohort year were provided: an enrollment file, an awards file, a financial aid file, and a HOPE awards file. The enrollment file includes a randomly generated student identifier, cohort year, institution name, academic term of enrollment, county and state of origin, degree level code, student level number, gender, high school GPA, university cumulative GPA, institutional hours

earned, race/ethnicity, and matriculation term. The awards file contains the random identifier, cohort year, award term, and degree type. The financial aid file includes the random identifier, cohort year, award term, and degree type. The HOPE awards file provides detailed records including the random identifier, cohort year, and HOPE Scholarship award term.

For this study the files were flattened to one record per student linked using the random student identifier to include the ending term cumulative university GPA, cumulative institutional hours earned, a field indicating bachelor's degree completion, and a field indicating the HOPE Scholarship eligibility trajectory pattern. To identify each student's HOPE Scholarship trajectory patterns, a binary indicator was created at the term level, coded as True if the student received HOPE that term and False otherwise. These term-level indicators were then collapsed into a single student-level sequence that reflects their pattern of HOPE receipt across all enrolled terms.

Using this pattern, students were assigned to mutually exclusive trajectory categories. This structure enables the study to capture both cross-sectional differences, such as variation between rural and urban students within a single term, and longitudinal dynamics, including changes in HOPE Scholarship eligibility over time. The trajectory variable capturing HOPE Scholarship eligibility over time preserves the longitudinal dynamics of HOPE Scholarship receipt by observing patterns over the student's enrollment needed to address the research questions. By reshaping the data so each student has one record, while still maintaining the full pattern of their HOPE Scholarship eligibility, the study combines the advantages of longitudinal tracking with the simplicity of a cross-sectional dataset that can be used in regression analysis. These designs are

especially valuable in education policy research because they account for unobserved individual differences, improve causal inference, and allow examination of how outcomes change over time (Allison, 2009; Wooldridge, 2019).

### ***Handling Missing Data***

Cases with incomplete or invalid identifiers were excluded from the analytic sample, as they could not be reliably tracked over time. For outcome variables such as cumulative GPA and cumulative credit hours, missing values within a given term were treated as non-enrollment, consistent with USG reporting standards and excluded from the analyses. This approach follows Allison's (2002) recommendations for handling missing data in large-scale educational datasets.

### ***Recoding Variables***

Several variables were recoded to align with the study's analytic framework. County of origin was coded into a binary classification of rural (True) or urban (False) using the 2010 U.S. Census Bureau's designations. Bachelor's degree completion was coded as 1 if a bachelor's degree was conferred during the observation window of six years and 0 otherwise. HOPE Scholarship trajectory category was coded according to the pattern of HOPE Scholarship awards. Recoding decisions were guided by established best practices in higher education research, such as recoding variables and maintaining consistent interpretation across student groups (Perna & Thomas, 2008). This approach helped ensure that the variables aligned with the theoretical frameworks and were suitable for regression analysis.

### *Creation of Trajectory Categories*

To capture the fluid nature of HOPE Scholarship eligibility over time, students were categorized into six trajectory groups: (a) consistently retained the HOPE Scholarship throughout enrollment, (b) initially ineligible but gained the HOPE Scholarship after matriculation, (c) initially eligible but lost the HOPE Scholarship during enrollment, (d) lost the HOPE Scholarship and subsequently regained it, (e) never received the HOPE Scholarship, and (f) variations in HOPE Scholarship eligibility. These categories were created by tracking HOPE Scholarship award status across sequential terms and assigning students to the group that best reflected their longitudinal pattern of eligibility.

When classifying students into HOPE Scholarship trajectory groups, certain ambiguous cases were excluded to preserve the validity of the categories. Specifically, students whose cumulative GPA dropped below the 3.0 HOPE threshold but who only attended two terms with no subsequent enrollment were not included in the Fully HOPE group. While their record shows continuous HOPE Scholarship eligibility during the terms they attended, the absence of future observations combined with the cumulative GPA falling below the HOPE Scholarship threshold strongly suggests attrition or dropout, making their long-term status indeterminable.

Similarly, within the HOPE Loser group, students with a GPA above 3.0 who lost the HOPE Scholarship but continue to enroll after eligibility ended were excluded. In these cases, loss of eligibility may have been attributable not to GPA but to reaching the 128 attempted credit hour cap established by HOPE Scholarship policy. These cases introduce uncertainty into the classification and were therefore removed from the analytic

sample. This classification strategy follows trajectory-based methods described by Singer and Willett (2003), who emphasize modeling individual change over time and grouping individuals by their patterns of longitudinal outcomes.

### **Operational Definitions of Variables**

To ensure clarity and replicability, all variables used in this study are operationalized as follows. Variables are either dependent, independent, or control categories based on their role in research design.

#### Dependent Variables

1. Cumulative Grade Point Average (GPA):

University cumulative GPA at the end of each academic term, measure on a 4.0 scale, as reported by the University System of Georgia (USG). GPA serves as a continuous measure of academic performance (Pascarella & Terenzini, 2005).

2. Cumulative Credit Hours Earned:

The collective number of credit hours a student attempts successfully completes each term. This continuous measure reflects academic momentum and progress toward degree completion (Adelman, 2006).

3. Bachelor's Degree Completion:

A dichotomous variable (1 = graduated, 0 = did not graduate) capturing whether a student earned a bachelor's degree within the observation window of six years.

#### Independent Variables

1. HOPE Scholarship Trajectory Patterns

First, a dichotomous indicator created at the term level, coded as TRUE if the student received HOPE in that term and FALSE otherwise. These term-level

indicators were then collapsed into a single student-level sequence, used to classify students into distinct trajectory categories that reflect gaining, maintaining, losing, or regaining HOPE across enrollment. This variable is also used as a dependent variable in the multinomial regression model.

2. County of Origin (Rural vs. Urban):

A dichotomous variable, codes as TRUE for rural and FALSE otherwise, based on a student's county of permanent residence at matriculation, using the U.S. Census Bureau's 2010 rural-urban classification. Rural and urban status was determined at the county level using 2010 data for Percent Urban and Percent Rural by County (variables POPPCT\_URBAN and POPPCT\_RURAL). Counties were classified as rural if more than 50 % of the population resided in areas designated rural by the Census Bureau; all other counties were classified as urban. This classification aligns with the timeframe of the study (2013-2019) and is consistent with the U.S. Census Bureau's definitions of urban areas ( $\geq 50,000$  people) and urban clusters (2,500-49,999 people), with all remaining areas considered rural (U.S. Census Bureau, 2010).

Control Variables

1. Gender:

A dichotomous measure (Female, Male), as reported in student records.

2. Race/Ethnicity:

Categorical variables are coded into two variables: White or Other. Other captures Black or African American, Hispanic, or Latino, and Asian ethnicities, following USG reporting practices.

3. High School GPA:

Cumulative high school GPA at entry, measured on a 4.0 scale. This variable controls for prior academic preparation (Horn & Carroll, 1998).

4. Pell Eligibility:

Variable indicating eligibility for the federal needs-based Pell Grant, codes as True for eligible and False otherwise.

## **Data Analysis**

The data analysis for this study proceeded in three stages, reflecting both descriptive, spatial, and inferential techniques to examine HOPE Scholarship trajectories and their relationship to student outcomes. Statistical analysis was conducted with coding completed with the R statistical package.

### ***Step 1: Descriptive Statistics***

The first stage of analysis involved descriptive statistics, primarily for the HOPE trajectory groups, defined as HOPE Starters and including the following:

1. Fully HOPE – students who maintained HOPE in every enrolled term.
2. HOPE Losers – students who began with HOPE but lost it and did not regain it.
3. HOPE Regainers – students who began with HOPE, lost it, and later regained it.

For each group, comparisons were made across geography, academic performance, and academic outcomes. Descriptive tables summarize group means, standard deviations, and frequency distributions.

## ***Step 2: Spatial Analyses***

To complement the tabular results, spatial heat maps were produced at the county level. These maps display the geographic distribution of academic performance, completion outcomes, and HOPE Scholarship trajectory categories across Georgia counties, highlighting regional disparities in performance, completion, and the persistence, loss, and HOPE Scholarship eligibility.

To examine county-level patterns that could not be fully visualized by rural-urban comparisons on previous heatmaps, a county performance typology was developed. This typology integrates longitudinal academic performance and HOPE Scholarship trajectories to create a more granular measure of educational outcomes. First, mean high school GPA and mean college GPA were calculated for each county. Each variable was then divided into tertiles (top, middle, and bottom third) to categorize counties relative to one another. Tertiles divide a continuous variable into three equally sized groups, allowing for meaningful comparisons and easier interpretation of performance levels. Tertiles are often used in educational research to categorize students or geographical areas by performance or achievement (Adelman, 2006; Bowen et al., 2009; Perna, 2006). Typologies were used to simplify interpretation using a three-by-three matrix of possible performance patterns. Each cell in the matrix was assigned to one of five typology categories, including Consistently Strong, Recovery/Support Success, Inflation/Persistent Loss, Chronic Underperformance, or Mixed/Other based on the changes between high school GPA and college performance. Also, the dominant HOPE trajectory in each county (Fully HOPE, HOPE Loser, HOPE Regainer, Hopeless) was applied to relevant cells to distinguish performance patterns associated with scholarship retention or loss. Each

county's dominant HOPE Scholarship trajectory category was defined as the category with the highest proportion of students in that county. Counties that did not clearly align with a dominant trajectory were classified as Mixed/Other. The final typology was then mapped using spatial visualization to identify geographic clustering and regional variation in performance patterns. Integrating performance trends with HOPE Scholarship trajectories aligns with trajectory-based methods and reflects the importance of examining how place and financial aid intersect over time (Perna & Thomas, 2008). This approach allows for the identification of patterns and outlier counties where policy-relevant disparities may be most obvious. Using R and the ggplot2/maps packages, these spatial analyses collectively provide visual representation of how local context relates to academic outcomes, consistent with the Geography of Opportunity framework.

### ***Step 3: Inferential Analyses***

The third stage of analysis used inferential statistics to examine the relationships between geographic origin, HOPE Scholarship trajectory patterns, and key academic outcomes for students enrolling with the HOPE Scholarship. Ordinary least squares (OLS) linear regression models were used to predict academic performance. Two outcomes are analyzed: (a) cumulative university GPA and (b) cumulative credit hours earned. Predictors include origin, high school GPA, gender, race/ethnicity, and Pell Grant eligibility. Coefficients are interpreted as the expected linear change in the outcome associated with one-unit change in each predictor, holding other variables constant. Models use standard errors and results are reported as coefficients with 95% confidence intervals, p-values, and  $R^2$ /adjusted  $R^2$ . Next, multinomial regression was used to predict HOPE Scholarship trajectory categories using the predictors origin, high school GPA,

gender, race/ethnicity, and Pell eligibility. For each comparison group, the model reports odds ratios, standard errors, and statistical significance to show how each variable affects the likelihood of belonging to a specific trajectory category. Binary logistic regression was then used to predict bachelor's degree completion as a binary outcome (1 = completed, 0 = not completed) restricted to HOPE Scholarship recipients for the primary analysis. Predictors include geographic origin, high school GPA, gender, race/ethnicity, and Pell Eligibility. In addition, interaction terms between origin and HOPE Scholarship trajectory were estimated to test whether the effect of the scholarship patterns differed by place. Model results report odds ratios, standard errors, t-values, p-values, and 95% confidence intervals. Overall model fit was assessed using McFadden's  $R^2$ , commonly used to evaluate model fit in logistic regression. Values closer to 1 indicate better fit, and values between 0.2 and 0.4 are generally considered strong for models of this type.

### **Data Security Measures**

In compliance with IRB requirements and best practices for research data management, the de-identified dataset will be securely stored for a period of three years following the completion of this study. During this retention period, the data will remain on institutionally approved, password-protected systems with access restricted solely to the researcher and research advisor. After the three-year retention period, all data files will be permanently destroyed through institutionally required secure deletion methods to ensure that no information can be recovered. No copies will be archived on personal devices or unencrypted storage systems. These procedures ensure that data is protected not only during the study but also throughout the full data lifecycle.

## **Validity and Reliability**

Ensuring rigor in both design and analysis of this study was a central priority of this study. Multiple strategies were utilized to strengthen the validity and reliability of findings.

### ***Content and Construct Validity***

Validity was supported using student-level data provided by the University System of Georgia (USG) Research and Policy Analysis office. The dataset included established measures of academic performance (university cumulative GPA, cumulative credit hours earned, and bachelor's degree completion), financial aid status (HOPE, Pell eligibility), and demographic characteristics (race/ethnicity, gender, rural/urban origin). These variables align directly with the research questions and are consistent with prior studies examining college access and outcomes. Categorization of students into HOPE trajectory groups was based on term-by-term HOPE eligibility, providing a direct measure of persistence and loss.

### ***Internal Validity***

Threats to internal validity were minimized through careful research design. Because the study relied on administrative records, the risk of self-report bias associated with surveys was eliminated. Also, the use of longitudinal data allowed for the examination of changes over time, reducing the likelihood that the findings reflect isolated or atypical observations. Additionally, important background characteristics such as high school GPA, gender, race/ethnicity, and Pell eligibility were considered, strengthening causal claims.

### ***External Validity***

Generalizability was enhanced by including the full population of first-time, full-time freshman at Georgia's regional comprehensive universities between fall term 2013 and fall term 2019. This comprehensive scope reduces sampling bias and provides a representative picture of student experiences across institutions within the sector. While findings may not extend to all colleges in Georgia or nationally, the inclusion of multiple universities strengthens external validity within the regional comprehensive context.

### ***Reliability***

Reliability was addressed through consistent coding and classification procedures. The assignment of students to HOPE Scholarship trajectory categories was based on clearly defined rules applied uniformly across the dataset. Statistical analyses (descriptive statistics, spatial analyses, and regression model) were conducted using standardized methods in a recognized software package, ensuring replicability. Additionally, data security protocols ensured that the dataset remained intact and unaltered throughout the study. Using the statistical package R also supports reliability because it allows for reproducible analysis. Collectively, these measures ensured that findings are both trustworthy and reproducible, providing a rigorous foundation for answering the research questions.

