FACTORS ASSOCIATED WITH URBAN HIGH SCHOOL GRADUATION RATES IN TENNESSEE

Keith Hembree

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FACTORS ASSOCIATED WITH URBAN HIGH SCHOOL GRADUATION RATES IN TENNESSEE

by

Keith Hembree

A Dissertation

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

Major: Counselor Education and Supervision

The University of Memphis

December 2023
Dedication

This dissertation is dedicated to my dad, I finally did it and could not have done this without you. Hope you are looking down from above celebrating in this journey with me.
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Over the past four and a half years, this PhD journey has not been straightforward. What began as a quest to learn more about obtaining a license for school counseling developed into an experience that not only allowed me to learn but also helped me build skills that I didn't even know I had.

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Abstract

This study aimed to investigate the relationships, if any, between Ready to Graduate indicator, average ACT scores, chronic absenteeism rates, and school counselor to student ratios in Tennessee's four urban counties surrounding Memphis, Nashville, Chattanooga, and Knoxville, Tennessee. Only eight of Tennessee's 95 counties have a population that is at least 75% urban, according to the Tennessee Advisory Commission on Intergovernmental Relations 2016 Report. The existence of segregated schools inside urban regions and the opportunity gap suggests that more research and data about Tennessee's urban communities are needed, especially in relation to graduation rates. The data analyzed for this study was downloaded from the Tennessee State Report Card located on the Tennessee Department of Education’s Website. The four urban counties of Davidson, Hamilton, Knox, and Shelby were picked in order to shed light on areas of Tennessee for which there isn't much current literature available outside of the Tennessee State Report Card. Research on school counseling ratios is abundant, with a focus on test scores and performance; on the other hand, less is known about the variables associated with high school graduation rates and students' preparedness for postsecondary education and careers. There are several studies on school counseling ratios that are currently being conducted, however only a few of them concentrate on Tennessee and none look of them look at the state's ready-to-graduate rates. For this study, the American School Counselor Association National Model will be used as a guide and is used to explain how services and resources affect school counseling, which could then have an impact on high school graduation rates. Therefore, by determining if these four variables have an impact on graduation rates, this study aimed to give information to assist school counselors in improving their programming readiness towards college and career readiness. The goal of this study is to close this gap by giving school counselors important
knowledge about the impact ratios may have on graduation rates and how to effectively manage their time going forward, when students need us now more than ever due to the aftereffects of the COVID-19 pandemic on their mental health.

   *Keywords*: urban high school graduation rates, school counselor ratios, ASCA National Model
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Factors Associated with Urban High School Graduation Rates in Tennessee

Chapter 1 Introduction

The goal of this study was to examine the relationship between Tennessee's four urban counties' high school graduation rates and factors such as attendance, Ready 2 Graduate, ACT scores, and ratio of school counselors. Within the four counties surrounding Memphis, Nashville, Chattanooga, and Knoxville, Tennessee, this study sought to explore graduation rates while considering the ratio of school counselors offered at each high school, the influence of chronic absenteeism, ACT Scores, and ready to graduate rates. The American School Counselor Association (ASCA) National Model (ASCA, 2019) was taken into consideration for this study. The ASCA model was used to describe how resources and services affect school counseling services, which in turn may impact high school student graduation rates.

Research Problem

There is a plethora of research on school counseling ratios, with an emphasis on test scores and success; however, less is known about the factors that lead to large graduation rates for high school students and readiness for college and careers (Kearney et al., 2021). There are currently a few studies that examine counseling ratios, but only a couple of them focus on Tennessee, but none of them examine the state's ready-to-graduate rates (Brasfield et al., 2021; Lancaster & Brasfield, 2023; Poynton & Lapan, 2017). This studies review of the literature focuses on the current peer-reviewed articles in the areas of school counseling ratios, the duties of a school counselor, the purpose, and effects of the ASCA National Model on School Counseling, and the effects of data-driven decision making on high school graduation rates and the field of school counseling. High counselor caseloads and ratios in the classroom have been shown to have an impact on students' academic progress and how positively they view the
resources available to them at school (Brasfield et al., 2021; Carey et al., 2010b; Kearney et al., 2021; Reback, 2010.). Carey et al., (2010b) and Reback (2010) discovered that three of these studies were commissioned by the American School Counselor Association (ASCA) to examine comprehensive school counseling programs in the states of Connecticut, Missouri, and Nebraska. These studies mentioned how access to college and career counseling services is associated with better outcomes in terms of ACT and Advanced Placement (AP) enrollment, however, they were limited in that they did not address what happens after graduation (Lapan et al., 2012).

According to one study by Poyton & Lapan (2017), young people are more likely to aspire to, enroll in, and succeed in postsecondary education if they start their planning early, meet academic competency standards in high school, and see their school counselors more frequently for assistance with college and career counseling (Poynton & Lapan, 2017). The social capital networks of the students in this study (Poynton & Lapan, 2017) were strengthened by school counselors who met with them more frequently to provide college and career readiness counseling services, and they also encouraged the acquisition of skills that were directly related to more successful transitions to postsecondary education. A recent paper discussing school counseling ratios and student level outcomes was released by Kearney et al. (2021). While this study by Kearney et al. (2021) does indeed focus on student outcomes such as ACT scores, state tests, and student level behavioral outcomes, it does not go into detail about graduation rates, college achievement, or rates of students who are prepared to graduate (Kearney et al., 2021).