### ***Statistical Conclusion Validity***

To strengthen statistical conclusion validity, the study used a large dataset to increase statistical power and reduce sampling error. Also, statistical information was reported including coefficients odds ratios, standard errors, t-values, p-values, and 95% confidence intervals to allow for accurate interpretation and precision of estimates.

## **Ethical Considerations**

This study was conducted in accordance with established ethical standards for research involving human subjects. Prior to data collection, approval was obtained from the Valdosta State University Institutional Review Board (IRB). The study was reviewed under the category of secondary data analysis, as all information was provided in de-identified form by the University System of Georgia (USG).

To ensure confidentiality, no personal identifiable information (PII) was included in the dataset. Each student was assigned a randomly generated identification number by the University System of Georgia Research and Policy Analysis office, which allows for tracking across academic terms without revealing individual identities. Data security was maintained through encrypted transfer and storage protocols. The dataset was delivered via MOVEit, USG's secure file transfer platform, and stored on password-protected, institutionally approved systems and secure networks. Access was restricted to the researcher and advisor, and no files were shared with unauthorized individuals. Results are reported in aggregate form only, ensuring that no individual student can be identified through tables, figures, or narratives. By following these procedures, the study ensures compliance with IRB requirements, protects student confidentiality, and upholds the highest standards of research integrity.

## **Chapter Summary**

This chapter presented the methodological framework guiding the study by outlining the research design, data sources, key variables, and analytical procedures used to examine the academic outcomes of HOPE recipient students attending regional comprehensive universities in the University System of Georgia between 2013 and 2019

across geographical and scholarship trajectory contexts. Through the integration of descriptive, spatial, and inferential approaches, the methodology established a rigorous foundation for addressing the research questions and evaluating the study's hypotheses within the Geography of Opportunity framework.

The next chapter turns to the results of the analyses. It begins with descriptive statistics that provide an overview of the sample and highlight differences across HOPE Scholarship trajectory groups and rural and urban classifications. Descriptive findings are then supplemented with spatial heat maps and followed by inferential results from regression analyses, which examine how HOPE Scholarship eligibility and geographic origin predict student academic outcomes. Together, these results provide the empirical evidence necessary to answer each of the research questions.

## **Chapter IV**

### **Results**

#### **Introduction**

The purpose of this chapter is to present findings from the analyses conducted to examine the academic outcomes of students at Georgia's regional comprehensive universities, with specific attention to differences between Hope Scholarship recipients from rural and urban origins. Utilizing the methodology described in Chapter III, this chapter reports descriptive, spatial, and inferential results derived from the student-level dataset provided by the University System of Georgia.

The results are organized in sections to directly address the following research questions guiding this study:

- RQ1: Is there a difference in academic performance between Hope Scholarship recipients from rural areas and those from urban areas attending regional comprehensive institutions in Georgia?
- H1: Hope Scholarship recipients from rural areas attending regional comprehensive institutions in Georgia are expected to have lower academic performance, as measured by cumulative GPA and credit hours earned, compared to their urban counterparts.

- RQ2: Is there a difference in patterns of Hope Scholarship receipt over time between recipients from rural areas and those from urban areas attending regional comprehensive universities in Georgia?
- H2: Rural students attending regional comprehensive universities in Georgia are expected to exhibit lower continuity of HOPE receipt across terms compared to their urban counterparts.
- RQ3: Is there a difference in bachelor's degree completion between HOPE Scholarship recipients from rural areas and those from urban areas attending regional comprehensive institutions in Georgia?
- H3: HOPE Scholarship recipients from rural areas attending regional comprehensive institutions in Georgia are expected to have lower rates of bachelor's degree completion compared to their urban counterparts.

First, descriptive analyses provide an overview of student characteristics and academic outcomes across HOPE trajectory status and geographic origin. County-level heat maps are then included to visualize spatial variation in HOPE trajectory status and academic outcomes. Finally, regression models examine the relationships between HOPE status, rural versus urban origin, and student outcomes while controlling for relevant demographic and academic variables.

### **Characteristics of the Full Data Set**

Table 1 summarizes the distribution of all first-time, full-time freshmen from USG regional comprehensive institutions between 2013 and 2019 provided in the full dataset. Of this sample, 31.6% were from Georgia Southern University, 35.9% from

Kennesaw State University, 20% from the University of West Georgia and 12.5% from Valdosta State University.

**Table 1**

*Distribution of Students by Institution*

	Frequency	%
Georgia Southern University	17,137	31.6
Kennesaw State University	19,440	35.9
University of West Georgia	10,825	20.0
Valdosta state University	6,750	12.5
Total	54,152	100.0

Table 2 summarizes the gender distribution of students from the USG comprehensive institutions during the study period. Approximately 53.9% of students were female, while 46.1% were male.

**Table 2**

*Distribution of Students by Gender*

	Frequency	%
Female	29,183	53.9
Male	24,969	46.4
Total	54,152	100.0

Table 3 presents the racial and ethnic composition of students. In the full dataset, approximately 58.3% of students were White. For analytical purposes, all other racial and ethnic groups, including Black or African American, Hispanic of Latino, and Asian, were classified into a single Other category, which collectively represented the other 41.7 % of students.

**Table 3***Distribution of Students by Race/Ethnicity*

	Frequency	%
White	31,570	58.3
Other	22,582	41.7
Total	54,152	100.0

Table 4 displays the distribution of students by geographic origin, categorized as rural or urban based on 2010 U.S. Census Bureau classifications described in Chapter III. The breakdown illustrates the proportion of all first time, full-time freshman students originating from rural areas compared to those from urban areas across the USG comprehensive institutions during the study period. Rural students constituted 13.8% of the dataset, while urban students comprised 86.2%. Analyses were also conducted on a balanced subsample of rural and urban students to ensure comparability. The results of these analyses mirrored those of the full dataset; therefore, the full dataset was utilized.

**Table 4***Distribution of Students by Origin*

	Frequency	%
Rural	7,465	13.8
Urban	46,687	86.2
Total	54,152	100.0

Students were assigned one of six HOPE trajectory categories based on their HOPE Scholarship eligibility patterns across enrollment terms. Table 5 defines each trajectory category and the type of student represented. These categories capture whether students entered college with HOPE, maintained the scholarship, lost and regained the scholarship, or never qualified for the scholarship

**Table 5**

*Description of Student HOPE Trajectory Classifications*

HOPE Trajectory Category	Description
Fully HOPE	Student who received HOPE upon enrollment and retained it through graduation.
HOPE Loser	Student who initially received HOPE but lost eligibility and did not regain it.
HOPE Regainer	Student who lost HOPE eligibility but regained it.
HOPE Winner	Student who entered without HOPE but earned it later.
HOPEless	Student who never received HOPE at any point.
Roller Coaster	Student who gained and lost HOPE multiple times across semesters.

Table 6 presents the distribution of students across these HOPE Scholarship trajectory categories. The categories reflect scholarship status over time, capturing patterns of retention, loss, and recovery of the scholarship. The table shows how students were distributed among the identified trajectories within the full dataset. Students who matriculated with the HOPE Scholarship made up 35.8% in the Fully HOPE category, 26.1% in the HOPE Loser category, and 5% in the HOPE Regainer category. Students who gained the scholarship after matriculating made up 3.6% of the data set and students who did not matriculate with the scholarship in the HOPEless category comprised 26.9% of the full data set. Finally, students who gained and lost the scholarship throughout their enrollment made up the Rollercoaster category at 2.7% of the data set.

**Table 6**

*Distribution of Students by HOPE Trajectory*

	Frequency	%
Fully HOPE	19,376	35.8
HOPE Loser	14,129	26.1
HOPE Regainer	2,703	5.0
HOPE Winner	1,960	3.6
HOPEless	14,548	26.9
Rollercoaster	1,436	2.7
Total	54,152	100.0

Table 7 provides a cross-tabulation of students by origin and HOPE trajectory categories. Among rural students, 42.2% retained the scholarship continuously throughout their enrollment, 32.5% lost eligibility, and 5.7% regained it. Among urban students, 34.8% retained the scholarship, 25.1% lost it, and 4.9% regained it. A smaller proportion of rural students entered college without the scholarship (16.7%) than their urban counterparts (28.5%), indicating a greater share of rural students began college with HOPE eligibility. Within the respective groups, a larger percentage of rural students overall retained and lost the scholarship in comparison to these same categories within the urban group.

**Table 7**

*Distribution of Students by Origin X HOPE Trajectory*

	Rural (n = 7,465)	Urban (n = 46,687)
Fully HOPE	42.2% (3,148)	34.8% (16,228)
HOPE Loser	32.5% (2,425)	25.1% (11,704)
HOPE Regainer	5.7% (428)	4.9% (2,275)
HOPE Winner	1.7% (130)	3.9% (1,830)
HOPEless	16.7% (1,245)	28.5% (13,303)
Rollercoaster	1.2% (89)	2.9% (1,347)
Total	100.0%	100.0

## **Characteristics of the Studied Subset of HOPE Starters**

The analysis for this research focused on a subset of students, named HOPE Starters, who initially enrolled with the HOPE Scholarship, including students in the three defined HOPE trajectory categories: Fully HOPE, HOPE Loser, and HOPE Regainer. These groups were intentionally selected as a consistent point of comparison and applicable to answer the research questions and provide a more equitable basis for comparison, with both rural and urban groups starting with the same scholarship eligibility status.

Students classified in the HOPEless, HOPE Winners, and Rollercoaster groups were excluded from this analysis because they did not begin enrollment as a HOPE Scholarship recipient. The goal of the research questions was to examine whether academic performance and outcomes are different between rural and urban HOPE Scholarship recipients. Including HOPEless students who never qualified for the scholarship, HOPE Winners who gained the scholarship later and Rollercoaster students who experienced multiple gains and losses throughout enrollment would introduce confounding factors related to initial academic preparation and scholarship eligibility timing.

Tables 8 – 10 summarize the demographic and categorical composition of the analytic subset, referenced as HOPE Starters. As shown in Table 8, the sample was mostly female (59.1%), while males comprised 40.9% of the distribution. Table 9 indicates that white students represented 63.4% of this group, compared to 36.6% identifying as other racial or ethnic backgrounds. Table 10 displays the cross-tabulation of HOPE Starters trajectories by geographic origin, revealing that rural and urban

students followed similar scholarship patterns. Approximately half of both groups remained continuously eligible for HOPE (52.5% rural, 53.7% urban), while roughly 40% lost eligibility at some point, and about 7% regained it. Collectively, these distributions show that among students who began with HOPE, rural and urban differences in scholarship persistence were minimal.

**Table 8**

*Distribution of Students by Gender (HOPE Starters)*

	Frequency	%
Female	21,394	59.1
Male	14,814	40.9
Total	36,208	100.0

**Table 9**

*Distribution of Students by Ethnicity (HOPE Starters)*

	Frequency	%
White	22,963	63.4
Other	13,245	36.6
Total	36,208	100.0

**Table 10**

*Distribution of Students by Origin X HOPE Trajectory (HOPE Starters)*

	Rural (n = 6,001)	Urban (n = 30,207)
Fully HOPE	52.5% (3,148)	53.7% (16,228)
HOPE Loser	40.4% (2,425)	38.7% (11,704)
HOPE Regainer	7.1% (428)	7.5% (2,275)
Total	100.0%	100.0

### **Results for Research Question 1: Academic Performance**

The following section presents the results addressing Research Question 1, including descriptive, spatial, and inferential analyses of the academic performance outcomes of cumulative university GPA and cumulative credit hours between rural and urban students enrolled at USG comprehensive institutions between 2013 and 2019. The

primary analyses focus on students who began with HOPE eligibility, classified as HOPE Starters (Fully HOPE, HOPE Loser, and HOPE Regainer) to directly examine differences among initial scholarship recipients. Supplemental analyses using the full dataset are also included as a sensitivity test to assess whether similar patterns persist across the broader student population.

### ***Descriptive Statistics for Academic Performance***

To address the first research question, descriptive statistics were first examined to summarize academic characteristics of HOPE Scholarship recipients across rural and urban origins and by HOPE Scholarship trajectory categories. The tables that follow display the mean, medians, and standard deviations for cumulative university GPA and cumulative credit hours earned to provide a general overview of academic performance patterns before reporting regression analyses results.

Table 11 provides a combined summary of academic performance measures for the subset of Fully HOPE, HOPE Losers and HOPE Regainers by origin, including mean and standard deviation for the cumulative university GPA and cumulative credit hours earned. Overall, differences by geographic origin were minimal, but patterns emerged across the HOPE trajectory categories. As expected, Fully HOPE students retained the scholarship continuously and earned the highest GPAs (M = 3.55 rural; 3.56 urban), showing almost the same averages and low variability (SD = 0.27 in both groups). HOPE Regainers who lost and regained eligibility also achieved strong GPAs (M = 3.31 rural; M = 3.31 urban), again showing no difference by origin. In contrast, HOPE Losers who lost and never regained the scholarship had lower GPAs (M = 2.46 rural; M = 2.58 urban), showing a slight difference by origin.

Cumulative credit hour patterns were similar, revealing clear differences across HOPE Scholarship trajectory categories and only slight differences between rural and urban students as shown in Table 12. HOPE Regainers earned the greatest number of credit hours in both rural (M = 111.4, SD = 22.6) and urban (M = 114.5, SD = 21.5) settings, indicating students who temporarily lost the HOPE Scholarship but later regained it persisted with greater credit hours. Fully HOPE students earned a substantial number of credits in both rural (M = 92.3, SD = 39.7) and urban (M = 92.9, SD = 39.2) settings, while HOPE Losers earned the fewest, particularly in rural areas (M = 84.0, SD = 42.1) compared to urban students (M = 89.2, 41.2). This suggests that maintaining the HOPE Scholarship is associated with stronger academic momentum, whereas losing the HOPE Scholarship may lead to slowed progress or withdrawal and represent a particularly vulnerable group in terms of degree progress.