The outcome of this study is to hopefully help bridge the gap by providing valuable information for school counselors on the effect ratios may have on graduation rates and how to best manage a school counselor’s time moving forward at a time when students need us more than ever due to the aftereffects of COVID-19 on their mental health (Karaman et al., 2021)
Background of Study

Schools are a crucial developmental framework for students' academic growth as well as social and emotional learning (Goodman-Scott et al., 2019). This significant responsibility is placed on the faculty and staff of schools, therefore, educators, especially school counselors, must make the most out of every moment of the school day to advance the development of their students in each of these areas (Goodman-Scott et al., 2019). Parents and guardians want to know what is being done to help guarantee that students receive the daily support they need given the amount of responsibility placed on school staff. This is where the ASCA National Model provides guidance and can aid school counselors and school counseling programs across the country. The ASCA National Model guides school counselors in the development of school counseling programs that: (a) are based on data-informed decision making; (b) are delivered to all students systematically; (c) include a developmentally appropriate curriculum focused on the mindsets and behaviors all students need for postsecondary success;, (d) close achievement and opportunity gaps, and (e) result in improved student achievement, attendance, and discipline (ASCA, 2019).

The guidance provided by the ASCA National Model is based on the idea that the more services and support a school counseling program can give holistically, the more time school counselors are able to spend with students (ASCA, 2019). This study explored how ASCA guidance may or may not effectively increase high school student graduation rates by using the ASCA National Model as the study's framework, however relationship does not imply causation.

The ASCA National Model's objective is to give school counselors across the country a standardized approach to use when implementing and redesigning the programs in their schools, districts, and states. However, it also gives principals and other administrators a framework to
use and refer to when evaluating school counselors (ASCA, 2019). One of the key components of the ASCA National Model is the need for school counselor to student ratios to be 1:250 to properly administer the model's programming and components (ASCA, 2019). Although the ASCA National Model's 1:250 ratio has been a mainstay since 1965, there is a question as to whether lower ratios enable counselors to provide more services or raise the standard of school counseling programs (Lancaster et al., 2021). However, higher counselor ratios were associated with a higher likelihood of applying to more universities and enrolling in a bachelor's degree in a recent study by Bryan et al. (2021) compared to not enrolling in any post-secondary institutions at all (Bryan et al., 2021).

Another crucial element of the ASCA National Model is determining whether there is an effect or influence on high school graduation rates by examining the relationship between School Counselor Ratios and ACT Scores, Attendance, and Ready 2 Graduate Rates. As one of the primary job responsibilities for school counselors today, ASCA offers tools and guidelines for counselors to follow to help their students succeed in postsecondary or job settings when they graduate from high school (ASCA, 2019). Therefore, this study sought to provide information to help school counselors improve their programming and supports around high school students' readiness for college and careers by examining whether an effect on graduation rates exists with these four variables (ASCA, 2019).

**Research Questions**

The following four research questions were examined in this study:

1. To what extent do school counselor ratios relate to graduation rates within four urban counties in Tennessee when taking student demographics into account?
(2) Are graduation rates related to average ACT composite scores of students within four urban counties in Tennessee when taking student demographics into account?

(3) What relationship do graduation rates have, if any, with Ready 2 Graduate rates on high school students within four urban counties in Tennessee when taking student demographics into account?

(4) What relationship do graduation rates have, if any, with student attendance on high school students within four urban counties in Tennessee when taking student demographics into account?

Definition of Terms:

The following definition of terms is provided to help assist the reader with this study and the terms are provided as defined by the Tennessee Department of Education (TNDOE, 2019) and ASCA (2019).

(1) **Attendance (Chronically Out of School Rate):** The chronically out of school or attendance rate represents the percentage of students who are absent 10 percent or more of the instructional days for which they are enrolled in a specific school or district (TNDOE, 2019).

(2) **Graduation Rate:** Is the percentage of students who graduate on time with a regular high school diploma (TNDOE, 2019).

(3) **Ready 2 Graduate Rate:** Represents the percentage of students who demonstrate readiness for a postsecondary education or career after high school (TNDOE, 2019).

(4) **Average ACT Composite:** The average ACT composite score represents the average ACT composite score for all students in the cohort, regardless of whether or not the student graduated (TNDOE, 2019).
(5) **Student Enrollment**: Set of data that includes all students who are enrolled in specific school, district, and state as of October 1st of the academic school year (TNDOE, 2019).

(6) **Number of School Counselors**: The total number of school counselors staffed in each school annually (TNDOE, 2019)

(7) **School Counselor Ratio**: Calculated ratio that represents the number of school counselors staffed in each school which is determined by dividing the student enrollment for that school by the number of school counselors provided within that particular school (ASCA, 2019).

(8) **Urban Areas**: The Office of Management and Budget's Metro-Micro System defines urban areas as locations with a population center and nearby areas connected to that population center; hence, these four counties were chosen to highlight the urban areas of Shelby, Davidson, Knox, and Hamilton Counties within Tennessee (Tennessee Advisory Commission on Intergovernmental Relations [TACIR], 2016).

(9) **Opportunity Gap**: The way social and economic factors such as race, socioeconomic status, access to resources, etc. affects a student’s academic success and college or career readiness (U.S. Commission on Civil Rights [USCOCR], 2007)

**Significance of Study**

This study examined 124 high schools in Tennessee’s most populous counties of Hamilton, Knox, Davidson, and Shelby. These four counties were chosen to provide insight on urban areas of Tennessee about which little literature is available for research studies, other than the Tennessee State Report Card (TNDOE, n.d.-b). Most of the research conducted to date on urban Tennessee school districts has centered on School Improvement Plans (Anfara et al.,
2006), TCAP Scores (Burke, 2021), the Scale to Assess Attitudes toward Reading (Tullock-Rhody et al., 1980), and dissertations on athlete participation (Bell, 1966; Gorman, 2010).

By focusing on graduation rates this study sought to fill a gap in the literature. Shelby, Davidson, Hamilton, and Knox counties in Tennessee are the four most populous counties, and this study sought to examine any relationship between school counseling ratios, chronic absenteeism (attendance rates), average ACT composites, and ready-to-graduate rates within high schools. Today's school counseling programs are far more focused on prevention than they were in the past, and some school counselors now cover many responsibilities that include disciplinary procedures, individual student counseling, test administration, and special education services such as IEP meetings and accommodations (Brasfield et al., 2021; Carrell et al., 2006; Kearney et al., 2021). Along with the ASCA National Model, all these other variables must be considered (ASCA, 2019). The ASCA National Model depends on state, district, or school counselors' willingness to adjust and enhance the model's elements as needed for any school counseling program to be successful. (Hatch et al., 2008). Future school counseling research on college and career readiness, as well as the impact school counselors' work has on graduation rates while taking attendance rates, ACT scores, and other factors into account, will be informed by the findings of this study (ASCA, 2019).

**Limitations**

The study is limited by the fact that there are other continuous variables, in addition to those under consideration (school counseling ratios, attendance rates, ACT Scores, and rates of students who are ready to graduate), that may have an impact on high school students' rates of graduation. For instance, factors like per-pupil spending and multi-tiered support systems may have an impact on graduation rates, however these factors were left out of this analysis due to the
limited data collected by the Tennessee State Report Card. Besides what is given in the Tennessee State Report Card, there are also a lot of unknown variables in schools that can have an impact on students such as student characteristics and access to resources (Brasfield et al., 2021, Burke, 2021, and Reback, 2010).

**Research Methodology**

This study examined the link, if any, between four continuous variables (school counseling ratios, attendance rates, ACT scores, and ready-to-graduate rates) and high school graduation rates. This study ran a regression between the independent and continuous variables to see if there was such a relationship. Regression is a potent tool that can explain and forecast actual events, such as graduation rates (Casson et al., 2014). Regression can be used to offer evidence of whether one variable does, in fact, influence another (Casson et al., 2014). This study used a regression to see whether there was a correlation between graduation rates and any of the four continuous variables included in the analysis. Shelby, Davidson, Hamilton, and Knox counties, the four most urbanized areas of Tennessee, were the focus of this study. These four counties were chosen because they meet the U.S. Census' criteria for Tennessee's four most urbanized counties in terms of population size and urbanization (TACIR, 2016). The opportunity gap, which has been thoroughly studied in the literature and outlined in Chapter Two of this study, was the reason these four urban counties in Tennessee were chosen for this study (Carey et al., 2010b; Kearney et al., 2021; TACIR, 2016).
Chapter 2: Literature Review

The current peer-reviewed literature surrounding the areas of school counseling ratios, the job of a school counselor, the purpose and impact of the ASCA National Model on School Counseling, and the impact of data-driven decision making on high school graduation rates and the school counseling profession are all explored in this review of the literature. Previous studies have demonstrated that high counselor caseloads and ratios within the school setting affect students ‘academic success and how favorably they perceive the resources offered to them at school (Brasfield et al., 2021; Carey et al.; 2010b; Kearney et al., 2021; Reback, 2010).

Hoyt (1955) produced the initial ground-breaking research that was based on his three presumptions: (a) training, (b) involvement, and (c) role of school counselors. However, these three presumptions were simply based on the author's viewpoint and were not supported by peer-reviewed research (Hoyt, 1955). Hoyt covered the breakdown of the job responsibilities of school counselors in his research by highlighting the fact that school counselors cannot work in a vacuum and the breakdown of the schedule for how much time is spent with pupils (Hoyt, 1955). Legislation, school atmosphere, and the change in the title of the position from guidance counselor to professional school counselor are just a few of the changes that have occurred in the field of school counseling since 1955 (Baker, 2001; Brasfield et al., 2021; Carey et al., 2010b; Hoyt, 1955).

The school counseling profession during the1960s and 1970s was not united, and it was a time when school counselors at this time were mostly considered guidance counselors and were encouraged to actively assist students in the classroom (Baker, 2001). The space race and school counseling evolved over two distinct time periods as the field developed (Gerler, 1985): (a) after the launch of Sputnik, the federal government spent millions on sponsoring school counselors;
and (b) the demand for and attention to elementary counselors in schools. Additionally in the 1970s, less students attended school due to the recession, which prompted school closures, elimination of school counselor positions, and with the closure of schools, many pupils had to start seeking therapy from local organizations (Baker, 2001).

Moving forward, in 2001, No Child Left Behind established accountability in school counseling through the documentation of work outcomes (Carey, 2005), and through the development of the ASCA National Model as an administrative tool for school counselors (Carey, 2005). The ASCA National Model and No Child Left Behind Act have helped school counselors form school counseling programs that are comprehensive for all students and focus on social emotional learning, college and career programming, and helps position the school counselor to be an advocate for all students (ASCA, 2019). The section below is composed of the following elements: (a) The effect of school counseling on students' academic performance; and (b) Tennessee's high school graduation rates and factors influencing pupils' chances of graduating.

**Ambiguity in the Roles of a School Counselor**

Student success is significantly influenced by school counselor ratios and the responsibilities of a counselor (ASCA, 2019). The people working with or supervising the duties of a school counselor frequently are uninformed to what the responsibilities of a school counselor are or how they were prepared for the position (Carey et al., 2012). This lack of understanding can frequently result in overworked counselors, a lack of preventative services in the counseling program, low levels of job satisfaction, and how the profession is seen by others in the school building (Carey, 2005). Also, school counselors may have to deal with an outdated counseling model or plan within that school or district, which might not be the greatest method
to meet all students' needs and deliver services (Camelford et al., 2017). A school counseling program's main objective is often to better serve and satisfy the needs of students (Brasfield et al., 2021; Carey et al., 2012; Hughey et al., 1993). Within a district, there is a lot of variation on how this objective can be achieved, particularly in student services (Carey et al., 2012). The school counselor must strive as much as possible to devote as close to 80% of their weekly time to direct student services and tier I supports that have a significant positive influence on students' academic development both inside and outside of the classroom (ASCA, 2019). There are only so many hours in the day, and because school counselors also have other responsibilities outside of their job description, they may not be able to devote the whole 80% of their time to direct student services (Brasfield et al., 2021).