**Table 11**

*Cumulative GPA Descriptives by HOPE Trajectory and Origin*

	Rural (n, M, SD)	Urban (n, M, SD)
Fully HOPE	3,148, 3.55, 0.27	16,228, 3.56, 0.27
HOPE Loser	2,425, 2.46, 0.61	11,704, 2.58, 0.57
HOPE Regainer	428, 3.31, 0.26	2,275, 3.31, 0.24

**Table 12**

*Cumulative Credit Hours Earned Descriptive by HOPE Trajectory and Origin*

	Rural (n, M, SD)	Urban (n, M, SD)
Fully HOPE	3,148, 92.3, 39.7	16,228, 92.9, 39.2
HOPE Loser	2,425, 84.0, 42.1	11,704, 89.2, 41.2
HOPE Regainer	428, 111.4, 22.6	2,275, 114.5, 21.5

Tables 13-16 further disaggregate these results by gender and ethnicity to examine within-group differences. As shown in Table 13, Fully HOPE students demonstrated the highest mean cumulative GPAs, which averaged above 3.50 for all groups, with minimal differences between rural and urban origins or gender. HOPE Losers had the lowest GPAs, with rural students trailing their urban counterparts by only approximately one-tenth of a grade point. HOPE Regainers had nearly identical mean GPAs across origin and gender, all reflecting academic recovery following scholarship loss with GPAs close to 3.0. Across all categories, females consistently outperformed males. Overall, these patterns demonstrate slight gender differences and notable geographic disparities among students who lose HOPE eligibility

**Table 13**

*Cumulative GPA Descriptives by HOPE Trajectory, Origin, and Gender*

	Gender	Rural (n, M, SD)	Urban (n, M, SD)
Fully HOPE	Female	2,095, 3.56, 0.27	10,399, 3.57, 0.27
	Male	1,053, 3.53, 0.28	5,829, 3.54, 0.27
HOPE Loser	Female	1,231, 2.51, 0.61	5,978, 2.62, 0.56
	Male	1,194, 2.42, 0.62	5,726, 2.54, 0.58
HOPE Regainer	Female	283, 3.32, 0.27	1,408, 3.32, 0.24
	Male	145, 3.27, 0.23	867, 3.30, 0.25

As shown in Table 14, mean cumulative GPAs were consistently highest among Fully HOPE students regardless of ethnicity or geographic origin, with averages all above 3.50. These minimal differences indicate that among those who maintained the scholarship, academic performance was strong across both racial/ethnic groups and settings. In contrast, HOPE Losers displayed the lowest mean GPAs, with rural students in the Other ethnic group earning the lowest average GPA at 2.39 and White rural students slightly higher at 2.50. Urban students in both ethnic groups performed better in

this category. HOPE Regainers showed GPAs around 3.30 with little variation between ethnic groups or origin. Overall, these trends show that while ethnicity and geography had limited influence among students who performed well and maintained the scholarship, performance gaps occur primarily among those who lose HOPE, with rural and non-White students experiencing greater academic decline.

**Table 14**

*Cumulative GPA Descriptives by HOPE Trajectory, Origin, and Ethnicity*

	Ethnicity	Rural (n, M, SD)	Urban (n, M, SD)
Fully HOPE	Other	665, 3.52, 0.27	5,382, 3.54, 0.27
	White	2,483, 3.56, 0.27	10,846, 3.57, 0.27
HOPE Loser	Other	786, 2.39, 0.62	5,445, 2.55, 0.55
	White	1,639, 2.50, 0.61	6,259, 2.61, 0.58
HOPE Regainer	Other	101, 3.27, 0.26	866, 3.28, 0.22
	White	327, 3.32, 0.26	1,409, 3.33, 0.25

Table 15 presents mean cumulative credit hours earned by HOPE trajectory category, origin, and gender. Like GPA results, Fully HOPE students earned the most credit hours overall, averaging between 89 and 95 hours across all groups. Female students consistently earned slightly more credit hours than males, and urban females earned the highest mean at 95.2 credit hours. HOPE Losers earned the fewest credit hours on average, particularly rural males (83.5), validating scholarship loss coincides with slowed or discontinued academic progress. In contrast, HOPE Regainers had the highest credit hour totals ranging from 111 to 115, showing regaining scholarship eligibility impacts academic momentum. Overall, these results show that students who retain or regain HOPE complete more coursework than those who lose the scholarship, with only slight gender and origin differences.

**Table 15***Cumulative Credit Hours Descriptives by HOPE Trajectory, Origin, and Gender*

	Gender	Rural (n, M, SD)	Urban (n, M, SD)
Fully HOPE	Female	2,095, 93.6, 39.7	10,399, 95.2, 38.7
	Male	1,053, 89.6, 39.7	5,829, 88.9, 39.8
HOPE Loser	Female	1,231, 84.4, 41.5	5,978, 89.8, 40.5
	Male	1,194, 83.5, 42.7	5,726, 88.7, 41.9
HOPE Regainer	Female	283, 111.0, 23.6	1,408, 115.0, 20.9
	Male	145, 112.0, 20.7	867, 114.0, 22.4

Table 16 shows cumulative credit hours by HOPE trajectory category, geographic origin, and ethnicity. Fully HOPE students earned an average of 91 to 95 credit hours for most groups, with minimal differences between rural and urban students. Within this group, students in the Other ethnic group average slightly higher totals than White students, particularly in rural areas (95.7, rural; 91.3, urban). HOPE Losers earned the fewest credit hours, with rural students slightly behind their urban peers, averaging 83 to 85 hours for White and Other students in rural settings compared to 87 to 92 in urban settings. Again, HOPE Regainers earned the most credit hours, ranging from 111 to 115 hours, reflecting academic momentum in this group. Across all groups, ethnic differences were modest, but a consistent pattern is demonstrated with urban students who maintained or regained the scholarship accumulating the most credit hours.

**Table 16***Cumulative Credit Hours Descriptives by HOPE Trajectory, Origin, and Ethnicity*

	Ethnicity	Rural (n, M, SD)	Urban (n, M, SD)
Fully HOPE	Other	665, 95.7, 37.7	5,382, 95.4, 37.7
	White	2,483, 91.3, 40.2	10,846, 91.7, 39.8
HOPE Loser	Other	786, 85.1, 42.5	5,445, 91.5, 40.5
	White	1,639, 83.5, 41.9	6,259, 87.2, 41.6
HOPE Regainer	Other	101, 112.0, 21.6	866, 115.0, 20.7
	White	327, 111.0, 23.0	1,409, 114.0, 22.0

### ***Spatial Analyses of Academic Performance***

To further examine how academic performance patterns differ across geographic context, spatial analyses were conducted. Utilizing heat maps, the geographic distribution of HOPE Scholarship recipients was visualized to identify potential disparities between rural and urban students. This section presents these spatial patterns, highlighting regional differences in HOPE Scholarship academic performance outcomes for the starter groups including Fully HOPE, HOPE Losers, and HOPE Regainers.

The following maps shown in Figures 1 – 4 visualize the distribution of the key academic performance indicators, including mean high school GPA, mean cumulative university GPA, and mean cumulative credit hours earned by students' county of origin. Figure 1 provides a baseline rural-urban classification map following the 2010 U.S. Census Bureau classifications described in Chapter III to give contextual foundation for interpreting spatial variation in HOPE Scholarship outcomes across the state. The map shows that urban areas are concentrated around Atlanta, Macon, Augusta, Columbus, and Savannah. Most of the Georgia's land area located in the southern, southwestern, and east-central portions of the state, are classified as rural.

#### ***Figure 1.***

*Georgia Counties by Rural/Urban Designation.*

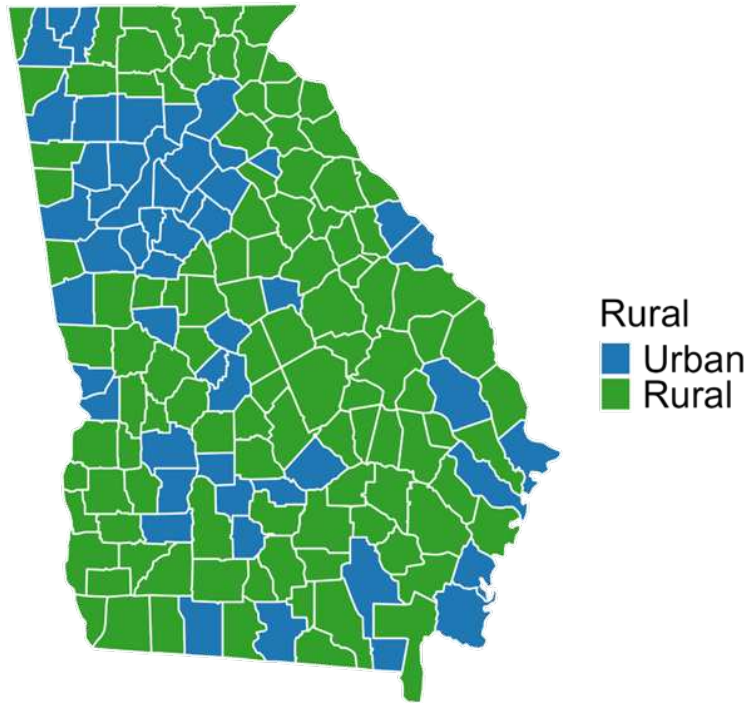


Figure 2 illustrates the county-level distribution of average high school GPAs among HOPE Scholarship starter recipient groups. Higher mean GPAs are concentrated in rural counties. In contrast, several urban counties display lighter shading, indicating lower mean GPAs. This pattern suggests that HOPE Recipients from rural counties in Georgia generally entered college with stronger academic preparation.

***Figure 2.***

*Mean High School GPA by County.*

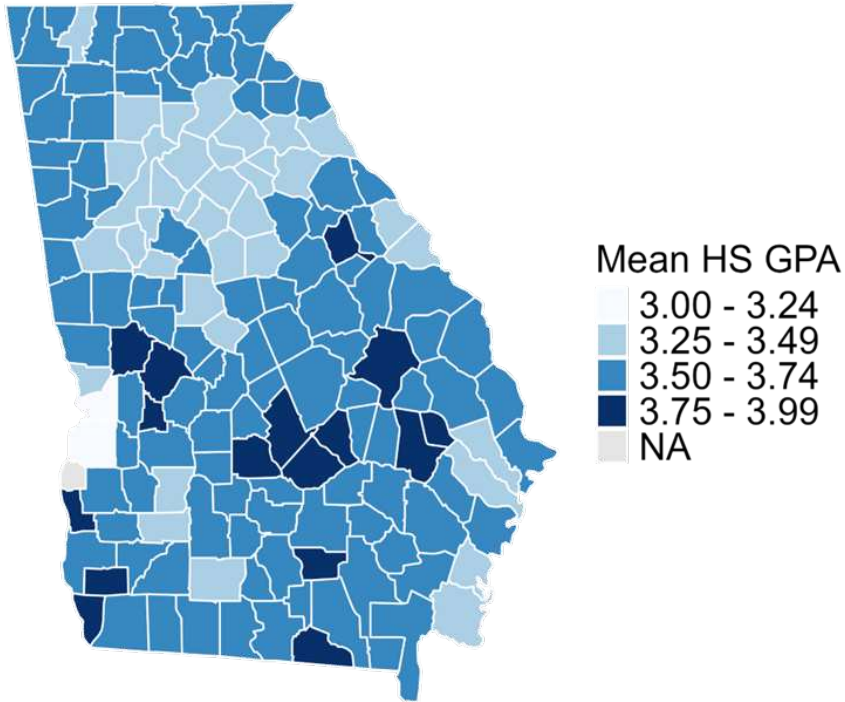


Figure 3 presents the distribution of cumulative university GPA by county. When comparing Figure 2 to Figure 3, the spatial pattern reveals changes for HOPE Starters compared to the high school GPA by county, most notably higher cumulative university GPAs in urban areas around Atlanta compared to lower high school GPAs in these areas. Although mean cumulative GPAs in some rural areas dropped, most rural areas mirrored urban areas regarding GPA increases in college.

***Figure 3.***

*Mean Cumulative University GPA by County.*

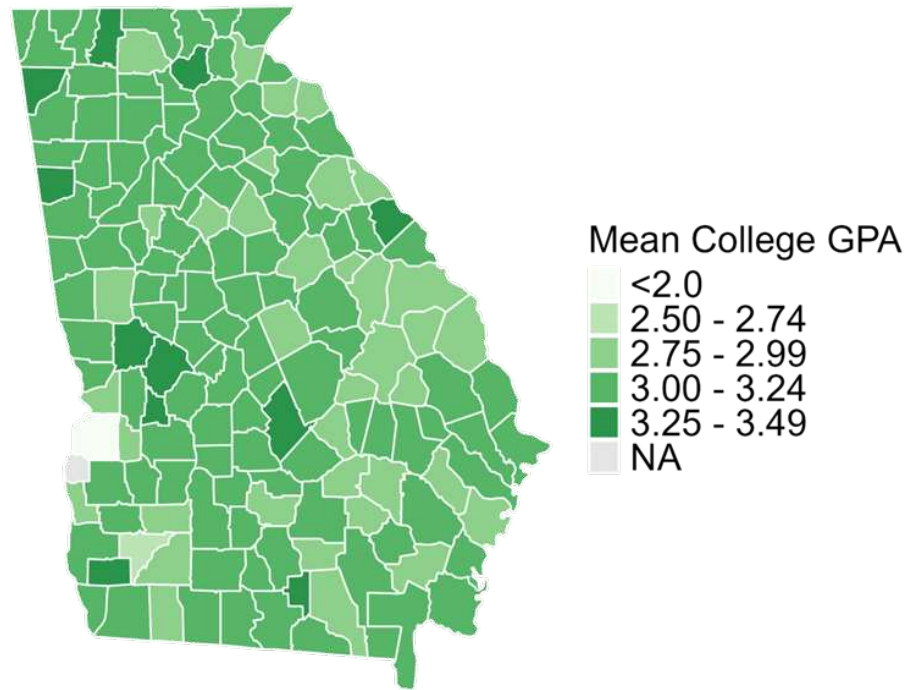
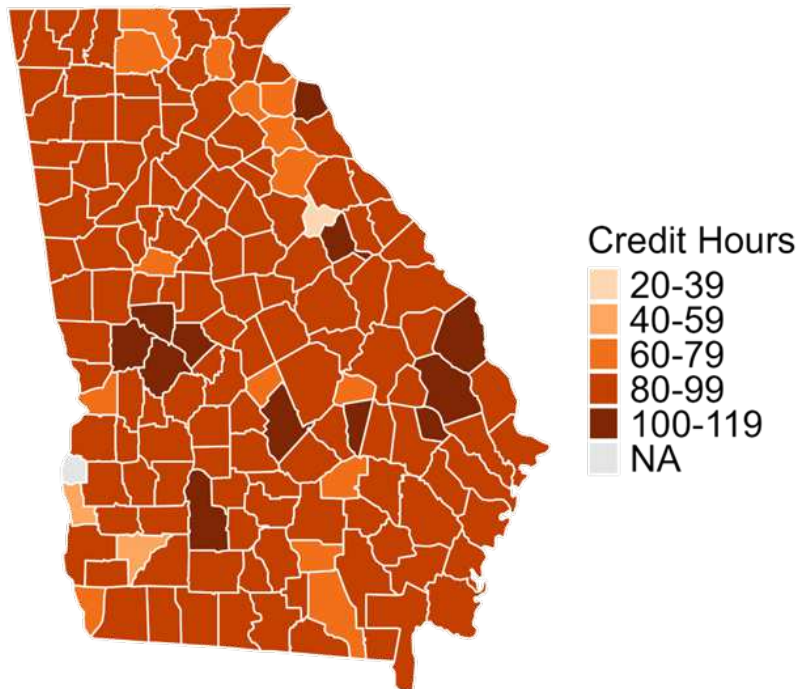


Figure 4 displays the spatial distribution of cumulative credit hours earned. Like GPA measures, urban counties generally reflect higher mean credit accumulation, though the variation is more diffuse than in the GPA maps. Certain rural counties in the northeast and coastal regions also show darker shading, indicating higher credit hour attainment. This suggests that while urban students tend to perform slightly better overall, credit completion patterns are not entirely uniform and may reflect differences in retention support and transfer pathways.

***Figure 4.***

*Mean Cumulative Credit Hours by County.*



Rural and urban counties were closely matched in performance across the state.

The counties with the highest means were rural, with three rural counties (Talbot, Taylor, and Dodge), showing consistent high academic performance for high school GPA, cumulative GPA, and cumulative credit hours earned for the HOPE Starter groups.

These descriptive and spatial findings establish a foundation for examining whether the observations of rural and urban HOPE Starters' academic performance remain statistically significant when controlling for other factors. The following section presents the results of the regression analysis addressing the first research question.

***Inferential Analysis of Academic Performance***

Linear regression models were estimated using the two outcome variables cumulative university GPA and cumulative credit hours earned for the HOPE Scholarship trajectory groups indicating students starting with the HOPE Scholarship, including Fully

HOPE, HOPE Losers, and HOPE Regainers, to explore whether predictors of performance differed by scholarship pathway. Predictor variables included origin or rural versus urban, high school GPA, gender, ethnicity, and Pell Grant receipt.

**Cumulative University GPA.** The overall GPA regression model was statistically significant,  $R^2 = 0.172$ , indicating that approximately 17% of the variance in cumulative GPA was explained by the predictors. As shown in Table 17, rural origin was negatively associated with GPA ( $\beta = -0.192$ ),  $p < .001$ ), suggesting that rural students on average, earned GPAs 0.19 points lower than their urban counterparts when holding other variables constant. High school GPA was the strongest positive predictor ( $\beta = 0.750$ ,  $p < .001$ ), underscoring the continued influence of pre-college academic preparation. Male students and those from the Other ethnic group also earned lower GPAs ( $\beta = -0.138$  and  $\beta = -0.130$ , respectively; both  $p < .001$ ). Pell recipients had slightly lower GPAs ( $\beta = -0.003$ ,  $p < .001$ ).

**Table 17**

*Linear Regression – Cumulative GPA (HOPE Starters)*

	$\beta$	SE	t	p
Intercept	0.686	0.035	19.506	< 0.001
Origin (Rural)	-0.192	0.008	-23.102	< 0.001
High School GPA	0.750	0.010	75.664	< 0.001
Gender (Male)	-0.138	0.006	-22.145	< 0.001
Ethnicity (Other)	-0.130	0.007	-19.637	< 0.001
Pell (True)	-0.033	0.007	-4.916	< 0.001

$R^2 = 0.172$ ; Adj.  $R^2 = 0.172$

**Cumulative Credit Hours Earned.** The credit hour model shown in Table 18 yields virtually no explanatory power ( $R^2 = 0.010$ ). Although statistically significant, the predicted difference of rural students completing 3.53 fewer credit hours than urban

students, equivalent to about one course, is small and unlikely to be consequential alone. High school GPA remained a strong positive predictor ( $\beta = 8.94$ ,  $p < .001$ ), suggesting students who entered college with higher GPAs tended to make better academic progress. Male and Pell recipients completed fewer credits, while students from the Other ethnic groups completed more credit hours on average. Although rural students showed slightly lower outcomes, the differences were minimal and not practically meaningful in a higher education context.

**Table 18**

*Linear Regression – Cumulative Credit Hours (HOPE Starters)*

	B	SE	t	p
Intercept	62.936	2.408	26.136	< 0.001
Origin (Rural)	-3.533	0.570	-6.200	< 0.001
High School GPA	8.943	0.678	13.183	< 0.001
Gender (Male)	-3.713	0.426	-8.705	< 0.001
Ethnicity (Other)	3.877	0.454	8.533	< 0.001
Pell (True)	-2.312	0.466	-4.957	< 0.001

$R^2 = 0.010$ ; Adj.  $R^2 = 0.010$

### **Sensitivity Analysis – Full Dataset**

To assess the robustness of the findings on the HOPE Starters group and to further examine factors associated with student performance, regression models were estimated separately for each HOPE Scholarship trajectory category including the full dataset, which included all six HOPE trajectory categories (Fully HOPE, HOPE Loser, HOPE Regainer, HOPE Winner, HOPEless, and Rollercoaster). This broader sample incorporated students who never received HOPE, providing a comprehensive view of academic outcomes across the full population of first-time, full-time freshman during the study period.

### ***Cumulative GPA***

Table 19 presents results of linear regression predicting cumulative university GPA for all six HOPE trajectory categories. The model explained approximately 58.5 % of the variance of GPA, indicating a strong overall fit. High school GPA was the strongest positive predictor ( $\beta = 0.356$ ,  $p < .001$ ), confirming that stronger academic preparation in high school is strongly associated with better college performance. Among the HOPE Scholarship trajectory categories, Fully HOPE served as the reference group, with other groups having lower GPAs, as expected by eligibility requirements. The HOPEless and HOPE Loser categories showed the largest deficits ( $\beta = -1.221$  and  $-0.898$ , both  $p < .001$ ), while HOPE Regainers and HOPE Winners performed closer to the baseline, though still below. As expected, the Roller Coaster pattern ( $\beta = -0.261$ ,  $P < .001$ ) also indicated reduced academic stability.

Demographic controls revealed modest but consistent effects with rural students having only slightly lower GPAs than urban peers ( $\beta = -0.122$ ,  $p < .001$ ). Male students underperformed compared to females ( $\beta = -.083$ ,  $p < .001$ ) and students identifying with Other ethnicities showed a small negative difference compared to White ( $\beta = -.050$ ,  $p < .001$ ). Students eligible for Pell also earned slightly lower GPAs ( $\beta = -0.053$ ,  $p < .001$ ). Overall, the model shows that both academic and socioeconomic factors, and HOPE Scholarship trajectory patterns, are predictive of college performance but show no meaningful differences between rural and urban origin.

### **Table 19**

*Linear Regression – Cumulative GPA – All HOPE Trajectories*

	$\beta$	SE	t	p
Intercept	2.366	0.030	79.620	< 0.001
HOPE Loser	-0.898	0.006	-140.814	< 0.001
HOPE Regainer	-0.185	0.011	-16.294	< 0.001
HOPE Winner	0.042	0.014	2.973	0.003
HOPEless	-1.221	0.009	-135.470	< 0.001
Rollercoaster	-0.261	0.016	-16.256	< 0.001
Rural	-0.122	0.007	-17.406	< 0.001
High School GPA	0.356	0.008	43.561	< 0.001
Gender (Male)	-0.083	0.005	-17.023	< 0.001
Ethnicity (Other)	-0.050	0.005	-9.674	< 0.001
Pell (True)	-0.053	0.005	-10.130	< 0.001

$R^2 = 0.585$ ; Adj.  $R^2 = 0.585$

### ***Cumulative Credit Hours Earned***

Table 20 summarizes the regression predicting credit hours earned. The model explained about 18.5 % of the variance in cumulative credit hours, a moderate relationship in student progress patterns. Compared to the Fully HOPE baseline, the HOPE Regainer, HOPE Winner, and Rollercoaster categories were associated with higher credit hour accumulation ( $\beta = 22.502, 14.027, \text{ and } 35.214$ ), respectively. In contrast, the HOPE Loser and HOPEless categories showed negative effects ( $\beta = -2.514 \text{ and } -31.785, p < .001$ ). These findings highlight the advantage of students who maintain or regain scholarship eligibility relative to those who lose it permanently or never receive it.

Rural students earned slightly fewer credits than urban peers ( $\beta = -3.964, p < .001$ ). Higher high school GPA again predicted greater college productivity ( $B = 7.857, p < .001$ ). Male students earned fewer credits ( $\beta = -3.539, p < .001$ ), while students identifying with the Other ethnicities completing slightly more ( $\beta = 3.775, p < .001$ ). Pell recipients earned fewer total credit hours ( $\beta = -4.037, p < .001$ ).

### **Table 20**

*Linear Regression – Cumulative Credit Hours – All HOPE Trajectories*

	$\beta$	SE	t	p
Intercept	66.605	2.212	30.115	< 0.001
HOPE Loser	-2.514	0.475	-5.296	< 0.001
HOPE Regainer	22.502	0.843	26.692	< 0.001
HOPE Winner	14.027	1.050	13.359	< 0.001
HOPEless	-31.785	0.671	-47.399	< 0.001
Rollercoaster	35.214	1.196	29.455	< 0.001
Rural	-3.964	0.522	-7.595	< 0.001
High School GPA	7.857	0.608	12.930	< 0.001
Gender (Male)	-3.539	0.361	-9.795	< 0.001
Ethnicity (Other)	3.775	0.381	9.909	< 0.001
Pell (True)	-4.037	0.389	-10.366	< 0.001

$R^2 = 0.185$ ; Adj.  $R^2 = 0.185$

The regression results for the full dataset for cumulative university GPA and cumulative credit hours earned mirrored the direction and significance of those found in the subset analysis. Rural status remained a statistically significant negative predictor of GPA and credit hours, but effect sizes were similarly modest, still indicating limited practical impact. High school GPA continued to be the strongest positive predictor of both outcomes, and patterns by gender, ethnicity, and Pell status were consistent with the subset results.

These sensitivity analyses confirmed that the observed rural and urban performance differences are not unique to the subset of HOPE starters but persist, although weak, across the broader student population.

## **Results for Research Question 2: HOPE Trajectories**

### ***Descriptive Analysis of HOPE Trajectories***

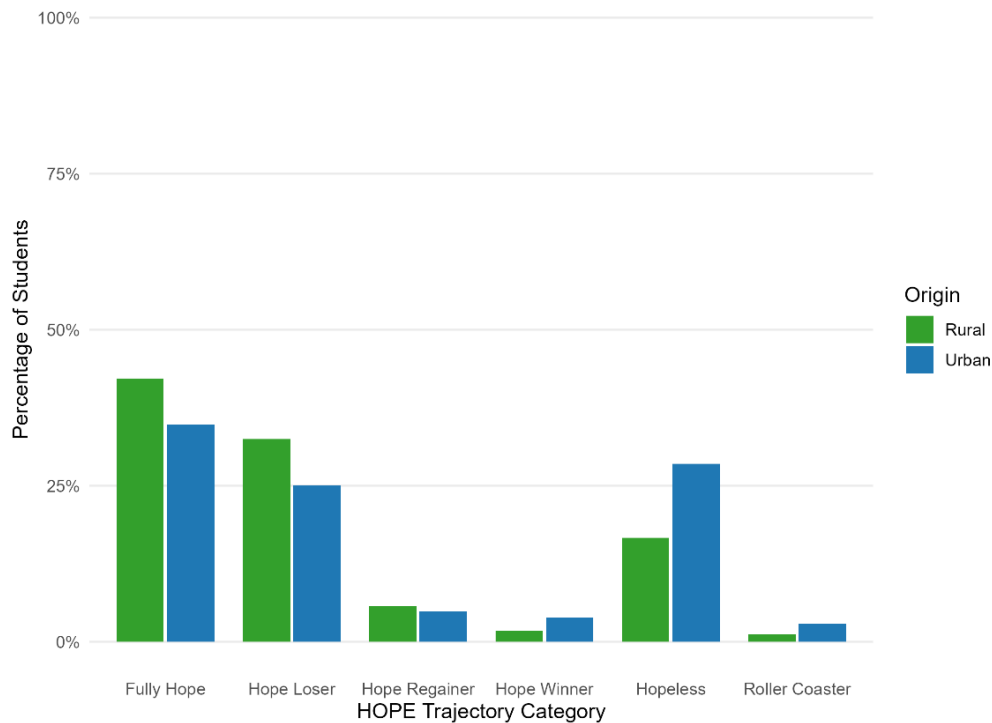
Figure 5 illustrates the distribution of HOPE Scholarship trajectory categories by geographic origin for the full dataset. Overall, the largest proportions of students in both rural and urban groups fell into the Fully HOPE and HOPE Loser categories, indicating that most students begin college with the scholarship and either maintained or lost it

during their enrollment period. Rural students were more likely to appear in both categories, with a higher proportion of the rural population losing the scholarship compared to the urban students who lost the scholarship.