**School Counseling Ratios and Their Impact on Student Achievement**

High caseloads and large counselor to student ratios have been linked to poorer student outcomes (Brasfield et al., 2021; Carey et al., 2012; Kearney et al. 2021; Reback, 2016). However, the 1:250 ratio guidance created by ASCA was not empirically developed; instead, it has only been supported by opinions dating back to the Hoyt (1955) paper (Kearney et al. 2021). Lower ratios are centered on the theory that the greater the number of students a counselor can assist, the greater the overall influence on student development (Kearney et al., 2021). This approach appears reasonable, but why is a counselor to student ratio of 1:250 the best one for assisting students in achieving success and progress within educational settings? Based off a study done by Poynton & Lapan (2017), it is obvious that there is a large cost associated with having schools hire sufficient school counselors to reduce school counselor to student ratios to the point where every student benefits from more individualized counseling services (Poynton & Lapan, 2017). This finding is consistent with a previous study by Lapan conducted twenty years
earlier showing that students’ academic progress is directly related to the caliber of services and supports provided by a school which includes school counselor ratios (Lapan et al., 1997). Numerous resources are available in the research on school counselor ratios in relation to low-income students' rates of enrollment at four-year colleges (Ohrtman et al., 2016). However, there is still much to research and understand about how students perform after they graduate from high school (Ohrtman, et al, 2016). Future research needs to start focusing on the importance of school characteristics and resources rather than focusing on counseling ratios and student numbers to close this current gap (Kearney et al., 2021).

This finding on focusing on school characteristics, instead of counselor ratios, is intriguing because based off ASCA’s National Model, college and career counseling takes about a third of a high school counselor's time each week (Lapan et al., 2012). It has been demonstrated that college preparation can predict course selection, college attendance, and academic success (Eccles et al., 2004). A recent study by Brasfield et al. (2021), found that only 54% of high school counselors surveyed spent the recommended 80% of their time providing direct services to students, and within this same pool of counselors only 32% reported that they did not follow the 80% guideline (Brasfield et al., 2021). When counselors follow this recommended 80% guideline, there has been shown a strong positive association (rpb = .413, p = .019) between individual student planning and direct counselor related services (Brasfield et al., 2021) while most of the other reported time allocations by high school counselors in the student were found to be nonsignificant (Brasfield et al., 2021). According to research on college preparation, counselors can develop meaningful relationships with students in a 1:250 ratio, which encourages them to pursue further education and other postsecondary options (Lapan et al., 2012). In a study conducted by Bryan et al. (2021) found that when school counselors spent
50% or less of their time on college readiness, students were more likely to express uncertainty (Bryan et al., 2021). School counselors must build relationships by offering direct services, but it is also important for them to comprehend the role of achievement exams and their purpose and structure. Achievement test results have been explored regarding school counseling relationships and whether they affect students' test-taking performance. A recent study by Kearney et al. (2021) found that achievement assessments like the ACT cannot assess a school counselor's effectiveness.

**Student Characteristics**

Student achievement in past studies has focused on school counseling ratios and school characteristics rather than student characteristics (Kearney et al., 2021). Statewide evaluation and testing programs are created to insure positive outcomes for students (Carey et al., 2010b). The findings in these previous studies around school counseling programs and positive student outcomes found that the results were based off student self-report rather than objective measures of achievement (Carey et al., 2010b). Therefore, the need to consider student characteristics in addition to school achievements is key to understanding the impact graduation rates have on objective measures of school achievement (Carey et al., 2010b).

Higher rates of school suspension and dropout are linked to both the school poverty and school minority variables, according to a study by Ashford-Hightower (2018). The percentage of minority students and the percentage of students receiving free or reduced lunches are inversely correlated with the school's graduation and attendance rates (Ashford-Hightower, 2018). Effectively addressing the issues with student achievement within these student characteristics requires identifying school-level factors that affect graduation, suspension, dropout, and attendance rates (Ashford-Hightower, 2018). In addition, legislative measures such
as the Individuals with Disabilities Act (IDEA) and the No Child Left Behind (NCLB) Act require that states establish accountability frameworks that monitor the academic advancement of various student subgroups, particularly those with disabilities (Dragoo, 2017). Student absenteeism was also found to influence a student’s success in school (Demir et al, 2015). It was discovered that a student's dedication to their studies, the school's atmosphere, and their family's control were the fundamentals of absenteeism in students (Demir, 2015). These legislative measures (Dragoo, 2017) and correlations (Ashford-Hightower, 2018) are important to note when looking at student characteristics and their effect on high school graduation rate. In a recent study Burke (2021) looked specifically at student characteristics on the Tennessee State Report Card and how those student characteristics affected achievement in English Language Arts and Math Achievement on the on the Tennessee Comprehensive Assessment Program (TCAP) within one school district within Shelby County, Tennessee (Burke, 2021). In this study, Burke (2021), found that the student characteristics of percentage of students with a disability, percentage of students from non-economically disadvantaged areas, and percentage of non-white students played a significant role in a student’s success on the TCAP English Language Arts and Math Achievement tests (Burke, 2021). In Math Achievement on the TCAP test in this district, the percentage of non-white students was found to be the most significant predictor of Math scores followed by percentage of students with disabilities within the model explaining 1.8% of the variability within math scores (Burke, 2021). Within this same district, regarding English Language Arts on the TCAP, the standardized coefficients showed how the percentage of non-white students was the most significant predictor of ELA scores followed by percentage of non-economically disadvantaged students and percentage of students with disabilities (Burke, 2021). Burke (2021) found that 49% of the variation in the SQRT ROOT of the percentage of students
who had proficient or above ratings were found to have these particular student characteristics which were found to be significant to achievement on the TCAP test (Burke, 2021). Considering these findings, the of percentage of non-white students, percentage of non-economically disadvantaged students, and percentage of students with disabilities should be considered when looking at graduation rates and its effect on student and school outcomes (Ashford-Hightower, 2018; Burke, 2021; Demir et al., 2015; Dragoo, 2017).