In contrast, urban students were notably represented in the HOPEless category, reflecting a larger share of those who never qualified for the HOPE Scholarship. Urban students also had slightly higher representation among HOPE Winners, implying more mobility in scholarship acquisition and recovery over time compared to rural students. However, rural students are slightly more represented among HOPE Regainers. The Rollercoaster pattern was rare in both groups, accounting for less than 2% of students overall. These patterns suggest that while rural students are more likely to begin with the HOPE Scholarship, urban students demonstrate greater fluidity with both losing and regaining the scholarship. These patterns suggest that while rural students are more likely to begin with the HOPE Scholarship, they are also more likely to lose the scholarship than urban students. This distribution highlights a difference in the starting points and trajectories of HOPE Scholarship participation between rural and urban populations, which the subsequent regression analysis will further examine.

***Figure 5.***

*Distribution of HOPE Scholarship Trajectory Categories by Geographic Origin.*



### *Spatial Analysis of HOPE Trajectories*

Figure 6 illustrates the dominant HOPE Scholarship trajectory categories in each Georgia county among all students in the full dataset. Counties are color-coded according to the most common eligibility category. Fully HOPE shaded in green is the dominant trajectory across most of the state. The trend is widespread across both urban and rural regions, suggesting that HOPE Scholarship retention is the most common trajectory statewide.

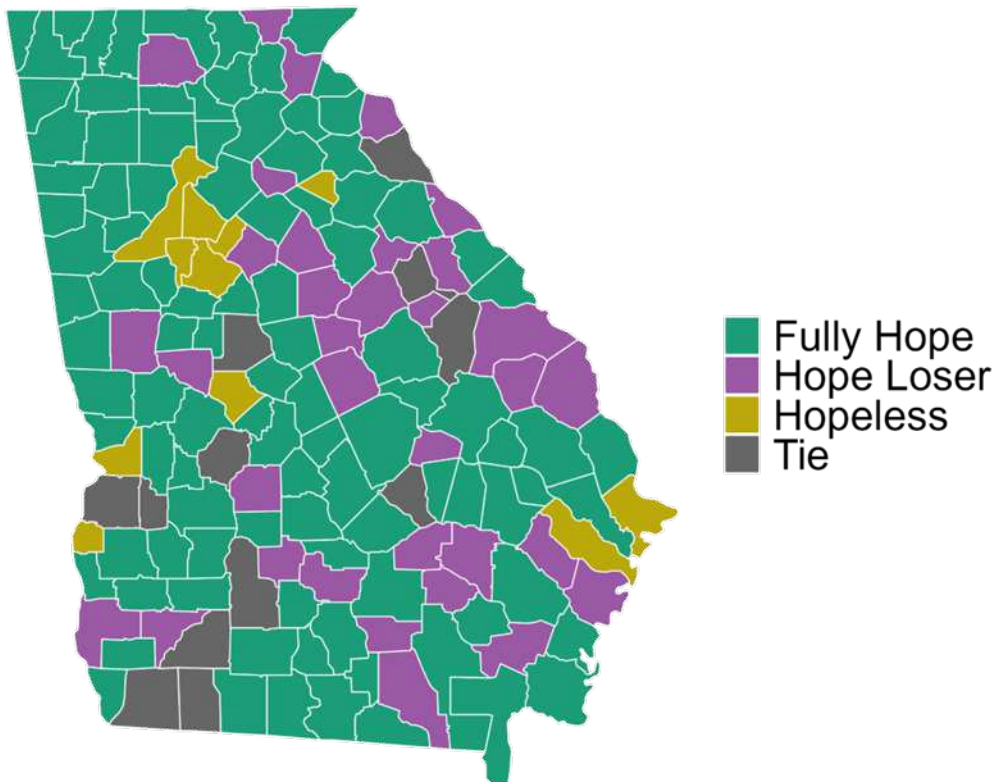
The HOPE Loser category, indicated by purple, clusters in certain regions with pockets across central and South Georgia and some in the north, many of which are rural counties. HOPEless counties are noted mainly in metropolitan or coastal regions, which indicates lower high school GPAs upon college entrance given the HOPE Scholarship

eligibility requirement of a 3.0 GPA. This finding challenges the assumption that rural students are more academically challenged than urban students.

Conversely, because the HOPE Loser trajectory appears more frequently in rural counties, one possible contributing factor may be grade inflation in rural high schools, which could overstate rural students' academic readiness and lead to greater difficulties in maintaining HOPE Scholarship eligibility once in college.

**Figure 6.**

*Shares of Dominant HOPE Categories by County.*



**County Performance Typology**

While earlier analyses compared rural and urban students to individual outcomes, these measures do not completely capture the complexities of county-level patterns. This

section introduces a performance typology analysis to classify counties and better visualize patterns based on academic performance and whether students retain or lose HOPE Scholarship eligibility. The county-level typology integrates three performance indicators: (1) mean high school GPA, (2), mean cumulative university GPA, and (3) the dominant HOPE Scholarship trajectory category within each county. Counties were divided into tertiles (low, middle, high) based on both high school and college GPA. These GPA tiers were then combined with the most frequent HOPE trajectory category in each county to create a five-category county-level typology as described in Table 21.

**Table 21**

*Matrix of County Typologies*

<b>College GPA</b> →			
<b>High School GPA</b> ↓	<b>High (T3)</b>	<b>Middle (T2)</b>	<b>Low (T1)</b>
<b>High (T3)</b>	Consistently Strong (Fully HOPE)	Mixed/Other	Inflation/Persistent Loss (HOPE Loser/HOPEless)
<b>Middle (T2)</b>	Mixed/Other	Mixed/Other	Mixed/Other
<b>Low (T1)</b>	Recovery/Support Success (Fully HOPE/ HOPE Regainer)	Mixed/Other	Chronic Underperformance (HOPE Loser/HOPEless)

The classification rules were defined as follows for the typology categories:

1. Consistently Strong – Counties classified in the high tertile for both high school and college GPA, with the dominant HOPE category being Fully HOPE. These counties reflect consistent academic strength from high school through college, indicating successful student preparation.
2. Inflation/Persistent Loss – Counties in the highest tertile for high school GPA but the lowest tertile for college GPA, with the dominant HOPE trajectory categories

as HOPE Loser or HOPEless. This classification represents possible grade inflation and overestimation of preparedness at the high school level.

3. Recovery/Support Success – Counties in the lowest tertile for high school GPA but the highest tertile for college GPA, with dominant HOPE trajectory categories of Fully HOPE or HOPE Regainer. This category reflects academic recovery, with students outperforming expectations relative to high school preparation.
4. Chronic Underperformance – Counties in the lowest tertile for both high school and college GPA, with HOPE Loser or HOPEless as the dominant trajectory categories. This category represents persistent academic disadvantage and indicates potential systematic barriers including fewer resources and limited academic preparation.
5. Mixed/Other – Counties that displayed mixed performance trends and did not fit well into the above patterns. These counties displayed middle GPA tertiles and varied dominant HOPE trajectory categories.

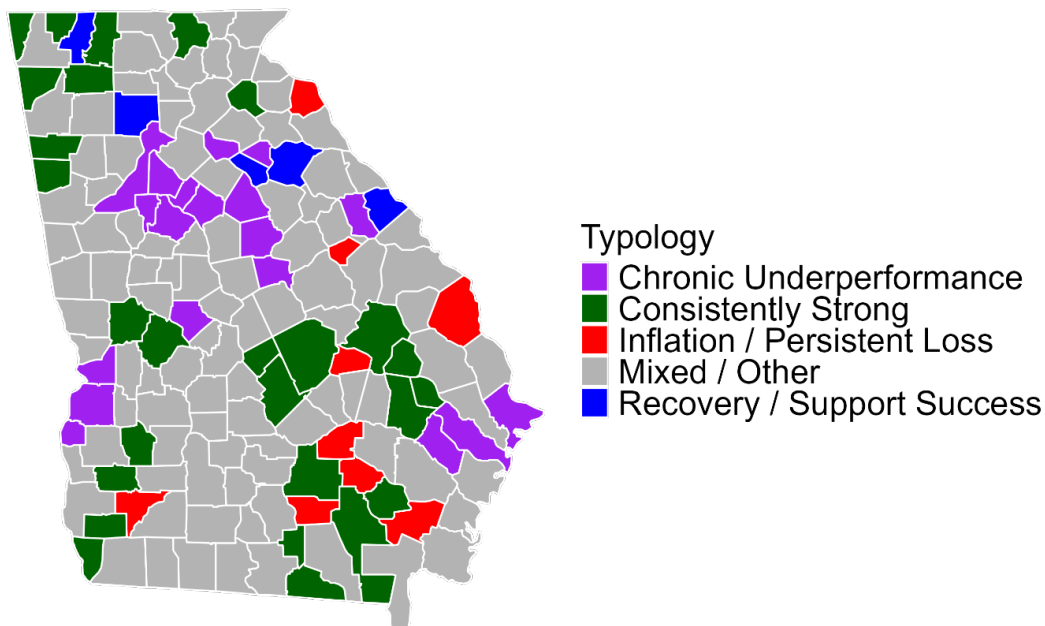
Figure 8 displays results of the typology analysis. Although many counties fall into the Mixed/Other category, indicating average or inconsistent performance, the other shaded counties represent meaningful deviations from the norm. By focusing on these outlier counties, this typology helps identify where major strengths or critical issues exist. For example, all nine counties classified as Inflation/Persistent Loss (red) are rural, indicating where high and possibly inflated high school GPAs do not translate into college performance and HOPE Scholarship retention. In contrast, three of the four Recovery/Support Success counties are urban. Notably, Consistently Strong (green) counties are also mostly rural counties, demonstrating high college performance and

HOPE Scholarship retention among many rural students. Clusters of Chronic Underperformance (purples) in Atlanta, the southeast, and southwest Georgia underscore persistent disadvantage, with 14 of the 20 counties classified as urban.

Further, the geographic clustering of certain types indicates that academic mismatch may not be random but rather potentially reflects broader structural, regional, and resource differences that could be examined in future research. Also, Consistently Strong counties being mostly rural challenges the assumption that urban areas consistently outperform rural ones.

**Figure 7.**

*Typology Mismatch by County.*



***Inferential Analysis of HOPE Trajectories***

A multinomial regression model was used to examine the differences in patterns of HOPE Scholarship receipt over time between rural and urban students. The reference group is HOPEless, with the other outcome categories as Fully HOPE and Other, which

combines HOPE Regainers, HOPE Winners, HOPE Losers, and Rollercoaster. Table 22 presents the results predicting HOPE Scholarship trajectory membership. The model explained approximately one-third of the variance in HOPE Scholarship trajectory outcomes (McFadden R<sup>2</sup> = .329), indicating strong predictive power.

After controlling for academic and demographic characteristics, rural students show lower odds of being classified as Fully HOPE (OR = 0.53, p < .001) and slightly lower odds of belonging to the other HOPE Scholarship categories (OR = 0.87, p = .004) compared to their urban peers. High school GPA remained as the strongest predictor, with higher GPAs substantially increasing the likelihood of remaining Fully HOPE or regaining HOPE Scholarship status. Male, Pell eligibility, and ethnicity groups in the Other category were all significantly less likely to fall into higher-performing categories relative to HOPEless. These findings suggest that both geographic and socioeconomic factors contribute to differential patterns of HOPE Scholarship retention, with rural, low-income, and male students being most at risk for losing the scholarship.

**Table 22 (OR, 95%, CI, p)**

*Multinomial Regression – HOPE Trajectory (1-HOPEless, 2-Other, 3-Fully HOPE)*

	Other (OR, SE, p)	Fully HOPE (OR, SE, p)
Origin (Rural)	0.872, 0.048, .004	0.532, 0.054, < .001
High School GPA	221.11, 0.057, < .001	3424.35, 0.067, < .001
Gender (Male)	0.770, 0.029, < .001	0.525, 0.033, < .001
Ethnicity (Other)	0.835, 0.030, < .001	0.539, 0.035, < .001
Pell (True)	0.889, 0.031, < .001	0.844, 0.037, < .001

McFadden R<sup>2</sup> = 0.329

### **Results for Research Question 3: Bachelor’s Degree Completion**

#### *Descriptive Statistics of Bachelor’s Degree Completion*

Table 23 presents degree completion rates for rural and urban students across the HOPE Scholarship trajectory categories Fully HOPE, HOPE Loser, and HOPE Regainer. Urban students completed degrees at a slightly higher rate (76.9%) compared to rural students (73.9%). Among HOPE Scholarship trajectory categories, Fully HOPE and HOPE Regainer students exhibited the highest completion rates. As anticipated, HOPE Losers had the lowest completion percentages, particularly among rural students, where just over half (54.1%) completed a degree. HOPE Losers among urban students completed a degree at 59.2%, approximately five percentage points more than rural students. HOPE Regainers have the highest completion rates for both urban and rural origins at 91.9% and 90.2% respectively, indicating motivation among students who battle to regain HOPE eligibility. These results indicate that while overall completion rates are similar by geographic origin, scholarship retention status is strongly associated with graduation likelihood.

**Table 23**

*Degree Completion Rates by HOPE Trajectory and Geographic Origin*

	Urban	Rural	Total
Fully HOPE	16,228 (87.5%)	3,148 (86.8%)	19,373 (87.4%)
HOPE Loser	11,704 (59.2%)	2,425 (54.1%)	14,129 (58.3%)
HOPE Regainer	2,275 (91.9%)	428 (90.2%)	2,703 (91.6%)
Total	30,207 (76.9%)	6,001 (73.9%)	36,208 (76.3%)

***Spatial Analysis of Bachelor’s Degree Completion***

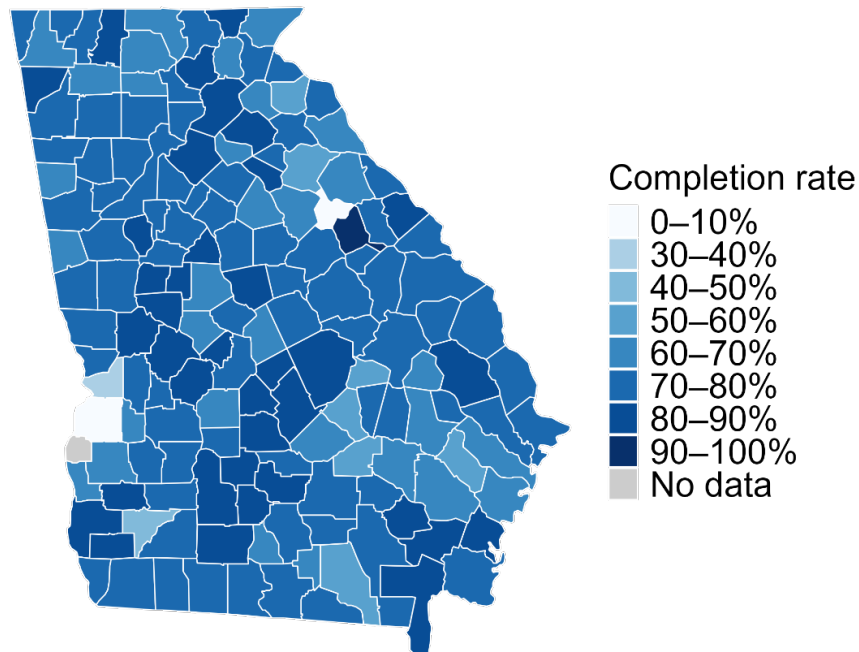
Figure 9 demonstrates the geographic distribution of bachelor’s degree completion rates among HOPE Starters, defined as students who enrolled with HOPE eligibility. Darker shades of the map represent higher completion rates. A few key spatial patterns emerge, with completion rates varying across the state. Higher-performing

counties appear in a few parts of North Georgia, the Atlanta metropolitan area, and select counties in the east-central and south-central counties, indicating that strong outcomes are not confined to a single geographic region.

Lower performance under 50% completion were noted in rural areas of South and Southwest Georgia, suggesting regional disadvantage. However, the presence of 28 rural counties with completion rates above 80% demonstrates that rural status alone does not determine outcomes and that local factors, such as university support, community resources, or student composition may help some rural areas close the gap. This variation within rural and urban counties suggests that geography is an important but insufficient explanation for student success and raises questions about structural and institutional conditions at the local level that shape disparities.

**Figure 8.**

*Bachelor's Degree Completion Rate by County – HOPE Starters.*



### ***Inferential Analysis of Bachelor's Degree Completion***

Table 24 displays the results of the logistic regression predicting degree completion as a function of geographic origin, HOPE Scholarship trajectory category, and student-level covariates. The model was statistically significant ( $R^2 = .110$ ), indicating a moderate explanatory fit. Consistent with prior findings, rural students who lose the HOPE Scholarship had lower odds of completing a degree compared to urban students ( $OR = .79, p < .001$ ). HOPE trajectory status was a strong predictor of completion with Fully HOPE students more than four times as likely to graduate ( $OR = 4.40, p < .001$ ) compared to HOPE Losers, and HOPE Regainers, mostly rural students, with nearly eight times higher odds ( $OR = 7.70, p < .001$ ). High schools GPA was positively associated with completion ( $OR = 1.49, p < .001$ ), while male ( $OR = 0.88, p < .001$ ) and Pell-eligible students ( $OR = 0.77, p < .001$ ) were significantly less likely to earn a degree.

A small but significant interaction exists between rural origin and Fully HOPE ( $OR = 1.17, p = .036$ ) suggesting that rural students who retained the HOPE Scholarship throughout enrollment were slightly more likely to complete their degree than their urban counterparts. No significant interaction was observed with HOPE Regainers. These results indicate that while rural origin is generally associated with lower completion rates, the disadvantage is largely concentrated among students who lose the HOPE Scholarship.

#### **Table 24**

*Logistic Regression – Degree Completion (HOPE Trajectory X Origin)*

	OR	SE	t	p	95% CI
Intercept	0.420	0.158	-5.486	< 0.001	[0.30,0.57]
Origin (Rural)	0.792	0.046	-5.094	< 0.001	[0.72,0.87]
Fully HOPE (HOPE Loser)	4.397	0.032	46.296	< 0.001	[4.13,4.68]
HOPE Regainer	7.698	0.079	25.732	< 0.001	[6.61,9.02]
High School GPA	1.490	0.046	8.593	< 0.001	[1.36,1.63]
Gender (Male)	.876	0.027	-4.909	< 0.001	[0.83,0.92]
Ethnicity (Other)	1.157	0.029	5.036	< 0.001	[1.09,1.22]
Pell (True)	0.770	0.029	-8.957	< 0.001	[0.73,0.82]
Rural X Fully HOPE	1.167	0.073	2.100	.036	[1.01,1.35]
Rural X HOPE Regainer	0.972	0.186	-0.152	.879	[0.68,1.41]

McFadden R<sup>2</sup>= 0.110

### Summary of Findings

This chapter presented the results of the descriptive, spatial, and inferential analyses, examining the relationship between geographic origin and academic outcomes among HOPE Scholarship recipients attending Georgia’s comprehensive universities between 2013 and 2019. Analyses were organized with three research questions addressing academic performance differences, patterns of HOPE Scholarship receipt over time, and bachelor’s degree completion. Together, the results provide a multidimensional view of rural and urban higher education outcomes and the role of HOPE retention in influencing academic success.

Across the three research questions, some consistent themes emerged:

1. The rural disadvantage is statistically significant but very modest in the higher education research context. Rural students demonstrated lower mean GPAs, fewer completed credit hours, and lower probabilities of retaining HOPE or completing a degree. However, the effect sizes were small, indicating that many rural students perform comparably to urban peers when controlling for background and preparation.

2. Pre-college preparation drives success. High school GPA consistently surfaced as the strongest predictor of academic performance, HOPE retention, and degree completion, underscoring the cumulative advantage of early academic readiness.
3. HOPE Scholarship retention overwhelmingly predicts graduation. Students who retained or regained the HOPE Scholarship were several times more likely to complete a bachelor's degree than those who lost it, reinforcing the role of HOPE as a mechanism for academic persistence and success.
4. Rural Fully HOPE students close the gap. When rural students maintain HOPE Scholarship eligibility, they achieve degree completion rates equal to or even slightly higher than urban students, suggesting that scholarship continuity may mitigate geographic disadvantages.

In summary, the analyses presented in this chapter confirm the existence of measurable rural/urban differences in academic performance, scholarship retention, and degree completion. HOPE Losers are more likely to be rural students and HOPE Regainers are slightly more likely to also be rural. The collective findings suggest that while rural students face structural and resource-related challenges, the continuity of HOPE Scholarship eligibility plays a critical role in narrowing outcome gaps. Importantly, rural students who maintain HOPE Scholarship eligibility help close the rural/urban gap in completion.

While rural-urban differences were statistically significant across the multivariate models, the direction of these differences is complex. When analyzed by HOPE trajectory category, rural students were more likely to begin college with HOPE and to regain eligibility after loss, yet they also lost HOPE at a higher rate than urban peers. In contrast,

urban students were more likely to enter without the scholarship and remain HOPEless, which suggests that while rural student experience greater volatility in maintaining the scholarship, they also demonstrate higher rates of initial access and recovery.

Chapter 5 builds upon these results to interpret their broader implications for educational equity and public policy in Georgia. It discusses how these findings inform state scholarship policy, institutional support strategies, and efforts to promote rural student success. The chapter then follows with recommendations for future research and practice.

## **Chapter V**

### **Discussion, Implications, and Conclusions**

The purpose of this study is to examine whether academic outcomes differ between HOPE scholarship recipients depending on geographic origin, specifically between rural and urban students attending regional comprehensive universities in Georgia. The study primarily assesses how HOPE eligibility trajectories relate to academic performance and degree completion considering the Geography of Opportunity framework.

The analysis flattens de-identified, administrative student records from multiple term files from the University System of Georgia from 2013 through 2019 to one record per student while maintaining term-by-term HOPE eligibility patterns to create trajectory groups. The analysis proceeded in three stages, including (1) descriptive statistics summarizing cumulative university GPA, cumulative credit hours earned, and bachelor's degree completion across rural and urban origins and HOPE trajectories; (2) spatial analyses using county level heat maps and county performance typology; and (3) inferential models including linear regression to predict cumulative university GPA and cumulative university credit hours earned, multinomial logistic regression to predict HOPE trajectory membership, and logistic regression to predict bachelor's degree completion, also considering high school GPA, gender, race/ethnicity, and Pell eligibility. The research questions that guided the study are:

RQ1: Do academic performance outcomes (cumulative university GPA and cumulative credit hours earned) differ between rural and urban HOPE recipients?

RQ2: Do patterns of HOPE eligibility differ over time between rural and urban recipients?

RQ3: Do bachelor's degree completion rates differ between rural and urban HOPE recipients?

This chapter presents a summary of the major findings to address the three research questions. It then considers an interpretation of the findings through a Geography of Opportunity lens and connects the findings to prior related literature on the influence of merit-aid and origin on academic success. Next, it details implications for theory, policy, and institutional practice, including suggested support and interventions. Additionally, limitations of the study are specified and recommendations for future research are offered. Finally, a brief conclusion underscores the study's contributions to existing literature.

## **Summary of Major Findings**

### ***Research Question 1: Academic Performance***

Descriptive statistics show that academic performance differed more by HOPE eligibility trajectory than by geographic origin. As anticipated, students in the Fully HOPE and HOPE Regainer categories consistently earned the highest GPAs and accumulated the most credit hours, and HOPE Losers had the lower outcomes. Rural and urban students within the same eligibility trajectory categories performed similarly, with only minor differences in mean GPA and credit hours earned.

The descriptive analysis also showed racial and ethnic differences within the HOPE trajectory categories. In particular, among HOPE Losers, rural non-White students had the lowest mean cumulative GPA of any group. This suggests that when HOPE eligibility is lost, some students experience compounded challenges tied to both geographic origin and race or ethnicity. Although the main focus of this study was rural-urban comparison, the lower outcomes among rural non-White HOPE Losers highlight that certain students face overlapping barriers that extend beyond geography alone.

County heat maps revealed that high school GPA was often higher in rural counties, but college GPA tended to be slightly higher in urban counties, suggesting that they may be better prepared for college with greater access to resources prior to entering college. However, multiple rural counties indicated high performance in college, indicating that rural success before entering college is possible under the right conditions. Notably, three rural counties, including Talbot, Talor, and Doge, consistently performed highest across high school GPA, cumulative university GPA, and cumulative credit hours earned.

Inferential analyses confirmed that rural origin was a statistically significant but small negative predictor of both cumulative university GPA and cumulative university credit hours earned. High school GPA was the strongest predictor in every model, reinforcing the importance of preparation before enrolling in college.

The hypothesis (H1) was partially supported statistically, but the effect sizes were extremely small, suggesting minimal practical significance. Rural students performed only slightly lower on average, but when controlling for preparation and demographics, rural and urban HOPE recipients are shown to have similar academic performance.

## ***Research Question 2: HOPE Trajectory Patterns***

Descriptive results showed that rural students were more likely to enroll in college with HOPE, but also more likely to lose it than urban students. Urban students were more commonly found in the HOPEless eligibility category and showed slightly more variation in both losing and then regaining HOPE than rural students.

County heat maps showed that Fully HOPE was the most common trajectory across the state, in both rural and urban counties. HOPE Losers were concentrated in many rural counties, visually confirming the descriptive findings. Similarly, HOPEless counties appeared more often in urban counties, suggesting lower initial academic preparedness in urban settings.

The county level performance typology provided deeper visual insight by combining high school GPA, cumulative university GPA, and dominant HOPE eligibility trajectory categories. Consistently Strong counties were found to be mostly rural, challenging the assumption that urban areas outperform rural areas. Inflation/Persistent Loss counties were all rural, suggesting inflation of high school GPAs in some rural areas that do not translate to college success or HOPE Scholarship retention. Recovery/Support Success counties were urban, showing places where students improved academically while in college. Chronic Underperformance counties clustered in urban areas around Atlanta and in parts of southeast and southwest Georgia.

Some unexpected patterns were noted, including that rural students often enrolled in college better prepared with higher high school GPAs than urban students, contrary to common assumptions about lack of preparation or access to resources among rural students. Urban students were more likely to never qualify for HOPE at all, despite the

notion that urban areas have more access to resources and rigorous academics. Some rural counties outperformed urban counties across every metric, revealing that geography alone does not determine higher education outcomes. Rural grade inflation may contribute to higher loss of HOPE in some areas, which could explain the larger share of HOPE Losers in rural areas.

Regression results confirmed that rural students had lower odds of remaining Fully HOPE. High school GPA was again the strongest predictor of being in the Fully HOPE trajectory category. The hypothesis (H2) predicted that rural students would show lower continuity of HOPE receipt over time. This hypothesis was supported by the findings because rural students are more likely to lose HOPE and less likely to stay continuously eligible compared to urban students.

### ***Research Question 3: Degree Completion***

Overall, degree completion rates were slightly higher for urban students than rural students, reflecting modest rural disadvantages. However, HOPE trajectory status was far more predictive of completion than origin. Completion by trajectory showed that HOPE Regainers had the highest completion rates at 92% completion for both rural and urban students. Fully HOPE also had high completion rates at 87% completion for rural students and 88% completion for urban students. HOPE Losers showed the lowest completion rates with 54% completion among rural students and 59% among urban students. These findings show that losing HOPE is associated with drops in degree completion, especially for rural students. Conversely, students who maintain or regain HOPE most always graduate, regardless of origin.

Spatial results visually revealed these patterns with high completion rates found across both rural and urban counties. Twenty-eight rural counties had completion rates above 80%, demonstrating that positive higher education outcomes in rural areas are possible. The lowest completion rates under 50% were concentrated in rural South and Southwest Georgia, demonstrating potential regional disadvantage. Some urban counties around the Atlanta metro area also experience low completion, indicating urban status does not guarantee academic success. This variation in completion indicates that local context and university support could matter more than geography alone.