**ACT Testing**

According to its website, the ACT "inspires students to perform to the best of their abilities" (ACT, n.d.). ACT results should therefore demonstrate how prepared pupils are for college and be able to demonstrate the amount of learning or growth that has taken place during a student's academic career (ACT, n.d.). Bettinger et al. (2013) used data in their study from the Ohio Board of Regents and looked specifically at how each of the four ACT subtests of reading, science, math, and English predict college success and readiness (Bettinger et al., 2013). This study discovered how reading and science ACT scores have a far weaker correlation with college performance especially first year GPA than did mathematics and English scores (Bettinger et al., 2013). Bettinger et al. (2013) found that reading and science scores had little predictive value for college prospects after controlling for English and math scores. This was based on correlations they conducted with over 25,000 students in Ohio (Bettinger et al., 2013). The findings from Bettinger et al. (2013) highlight how the ACT may not be as effective in predicting college success as once thought. Given that most schools and universities have now enacted test flexible policies in response to the COVID-19 pandemic (Rubin et al., 2019), the ACT's position is noteworthy. Thanks to these adaptable policies created by colleges and universities, students can now be admitted based on a comprehensive evaluation that excludes achievement test results. As
a result, one can now start to doubt the validity of ACT test results and if they actually "motivate students to work to the best of their ability" (ACT, n.d.). Even though school counseling ratios have not been linked to ACT success in a prior study (Lapan et al., 1997), they have demonstrated a link between high school students' positive outlooks and readiness (Lapan et al., 2012). Velez (2016), in conjunction with the National Association for College Admissions Counseling (NACAC), looked at early student-counselor contact and discovered that students who met with a counselor for college information which includes ACT preparation in ninth grade had a 27% higher chance of meeting with a counselor for college admissions counseling in twelfth grade, an important step in the college-going process (Velez, 2016). According to Bryan et al. (2021), school counselors who spent less of their time on college preparation and resources lead to students more likely to enroll in postsecondary opportunities (Bryan et al., 2021). These recent studies by Velez (2016) and Bryan et al., (2021) highlight how important a school counselors time and resources effect high school students’ college preparation in which ACT resources and workshops are a key piece to students being ready for college (ASCA, 2019, Bryan et al., 2021, Velez 2016). Therefore, if the resources and accessibility of ACT preparation is missing or not offered at a particular high school, a student’s college and career readiness will be affected (ASCA, 2019, Bryan et al., 2021, Velez 2016).

**ASCA National Model**

The American School Counseling Association (ASCA) established the 1:250 school counselor to student ratio benchmark standard that there should be one counselor for every 250 pupils (ASCA, 2019). The structure developed by ASCA to help counselors develop an extensive data-driven school counseling program catering to all students' needs is known as the ASCA National Model (ASCA, 2019). The ASCA National Model's objective is to give school
counselors across the country a standardized approach to use when implementing and redesigning the programs in their schools, districts, and states. However, it also gives principals and other administrators a framework to use and refer to when evaluating school counselors (ASCA, 2019). The ASCA National Model also establishes expectations for the job responsibilities of school counselors and specifies that 80% of a counselor's weekly time should be spent delivering direct student services to children (ASCA, 2019):

Comprehensive school counseling programs according to ASCA, consists of four primary components and objectives that include: (1) define the areas focusing on student outcomes, competencies, and learning for students; (2) create and, build, and manage plans of action in the areas of assessment and evaluation; (3) provide and deliver beneficial services to all students and stakeholders; and (4) assess and improve the impact of the school counselor through the school counseling program (p.17-18).

Multiple models and revisions of the ASCA National Model have been released with the latest update coming out in 2019. In this update, ASCA revised the roles of a school counselor to better fit the needs of all students they may or may not serve currently (Hatch et al., 2008). As each update comes out, the success of the ASCA Model depends on the willingness of the school counselor to learn and implement new components and skills to further develop themselves and the programs they provide at their school (Hatch et al., 2008). Since policies and expectations regarding the services students need or want from the school counseling program change over time, the effectiveness of the ASCA National Model is dependent on the school counselor and their ability to remain involved and informed of changes to the profession, as well as being able to adapt and learn new skills to succeed as a school counselor (ASCA, 2019). Expectations and components of a school counseling program are important, but the ratio of school counselor to
students may alter the quality and variety of programs offered (Kearney et al., 2021). According to the ASCA National Model, a student to counselor ratio of 1:250 is ideal (ASCA, 2019). However, there is no evidence to substantiate this or show that this ratio is efficient (Kearney et al., 2021). When Kearney et al., (2021) went back to investigate where the 1:250 ratio originated, all evidence pointed to Hoyt (1955), who referred to his three assumptions which are: (a) that the school counselor be professionally trained, (b) teachers and administrators of the school participate and support the guidance program of the school, and (c) that the guidance program at the school is functioning in a normal manner without any beginning hiccups (Hoyt, 1955). Spending time with students is a vital principle, and counselors cannot function in isolation (Hoyt, 1955). The foundation of ASCA's 1:250 is built on the idea that a counselor may have a greater positive impact by seeing more students (Kearney et al., 2021). According to Kearney et al. (2021), student outcomes' standard deviation changes by 6% for every one standard deviation that school counselor ratios alter, and this impact was found to be greatest with attendance (10% of a standard deviation change), discipline (13% of a standard deviation change), and high school graduation (15% of a standard deviation change) (Kearney et al., 2021). This study by Kearney et al., (2021), was constrained by the fact that it focused exclusively on previous studies that mentioned (a) students and counselors in a K-12 setting, (b) discussed school counselor ratios, and (c) further studied the relationship school counseling ratios had on both student level achievement and behavioral outcomes (Kearney et al., 2021). Within the 16 studies (12 involving high school counselors) further evaluated by Kearney et al., (2021), there was a significant and larger impact on student behavior and attendance than on student outcomes (Kearney et al., 2021). According to Kearney et al. (2021), there was a marginally favorable impact on student success outcomes. Little clarity has been offered by the conflicting information in the literature
on school counselor ratios (Kearney et al., 2021). The ASCA National Model may be useful in offering direction for a comprehensive school counseling program, however it offers little guidance or evidence in favor of the 1:250 school counselor to student ratio (ASCA, 2019).

**TN Policy 5.103**

The State of Tennessee adopted policy 5.103 in December 2015, outlining the components and requirements of a comprehensive school counseling program (Tennessee State Board of Education [TNSBE], 2017a). According to this regulation, all schools and districts in Tennessee are expected to have a school counseling program (TNSBE, 2017). In its conception, Tennessee Policy 5.103 used the 3rd edition of the ASCA Nation Model to make sure every School Counseling program within Tennessee produces high quality results and learning (TNSBE, 2017a). Tennessee Policy 5.103 includes descriptions on: (a) Tennessee School Counseling Standards, (b) Program Foundation, and (c) Program Expectations (TNSBE, 2017a). The policy outlines certain requirements that must be met to develop a strong school counseling program in the very first section of program components. Some of the examples highlighted in this section include:

- Identifying and Developing mission statements and goals of the program.
- Analyzing data to set measurable goals.
- Incorporating the ASCA National Model into your schools’ specific program (TNSBE, 2017a).

TN Policy 5.103 specifically encourages school counselors, district, and school officials to develop a school counseling program that is effectively managed, delivers services to students in the appropriate format based on program needs, and undergoes ongoing evaluation to ensure that the program's objectives are being met (TNSBE, 2017a).
After the components of the school counseling program are developed, it is crucial to establish program expectations and identify the resources required for the program's success. These elements include, among others, time, facilities, staffing, and budget (TNSBE, 2017a). The effectiveness of the school counseling program will ultimately depend on how successfully it can deliver much needed services and supports to students inside the school building. All these elements, as well as others, are crucial to its success (TNSBE, 2017a).

The final section of TN Policy 5.103 outlines the specific counseling criteria for Tennessee schools, which are divided into three categories: college and career preparedness, social emotional development, and academic development (TNSBE, 2017a). Overall, TN Policy 5.103 has a significant impact on school counseling initiatives, the role of school counselors in Tennessee, and state expectations, all of which have an impact on graduation rates and students' achievement both during and after their primary education (Lancaster et al., 2021). Because of the standards it establishes for all school counseling programs in Tennessee, Policy 5.103 must be examined and highlighted to properly review the literature on school counseling in Tennessee (TNSBE, 2017a).

**Data Driven Decision Making in Tennessee**

Making data-driven decisions is a crucial component of a student's development in Tennessee (TNDOE, 2018a). Schools are now more accountable than ever for student growth because of MTSS, Response to Intervention (RTI2), Tennessee Succeeds (the state's strategic plan for student success), a Comprehensive School Counseling Program, and the Tennessee State Report Card (TNDOE, 2018b). This section describes the numerous ways that districts and schools are held accountable, how this accountability is measured, and how all of this affects how a school counselor in Tennessee approaches and aids a student.
While developing and implementing a school counseling program in Tennessee, the following documents or organizations are taken into consideration: (1) Tennessee Department of Education (TNDOE), (2) the ASCA National Model, and (3) the state's strategic plan for student success Tennessee Succeeds goals (TNDOE, 2018b). A collaborative effort between all parties within and outside the classroom is required for a school counseling program to be deemed effective in Tennessee, with the goal of promoting overall student growth and achievement (TNDOE, 2018a). Four parts make up this cooperative effort: the basis, management, services delivery, and accountability (TNDOE, 2018b). These four components help ensure success of a comprehensive school consoling program in Tennessee and are guided by the following requirements: (a) all students having access to a quality education; (b) identifies the key areas students need to achieve academic success, college and career readiness, and social and emotional development; (c) data driven; and (d) delivered to all students by a trained and properly educated school counselor (TNDOE, 2018b).

These requirements are met by a cooperative team effort between the respective school and district departments and an educational team made up of counselors, teachers, and administrators (TNDOE, 2018a). School counselors must incorporate the guiding principles of systematic change, leadership, cooperation, and advocacy into how the program will be provided to students and stakeholders within the school in order to ensure effective achievement for children (TNDOE, 2018a). A school counselor must understand and start the vital work with other stakeholders in accomplishing and creating goals for their complete school counseling program as they acquire and develop these crucial leadership qualities (TNDOE, 2018b).

Within data driven decision making in Tennessee, the Tennessee Succeeds Act outlined and helped to develop the requirements set forth by the Tennessee Department of Education for
developing, writing, and implementing a comprehensive school program in Tennessee, rather than offering explicit instructions on how to write or build a school counseling plan (TNSBE, 2017b). Policy 5.103 provides information and specifics on what constitutes a Comprehensive School Counseling Program in Tennessee (TNSBE, 2017b). The State of Tennessee proposes under this regulation the proper school counselor to student ratios necessary to implement an efficient program (TNSBE, 2017b). According to ASCA (2019), these ratios—1:500 for elementary schools (K–6) and 1:350 for secondary schools (K–12)—are much higher than the 1:250 suggested by the ASCA National Model (ASCA, 2019; TNSBE, 2017b). The Basic Education Program (BEP) Formula which is now referred to as Tennessee Investment in Student Achievement (TISA), which calculates the state-recommended ratios, is a funding formula rather than a budgeting formula that gives school administrators flexibility in how to allocate funds (TNSBE, 2017b). For example, they may decide to divert funds from school counselors to other areas of student support inside the school (TNSBE, 2017b). The change from BEP to TISA has increased support for literacy and other affiliated programs in early grades to help students succeed on the TCAP in 3rd grade and beyond (TNDOE, n.d-a). The aforementioned research was the drive behind this study's analysis of the possible influence or relationship between Urban Tennessee school counselors and our dependent variables—graduation rates, average ACT composites, and ready-to-graduate rates. These variables can be found and defined within the Tennessee State Report Card which is the data source driving this study.