Logistic regression validated that rural origin was associated with lower odds of degree completion (OR = 0.79,  $p < .001$ ) when considering preparation and demographics. HOPE trajectory category was the strongest predictor of graduation with Fully HOPE students 4.4 times more likely to graduate than HOPE Losers and HOPE Regainers were 7.7 times more likely to graduate than HOPE Losers. In other words, continuity or recovery of HOPE eligibility is the most powerful predictor of completion.

A small but significant positive interaction was found between rural origin and Fully HOPE (OR = 1.17,  $p = .036$ ). This means that rural students who maintain HOPE are slightly more likely to graduate compared to urban students who maintain the scholarship. No significant interaction was found with HOPE Regainers. These findings show that rural disadvantages in completion only persist when HOPE is lost. When rural students retain HOPE, they close the rural-urban gap.

The hypothesis (H3) predicted that rural HOPE recipients would have lower graduation rates than urban recipients. The hypothesis was partially supported; however, the gap was small and concentrated among students who lost HOPE eligibility. When

rural students-maintained HOPE, they graduated at rates slightly higher than urban students. The takeaway is that the most key factor for graduation is not where a student is from, but rather if they maintain or regain the HOPE Scholarship. Rural disadvantages are not inevitable and are shown to be mitigated when financial support is sustained.

### **Additional Insights**

#### ***Role of HOPE Trajectory Eligibility***

The results answered the three research questions but also revealed deeper insights into the interaction of place, HOPE Scholarship eligibility trajectories, and academic momentum that help explain why some students persist and others fall behind. For example, the results showed that place alone does not determine student success but rather depends on whether HOPE Scholarship recipients maintain eligibility. A primary part of this study is the use of the long-term scholarship trajectories across enrollment. This element revealed that trajectory membership strongly predicts outcomes and that county performance at the county level varies with some regions improving over time and others declining. Understanding student success related to financial aid requires following students over time and studying patterns of financial aid eligibility.

Rural students who lose the HOPE Scholarship experience the largest drop in degree completion. Rural students who keep the HOPE Scholarship perform as well or even better than their urban peers. Urban students show more movement in scholarship status, while rural students who lose the HOPE Scholarship are less likely to recover it. The county typology results further show that rural counties are not uniformly disadvantaged with some rural counties consistently performing and others indicating inflation and persistent loss patterns. These insights suggest that geography does not

create overall disadvantage, but it does increase the consequences of losing financial support.

### ***Role of High School GPA***

It is important to note that across every model, high school GPA was the strongest predictor of academic performance and success. Students entering with stronger preparation were more likely to retain HOPE Scholarship eligibility. High school GPA predicted cumulative university GPA, cumulative credit hours earned, HOPE Scholarship eligibility, and bachelor's degree completion outcomes. These findings validate success in college starts before enrolling in college. High school preparation and early academic momentum are key factors of student success in college. Financial aid support can then help fuel the momentum, but it cannot replace the need for preparation.

### **Interpretation of Findings**

#### ***Geography of Opportunity Framework***

This study was based on the theoretical assumption that where a student comes from shapes the resources, support systems, and structures that either expand or constrain opportunity. Prior research has often assumed that urban students benefit from greater access to higher-quality schools, advanced and rigorous coursework in high school, better proximity to colleges, and greater academic support. Prior research also suggests that rural students face structural disadvantages that are obstacles for pre-college preparation and persistence. This study both confirms and challenges these assumptions in important ways.

The part of the framework that is supported is that place does shape outcomes, but not uniformly. Consistent with the Geography of Opportunity framework and prior

research (Galster, 2001; Byun et al., 2012; Koricich et al., 2018), the findings confirm that origin does matter. Rural students were less likely to maintain HOPE Scholarship eligibility over time, less likely to complete a bachelor's degree overall, and more impacted when financial support was lost. These findings align with the idea that rural students face additional challenges that can make it more difficult to persist in college especially when financially strained. However, the effect sizes for rural disadvantage were small, suggesting that place alone does not determine higher education outcomes. Geography may influence opportunity, but its impact depends on what happens after students enter college.

The findings also challenge previous assumptions about the preparedness of rural students as rural students were found to often enter more prepared than urban students. One of the most surprising findings was that rural students had higher average high school GPAs than urban students. Also, several rural counties are ranked as the highest achieving counties in both high school and college academic performance. This contradicts the common narrative in previous studies that rural students enter college less prepared. Instead, the findings show that some rural schools produce strong academically prepared students. This supports emerging research showing that rural academic preparation can be high, even in the context of having fewer resources (Showalter et al., 2019; Tieken, 2016).

### ***Origin and Trajectory Interaction***

Regarding the interaction of origin and HOPE Scholarship eligibility, urban and rural students who kept HOPE Scholarship eligibility performed similarly. Rural students who lost the HOPE Scholarship experience decline in cumulative credit hours earned and

degree completion. The Geography of Opportunity framework is not just about access to higher education, but also about the ability to sustain opportunity once in college. Rural students may start strong, but the results suggest that when financial support or academic performance declines, geography impacts vulnerability regarding academic momentum and completion.

The results also reveal the resilience of rural students who maintain the HOPE Scholarship that challenges past narratives. One of the most powerful findings is that rural students who maintain the HOPE Scholarship graduate at slightly higher rates than urban students who maintain the scholarship. This shows that when given sustained financial support, rural students can thrive and even outperform their urban peers. This challenges the perception that urban students always have an advantage (Marré, 2017; Provasnik et al., 2007).

Spatial and typology findings reveal that the rural versus urban divide is complex and dependent on context. Some rural areas show academic strength and persistence while some urban areas experience academic declines. This aligns with modern research arguing that zip code matters, but not necessarily in predictable ways (Chetty & Hendren, 2018). Local educational issues and community context perhaps shape outcomes more than rural or urban origin alone.

Therefore, geography alone does not determine who succeeds but rather influences the continuity and stability of opportunity and students' ability to recover when opportunity is disrupted by issues such as financial constraints. When financial support and academic momentum are sustained, rural students are just as successful as urban students and sometimes more successful. When support is lost, geography

intensifies the impact to student success. In summary, the findings both confirm and challenge the Geography of Opportunity framework in relation to merit-based financial aid policy.

### **Financial Aid and Scholarship Trajectories**

The findings from this study also demonstrate that the HOPE Scholarship does far more than reduce tuition but also functions as a gatekeeper that determines who is able to remain on the journey to graduation. Students who retained or regained eligibility, regardless of geographical origin, had higher graduation rates than those students who lost it. This aligns with prior research showing that financial aid does not just increase access to college, but directly shapes academic momentum and persistence (Henry et al., 2004; Singell, 2004). However, this study extends this idea by showing that it is not merely receiving financial aid that matters, but the trajectory of eligibility for merit-based aid matters over time. Students who began with the HOPE Scholarship but lost it, or HOPE Losers, had the lowest GPAs, the fewest earned credit hours, and the lowest bachelor's degree completion rates. In contrast, students who regained HOPE Scholarship eligibility, or HOPE Regainers, achieved the highest graduation rates of any group, suggesting that regaining eligibility can restore academic momentum. These patterns demonstrate that financial aid in Georgia operates as a level of opportunity if sustained, regardless of origin. However, once a student loses eligibility, their academic trajectory is negatively affected.

Losing HOPE eligibility is not simply the result of individual academic failure in college but can reflect structural barriers to success. The results of this study show that students who lost the HOPE Scholarship also tend to earn lower GPAs and credit hours,

be disproportionately male, Pell-eligible, and from underrepresented racial/ethnic backgrounds. Prior literature warns that merit-based aid may unintentionally penalize students going to college with unequal preparation or fewer resources (Dynarski, 2000; Sjoquist & Winters, 2015). This study provides evidence that HOPE Scholarship loss is a penalty because once it is gone, the likelihood of leaving college without a degree increases sharply.

Further, rural students were more likely to begin college with the HOPE Scholarship, but also more likely to lose it and less likely to regain it. This means that rural students may leverage the HOPE Scholarship to access college but are left more financially vulnerable when academic struggles surface. Without strong institutional support, they may face a higher risk of dropping out before earning a degree. Therefore, although the HOPE Scholarship has helped thousands of students access and succeed in college, this pattern shows that it can also unintentionally reinforce existing inequalities.

### **Mixed Typology and Performance**

To better understand how preparation is translated into college performance, this study also employed a typology methodology of high school and college GPAs to classify counties based on performance. This approach revealed shifts in some counties as students moved from high school to college in certain areas of the state, which could explain why HOPE Scholarship eligibility was lost as performance declined and academic momentum was lost. Most notably, the typology approach showed that geography alone does not determine outcomes as some rural counties showed mixed results and consistently performed, while some urban counties showed decline.

One of the most important findings from this examination is that patterns of academic performance and HOPE Scholarship retention do not occur randomly across the state but cluster geographically. For example, the heatmaps revealed that chronic underperforming counties were often in Atlanta, southeast, and southwest Georgia. Those counties that indicated grade inflation and persistent loss were rural and concentrated in pockets of the state. Strong counties with high performance were also clustered. The clustering in these contexts suggests that student outcomes can be influenced by local conditions such as K-12 rigor, availability of coursework, grade inflation, access to support service, local economic conditions, and cultural expectations regarding college. This provides evidence that students can succeed or struggle within systems that are shaped by geography, aligning with the Geography of Opportunity framework.

### **Policy Intervention**

The findings of this study confirm similar success of the HOPE Scholarship program for both rural and urban students, with HOPE Scholarship recipients from both geographical contexts performing well academically in high school and college and graduating with a bachelor's degree. However, the issues indicated in underperformance clustered in certain areas of the state indicate there could be some opportunity for policy intervention, including the following:

1. Targeted support in high-risk counties.
2. Strengthening high school to college alignment and address grade inflation.
3. Create institutional safety nets around HOPE Scholarship loss across state institutions such as the "Keep Hope Alive" program at Georgia State

University, which has successfully helped students recover HOPE eligibility (Georgia State University).

### **Theoretical Implications**

This study also tests the Geography of Opportunity framework by showing that place does alone does not influence college access or post-enrollment outcomes such as academic performance, merit-based scholarship retention, and degree completion. Most prior use of the framework in higher education settings focuses on place influence on enrollment decisions or proximity to postsecondary institutions. However, this study shows that after making the decision to attend college geography still does not completely determine success. Also, place matters, but not always in the expected direction. Rural students were not shown to be uniformly disadvantaged. Many rural students performed well academically and Fully HOPE students from rural counties completed degrees at higher rates than urban peers. This challenges traditional narrative of rural disadvantages and how opportunity structures can function differently across regions. Also, geography interacts with financial aid trajectories. The interaction between origin and HOPE Scholarship trajectories reveals that opportunity is influenced not just by location, but how students move through the journey.

### **Financial Aid Research Implications**

Many financial aid studies look at scholarship status as a static variable instead of a pattern. This study uses distinctive HOPE Scholarship trajectory categories to reveal that:

1. Losing merit-based financial aid is different from never having it.
2. Regaining merit-based aid predicts higher academic momentum and restoration.

3. Merit-based scholarship eligibility patterns influence academic trajectories more than place.

This trajectory-based research approach shows scholarship status is a dynamic process and not just an isolated event of a one-time award, providing deeper context for understanding how merit-based financial aid functions over time as both an opportunity and a risk.

### **Practical and Public Policy Implications**

The findings of this study have important implications for policy and practice for state policy makers, higher education institutions, and regional planning efforts. The results show that place alone does not determine academic success, but scholarship continuity plays a critical role. Interventions must address financial structures to improve student outcomes. The results show that losing the HOPE Scholarship is one of the most powerful predictors of dropping out without earning a bachelor's degree. Policy action to provide state-level or institutional support for students who lose the HOPE Scholarship to temporarily cover partial tuition or automatically provide academic support for students nearing GPA thresholds for losing the scholarship could be impactful for retaining students. While front-loaded merit-based financial aid is beneficial for college access, funding should be considered for providing sustained support particularly for students on the edge of losing eligibility, regardless of geographical origin. Also, while the HOPE Scholarship is shown to improve achievement, merit-based financial aid policies can inadvertently privilege students who enter college with stronger preparation. Balancing merit and need-based criteria may improve equity while sustaining the academic support

incentives. Future policy considerations could explore hybrid models that reward persistence while offering recovery opportunities for students who are at risk.

### **Higher Education Institutional Implications**

While higher education institutions cannot dictate HOPE Scholarship policy, they can intervene at critical trajectory changing checkpoints. Institutional strategies could include:

1. Identification of students approaching GPA checkpoints and intervene early for students at risk of losing the HOPE Scholarship.
2. Provide practice advice tied to HOPE Scholarship check points.
3. Expand tutoring and supplemental instruction for at-risk merit-aid recipients.
4. Target support to HOPE Losers to prevent withdrawal.
5. Intervene during recovery attempts to build momentum.
6. Recognize and target support for rural non-White students at risk of losing HOPE.
7. Identify counties with potential high school grade inflation and provide targeted support to incoming students from those areas.
8. Strengthen institutional support for students who lose HOPE to encourage recovery.

The results of this study show that only 5.7% of rural students and 4.9% of urban student regain HOPE eligibility after losing it, demonstrating the difficulty to recover the scholarship once academic momentum declines. These low recovery rates indicate that institutions should proactively design recovery pathways dedicated to helping students regain the scholarship to give them a realistic change of academic success. An example is Georgia State University's *Keep HOPE Alive (KHA)* program, which temporarily covers

a portion of tuition for students who fall below the HOPE GPA thresholds, while also requiring them to participate in academic workshops, tutoring, and progress monitoring. Georgia State has reported strong success in helping students regain the scholarship, which has moved the needle on retention and completion. Recent analysis revealed that students engaged in the KHA program demonstrated higher six-year graduation rates with nearly four out of five participants earning a degree. The most significant gains occurred among Black and Pell recipients, whose completion rates rose by 19 and 17 points, respectively (King, 2024).