The purpose of the Tennessee State Report Card, which is released each year, is to inform Tennessee residents about the performance of their districts and schools in the following areas: (a) academic success, (b) growth, (c) graduation rate, (d) readiness to graduate, (e) financial statistics, (f) staff data, (g) absenteeism data, and (h) progress on English language proficiency
In addition to keeping the public informed, the Tennessee Department of Education hopes that by disseminating this data to interested parties, it will motivate districts and schools to build on their achievements while also emphasizing areas for improvement (TNDOE, n.d.-b). The success of a comprehensive school counseling program within a particular school and/or district is reflected in all these areas on the Tennessee State Report Card.

**Ready 2 Graduate**

The Ready 2 Graduate accountability metric was developed by the State of Tennessee in 2017 as part of the development of Tennessee Succeeds (TNDOE, 2018b) to aid the state in achieving its objectives of graduating students who are prepared for college and careers (TNDOE, 2018b). Every Student Succeeds Act (ESSA) in Tennessee states that The Ready 2 Graduate indicator calculates the proportion of Tennessee high school graduates who met the state’s success criteria to graduate, thus improving their chances of a smooth transition to postsecondary education and/or obtaining good-paying jobs. (TNDOE, 2018b). This indicator's objective is to assess a student's overall educational experience, which goes beyond academic performance (TNDOE, 2018b). By satisfying the following requirements established by the State of Tennessee through the measures of preparedness stated below, also known as Early Postsecondary Opportunities (EPSOs), students will graduate from this well-rounded educational experience college and career ready. The following is a list of EPSOs:

- Advance Placement (AP Coursework)
- Cambridge International Examinations (CIE)
- College Level Examination (CLEP)
- Dual Enrollment
- Industry Certification (IC)
• International Baccalaureate (IB)
• Local and Statewide Dual Credit Opportunities
• Indicators of readiness such as ACT, Scholastic Aptitude Test (SAT), and Armed Services Vocational Aptitude Battery (ASVAB) (TNDOE, 2018b).

These EPSOs are designed to help Tennessee high school students take college courses or earn college credits while still in high school while also being introduced to career options and opportunities aligned with a student’s interest (TNDOE, n.d.-a). EPSOs are intended to make it possible for all high school students in Tennessee to take full advantage of the Tennessee Promise and be prepared to excel, once they graduate from high school, in their careers or in postsecondary education (TNDOE, n.d.-a). The Tennessee Promise is a last dollar scholarship effort that provides extra funds to Tennessee college students to cover the remaining cost of tuition and fees that are not covered by scholarships or Pell Grants (TNDOE, n.d.-a). Ready to Graduate and EPSOs are key factors to consider in reviewing the literature and what predictors contribute to a student graduating from high school in Tennessee (TNDOE, n.d.-a).

**Attendance Rates**

All Tennessee high schools are required to provide yearly reports on chronic absenteeism to their state department of education (DOE) and the United States Department of Education (USDOE) as part of the US and Tennessee ESSA (USDOE, 2016). The goal of gathering this information is to support initiatives to combat chronic absenteeism, which will enable all students in Tennessee and around the country to succeed academically by attending class (USDOE, 2016). According to the USDOE, (2016), approximately 7 million students missed 15 or more days of school during the 2015–2016 academic school year, or around 1 in 6 students nationally (USDOE, 2016). Students of different races and ethnicities experience chronic
Absenteeism at different rates, according to data from 7 million students provided in the USDOE report: *Chronic absenteeism in the Nation's Schools: An Unprecedented Look at a Hidden Educational Crisis* (USDOE, 2016). These various figures demonstrate how American Indian and Pacific Islander children are nearly 50% more likely than white students to miss three weeks of school or more, while black students are 40% more likely and Hispanic students are 17% more likely to do so (USDOE, 2016). The reasons for these high absentee rates among minority students are as varied as the available research suggests, but our review of the literature reveals that many of these factors, which are more prevalent in urban areas of the United States, include poor health, inadequate transportation, and a lack of safety (USDOE, 2016). The USDOE, (2016), identifies three crucial elements to demonstrate how devastating persistent absences are to a student's academic progress. These three factors are: (a) absenteeism prevents students from reaching early educational milestones such as learning how to read and write, (b) attendance rates are a better predictor of likelihood of a student to graduate or drop out than standardized test scores, and (c) absenteeism in school can shape experiences in future adulthood such as poverty, diminished health, and interaction with the criminal justice system (USDOE, 2016). The hope with making this data public is to allow national, state, and local educational officials the opportunity to see what educational supports are needed and missing to help these students who tend to fall into the trend of chronic absenteeism (USDOE, 2016). The purpose of the ESSA is highlighted according to USDOE (2016):

The 2015 federal education law Every Student Succeeds Act (ESSA) empowered every state to create unique statewide accountability systems. In addition to measurements of annual school performance, ESSA requires states to hold schools accountable for one measure of "school quality or student success (SQSS)" (ESSA 2015, 111-31) and 36
states, the District of Columbia, and Puerto Rico submitted plans to the U.S. Department of Education to use chronic absenteeism as one SQSS indicator. ESSA state plans outline strategies to leverage federal funds to improve attendance through teacher training, improving health services, family engagement, and school climate, important levers for increasing school attendance (p. 10).

Therefore, the goal of ASCA is to remove these obstacles and develop tools that enable students to graduate and go on to lead successful lives by understanding and examining the underlying causes and factors of chronic absenteeism under consideration in this study, which will emphasize graduation rates in four of Tennessee's most urban counties (ASCA, 2019).