### **Implications for Research**

This study offers important contributions to higher education policy research and highlights key directions for potential future research. By integrating the longitudinal administrative data, trajectory modeling, and spatial analysis, the study demonstrates why looking at financial aid as a dynamic process is important for understanding how it shapes student higher education outcomes. The study shows that the value of large-scale administrative data that follows students over time allows research to capture changes in eligibility, enrollment, and performance. Future research on financial aid, persistence, and equity should prioritize administrative longitudinal data to better understand how policies function over time, especially for examining how financial aid policy changes over time and trajectory to impact student success.

Another important avenue for future research that emerged from this study is the role of potential high school grade inflation in shaping college outcomes, particularly in rural areas. The descriptive and spatial findings revealed that rural students often enroll in college with higher high school GPAs than urban peers yet were more likely to lose

HOPE Scholarship eligibility during college. This suggests that in some regions, high school grades may overestimate student capacity and aptitude for college. The county level typology identified counties where this scenario was present, which could be studied at the more granular level to understand how local context shapes financial aid trajectories.

Further, this study only reveals quantitative patterns for understanding how merit-based financial aid policy influences student outcomes. Qualitative or mixed-methods research could include further contexts through interviews or surveys that could explore how prepared rural and urban students felt when enrolling in college, what support mattered to them most when navigating the college journey, and how they perceive the influence of the HOPE Scholarship on the college trajectory.

Finally, this study shows that rural students who receive the HOPE Scholarship and choose to attend college perform on par with their urban peers. A complementary research idea is pre-enrollment access to assessing whether the availability of the HOPE Scholarship alters enrollment decisions for rural students compared to urban students. Evaluating this question would connect the Geography of Opportunity to earlier stages of the pipeline and to understand the effectiveness of the HOPE Scholarship in geographic context in terms of choice to pursue college. Future studies building on this work can continue to connect geography and merit-based financial aid trajectories to ensure that opportunities in higher education are both accessible and sustainable for all students.

### **Limitations of the Study**

This study offers important insights into HOPE Scholarship trajectories and how geographic origin shapes academic outcomes. However, several limitations should be

acknowledged when interpreting findings. First, the data analyses were based on administrative records from the University System of Georgia's regional comprehensive universities. Although these institutions enroll large numbers of students from urban and rural communities, the exclusion of research universities, state colleges, technical colleges, and private colleges limits the scope of the findings. Additionally, the dataset does not include qualitative information, such as student motivations, perceptions of financial stress, or experiences with institutional resources, which could help explain why certain patterns occurred.

### ***Measurement Limitations***

Several key variables relied on institutional measures that may not capture underlying structures. For example, high school GPA was treated as a measure of academic preparation, yet GPA may be affected by differences in rigor or grading standards across schools and counties. Similarly, HOPE trajectory categories were carefully defined, but depend on assumptions about term-by-term eligibility and did not capture the exact reasons for loss. These limitations could result in some misclassifications of trajectory patterns.

### ***Potential Unobserved Variables***

Although the study considers crucial factors such as high school GPA, race/ethnicity, gender, and Pell eligibility, there were unobserved characteristics that could also influence scholarship retention and academic success. These include student motivation, mental health, family support systems, employment, major selection, institutional culture, academic advising structure, and availability of institutional support

programs. Because these factors are not captured in administrative datasets, their influence could not be directly measured.

### ***Generalizability***

The findings reflect the outcomes of students attending Georgia's regional comprehensive universities which may not generalize all four-year institutions in Georgia or beyond Georgia in other states. Institutions have various levels of resources and support systems, which may affect both HOPE retention and student outcomes. Additionally, the study focused on one state's merit-based financial aid program and although HOPE is highly influential and modeled after national programs, states may differ in financial aid policies, scholarship eligibility rules, and geographic contexts. Despite these limitations, the use of a large administrative dataset, longitudinal design in examining HOPE trajectories, and spatial methods strengthens the validity of the findings and provides a solid foundation for future research that can build on this work.

### **Conclusions**

The purpose of this study was to examine whether academic outcomes among HOPE Scholarship recipients differ by geographic origin, specifically comparing rural and urban students attending Georgia's regional comprehensive universities. By using longitudinal administrative data, constructing trajectory-based patterns of HOPE Scholarship eligibility over time, and integration of spatial analyses with regression models, this study provides a multidimensional understanding of how geography, financial aid dynamics, and academic preparation intersect to shape student success.

The most important overall takeaway is clear that place does matter, but it does not act alone. Rural students face some modest disadvantages in academic performance,

scholarship retention, and degree completion, but the gaps are small and, in some cases, disappear when scholarship support is sustained. High school preparation and academic momentum are shown as the strongest predictors of success, while continuity of HOPE Scholarship eligibility was the single most powerful factor in degree completion. Important to note is that rural students who retained or regained the scholarship performed just as well as urban students and in some trajectory categories, exceeded urban performance. These findings challenge common assumptions about rural underperformance and highlight the critical role of financial aid stability in promoting student success.

This study also contributes to theory by extending the Geography of Opportunity framework into higher education and financial aid research. The results demonstrate that geography influences opportunity not only through access to college but also through patterns of preparation and retention of financial support. By introducing a trajectory-based approach and combining longitudinal and spatial methods, this study offers a dynamic means for studying how educational opportunities evolve over time and across place. It also presents a policy relevant framework for understanding how state merit-based financial aid programs can expand or constrain opportunities depending on how they are implemented and sustained.

The findings also have clear implications for practice and policy, with the results highlighting the need to support students after they enroll, not just at the point of access. Scholarship loss functions as a structural barrier and impacts more academically vulnerable students after they enter college. Policies that provide targeted support, early

interventions, or recovery pathways after loss could improve degree completion, regardless of geographic origin.

For higher education institutions, the findings underscore the importance of academic advising, early alert systems, financial counseling, and tailored support for students at trajectory turning points. For both rural and urban communities, more equitable resource allocation and alignment between high school and college expectations are needed to ensure that students are truly prepared to be successful in college.

This study also affirms that financial aid is not merely a funding mechanism but an engine of opportunity for students. When designed and sustained equitably, merit-based financial aid can help close geographic gaps and support student persistence and success for all students. As Georgia and other states continue to rely on merit-based aid as a cornerstone of higher education policy, this research reinforces that access alone is not enough to sustain positive student outcomes, but rather continuity and support are essential for turning access opportunities into degrees and better lives. Looking forward, the future of student success in higher education depends on whether financial aid policies evolve. By considering student trajectories and associated influences and support opportunities, policymakers and higher education institutions can better understand and identify where support is most needed, intervene at the most critical moments, and empower students to maintain academic momentum and graduate.

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**Appendix A:**  
**Institutional Review Board Exemption**



**Institutional Review Board (IRB)  
for the Protection of Human Research Participants**

**PROTOCOL EXEMPTION REPORT**

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**Protocol Number:** 04614-2025

**Responsible Researcher(s):** Shannon McGee

**Supervising Faculty:** Dr. Keith Lee

**Dissertation Research Member:** Dr. Keith Lee

**Project Title:** *Comparing the Efficacy of the HOPE Scholarship.*

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**Institutional Review Board Determination:**

This research protocol is **exempt** from Institutional Review Board (IRB) oversight under 45 CFR 46.101(b) of the federal regulations, **category 4**. If the nature of the research changes such that exemption criteria no longer apply, please consult with the IRB Administrator ([irb@valdosta.edu](mailto:irb@valdosta.edu)) before continuing your research study.

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**Comments:**

- *Once you receive approval from the USG, please submit a copy of the letter to be added to your research file.*
- *Upon completion of the research study all data (e.g. dataset, transcripts, etc.) must be securely maintained (e.g. locked file cabinet, password protected computer, etc.) and accessible only by the researcher for a **minimum of 3 years**. At the end of the required time, collected data must be permanently destroyed.*

- Proposed modifications must be submitted to the IRB Administrator at [tmwright@valdosta.edu](mailto:tmwright@valdosta.edu) for review and approval before implementation is permitted.*

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*Elizabeth W. Olphie*

*06.09.2025*

Elizabeth W. Olphie, IRB Administrator

Date

Thank you for submitting an IRB application.

Please direct questions to [irb@valdosta.edu](mailto:irb@valdosta.edu) or 229-259-5045.

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Revised: 06.02.16

**Appendix B:**  
**USG Data Sharing Agreement**

**Data Sharing Agreement  
Between the  
Board of Regents of the University System of Georgia  
and Shannon McGee**

This data sharing agreement (“Agreement”) is entered into by the Board of Regents of the University System of Georgia (“BOR”) and Shannon McGee.

Purpose of Agreement

The purpose of this Agreement is to use deidentified student data from the University System of Georgia to explore relationships between rurality, HOPE scholarship receipt, and student success outcomes.

This research seeks to help fill the gap in research where geographic context is often overlooked by examining whether the HOPE Scholarship equally supports post-secondary academic performance and persistence for rural and urban students. The HOPE program has shown to boost both enrollment and persistence, but research suggests its benefits may not be equitably distributed. Specifically, although students from rural areas that excel in high school have access to HOPE, low-income and rural students often face unique barriers that may hinder their ability to retain such scholarships. Using longitudinal, student-level data from Georgia’s regional comprehensive universities – institutions that serve diverse geographic populations – the study analyzes differences in cumulative GPA, credit hour accumulation, persistence, and graduation outcomes. It also explores whether geographic background moderates the relationship between HOPE receipt and academic success.

The research will be guided by the following questions:

1. Is there a difference in academic performance between HOPE Scholarship recipients from rural areas and those from urban areas attending regional comprehensive institutions in Georgia? (As measured by cumulative GPA and credit hours earned)
2. Is there a difference in persistence between HOPE Scholarship recipients from rural areas and those from urban areas attending regional comprehensive institutions in Georgia? (As measured by retention from the first to second year and bachelor’s degree completion)

Data

The BOR will provide Shannon McGee with the following data:

student-level longitudinal data representing first-time, full time freshmen students from Georgia Southern, Kennesaw State University, University of West Georgia, Valdosta State University pursuing a bachelor's degree that can be structured in a panel format across the academic terms covering fall 2013 through summer 2019.

The following variables are requested:

**Student Demographic and Enrollment (To Determine Origin Urban vs. Rural, Performance, Persistence and Control Variables)**

Unique Student ID  
Institution  
Academic\_Term  
Sex\_Code  
Race\_Ethnicity\_Code  
HS\_GPA  
Student\_Level  
Inst\_Cum\_Hrs\_Earned  
Inst\_Cum\_Hrs\_Earned\_Transfer  
Cumulative\_GPA  
COUNTY\_ORIGIN\_CODE

**Degrees Awarded (To Determine Graduation Outcome)**

Unique Student ID  
Institution  
Award\_Term  
Degree\_Level

**HOPE (To Determine HOPE Receipt/Retention)**

Unique Student ID  
Institution  
FIS\_YR  
FIS\_QTR  
GRANT\_TYPE

**Financial Aid (To Determine Pell Grant Receipt)**

Unique Student ID  
Institution  
award\_year  
academic\_term  
regents\_fund\_code

BOR agrees to share data with Shannon McGee in a manner that safeguards the confidentiality of student data as defined by the Federal Family Educational Rights and Privacy Act (FERPA) and

other applicable laws and regulations. FERPA establishes a right of privacy for student data based on a rule of non-release of individually identifiable data to anyone outside the student's institution or to persons inside the institution who have no legitimate need for the information without the express written permission of the student. However, FERPA contains a limited exception to the general rule when information is used by educational organizations for the purposes of conducting research to improve instruction. This Agreement fits under this limited exception to FERPA. See 20 U.S.C. § 1232 g (b)(1)(F).

Specifically, BOR agrees to share data with Shannon McGee under the following stipulations.

- The data will be used only for purposes outlined in this agreement:
  - To examine the academic outcomes of HOPE Scholarship recipients at Georgia's regional comprehensive universities, with a focus on identifying whether geographic background moderates the relationship between merit-based financial aid and student success.
  - To evaluate differences in cumulative GPA, credit hour accumulation, persistence, and graduation rates between rural and urban students who receive the HOPE Scholarship
  - To build a longitudinal panel dataset and analyze using regression models to understand persistence and academic performance over time.
- The parties agree that the transmittal of data shall be done in a secure manner.
- Shannon McGee will limit access to the data to staff who require the data to develop, exchange, maintain, analyze and evaluate information for the purposes outlined in this agreement. Shannon McGee shall maintain records of those individuals who are allowed access to the data and shall assure that each person is fully cognizant of the restrictions placed upon use of the data and the restrictions upon its disclosure.
- The data will be maintained in a secure environment and shall not be shared with other parties except as authorized by federal and/or state law.
- Shannon McGee will utilize their best efforts to maintain the confidentiality of the data.
- The linked data will be destroyed after use or two years after the BOR shares data with Shannon McGee.
- Shannon McGee will indemnify and hold the BOR harmless against any claim, loss, expense, or demand incurred by the BOR as a result of Shannon McGee's access and use of the data.
- Shannon McGee will provide any findings to be presented/published from the data to BOR at least two weeks prior to presentation/publication. Dissertations must be provided for review at least two weeks prior to defense.

- Small cell sizes ( $N < 10$ ) cannot be published.

#### Termination

This Agreement shall take effect upon completion of signatures and remain in effect for one year or until terminated. This Agreement may be terminated by either BOR or Shannon McGee upon notice to the other party. BOR may terminate this Agreement with or without cause at any time by providing written notice to Shannon McGee thirty (30) calendar days prior to the termination date. Upon termination, all projects using the linked data must be immediately discontinued.

Board of Regents of the University System of Georgia

Name: Angela Bell

Title: Vice Chancellor for Research and Policy Analysis

Organization: Board of Regents of the University System of Georgia

Signature: Signed by:  
  
8F2E020C8870490...

Date: August 11, 2025 | 5:22 PM EDT

Name: Shannon McGee

Title: CEO VSU Auxiliary Real Estate Foundation

Organization: VSU

Signature: DocuSigned by:  
  
BB9280CE11D14F5...

Date: August 11, 2025 | 2:21 PM EDT