**Graduation Rates**

Every year, more than a million students fall behind their peers in completing their degrees and 40% of those students are Hispanic or African American (National Center for Education Statistics, 2022). Eighty percent of high school students who fall behind at the beginning of the year will drop out and never graduate, highlighting the one million who fail to obtain their high school diploma each year (Allensworth & Easton, 2007). These figures, in addition to being alarming, also demonstrate the need to lower the number of high school dropouts annually since a high school diploma raises one's standard of living (Legers & Balfanz, 2010). A high school diploma is a big accomplishment in a person's life, but it can be a challenge to obtain by students who are seen as at risk (Schmidt, 2020). When comparing the benefits of graduating from high school to those that drop out, it's crucial to consider not only the individual but also the neighborhood they live in since both are affected (Schmidt, 2020). Dropout and enrollment data does not consider factors other than a student's enrollment status or attendance at school; it simply gives a snapshot of a specific student's enrollment status (Schmidt, 2020).
Collecting and examining enrollment statistics as students advance through the grades each school year may provide the opportunity to provide interventions to reduce dropout and graduation rates (Schmidt, 2020). The National Governors Association (NGA) pledged to all 50 states to begin releasing graduation rates data in 2005 that includes a formula that tracks students' enrollment status over time and enables data adjustments for students who transfer in and out of a specific school system (NGA, 2010). Even while data collection has improved, attendance, behavior, and academic achievement remain significant predictors of whether a student will graduate or drop out (Legters & Balfanz, 2010). By examining ways to improve environmental elements that initially contribute to the issue, systemic interventions can help with graduation and the student dropout rate (Legters & Balfanz, 2010). Establishing student supports that encourage them to complete high school, such as the following, is one approach to do this: (a) early warning systems (Legters & Balfanz, 2010); (b) attendance, behavior, and course performance-focused responses (Epstein, 2019); (c) increasing the number of skilled adults to provide supports; (d) family involvement; and (e) community-wide comparisons in the areas of health care, housing, childcare, and social services (Legters & Balfanz, 2010). The literature includes several services and supports that can help students graduate, but there are undoubtedly many more in today's culture that are currently underused. The goal of this study is to examine the graduation rates in Tennessee's four most urban counties to determine what factors influence graduation and to determine whether these factors may be used to pinpoint potential future initiatives that could help raise the country's graduation rate.

**US Graduation Rates**

The US Department of Education and its fifty state counterparts in the country determine the high school graduation rates on a state and national basis. The National Center for
Educational Statistics produces research every year at The United States Department of Education (USDOE) that examines trends in high school dropout and completion rates (McFarland, 2019). In order to give a comprehensive view of the dropout and completion rates of high school students in the United States, the DOE in this report examines five specific rates, including: (a) Event Dropout Rate, (b) Status Dropout Rate, (c) Status Completion Rate, (d) Adjusted Cohort Graduation Rate, and (e) Averaged Freshmen Graduation Rate, using data from the US Census Population Survey (CPS), the American Community Survey (ACS), state department of education data, and Common Core data (McFarland, 2019).

The Event Dropout Rate is the first rate that DOE discusses. The percentage of 15- to 24-year-olds who drop out of high school between the start of one year and the start of the following year without earning a high school diploma is known as the event dropout rate (McFarland, 2019). According to CPS data, this rate between October 2016 and October 2017 was 4.7%, or 523,000 students (McFarland, 2019). The second rate in this report is the Status Dropout Rate, which uses ACS and CPS data to show how many 16- to 24-year-olds are not enrolled in school and do not have a diploma or alternative credential like the GED (McFarland, 2019). Regardless of whether they have ever attended school, this percentage includes all dropouts in the 16–24 age group. The status dropout rate for 2017 was 6.0% (McFarland, 2019). The Status Completion Rate, which is the third rate emphasized in this study, uses CPS data to estimate the number of 18 to 24-year-olds who are not enrolled in high school but who have earned a high school diploma or an alternative credential like the GED (McFarland, 2019). According to the DOE study, this rate explicitly examines the data related GED and diploma completion replies on the CPS survey and is not the reverse of the dropout rate. This rate was 93.3% in 2017 (McFarland, 2019). The Adjusted Cohort Graduation Rate is the fourth indicator on the DOE Report and is
the only one that uses information provided to the DOE by each state department of education rather than ACS or CPS data (McFarland, 2019). The Adjusted Cohort Graduation Rate specifically provides data on the proportion of American public high school students (9th graders who complete in four years) who graduate on time. This rate is derived using enrollment data from public schools and diploma counts provided by each state department of education (McFarland, 2019). The Averaged Freshmen Graduation Rate, which uses Common Core Data to look at the percentage of public high school students who graduate in four years with a regular diploma after starting in ninth grade (McFarland, 2019), is the last indicator provided on this DOE Report regarding High School Dropout and Completion Rates. The Common Core Metrix's average enrollment statistics and diploma counts are used to calculate this rate (McFarland, 2019). The Average Freshmen Graduation Rate nationwide in 2017 was 82% (McFarland, 2019). School Counselors and School Administrators can now highlight and examine particular trends in the data that the DOE utilizes to comprehend and analyze high school graduation rates each year by looking at this report and the data it offers and see how the graduation rate was or could be impacted from COVID-19 (Rubin et al., 2019).

**TN Graduation Rates**

For the purpose of this study, Tennessee Graduation Rates will be based off the federal law that requires students to count in graduation rate calculations based on the year in which they started the 9th grade (TNDOE, 2019). Graduation Rates for the State of Tennessee follow the federal law and use the DOE four-year adjusted cohort formula which according to TNDOE, (2019):

\[
\text{Graduation Rate} = \frac{\text{Number of graduates included in cohort}}{\text{Number included in graduating cohort}}
\]
The number of graduates is defined as the number of students who earn a regular diploma including those students earning an alternate academic diploma within four years and a summer of entering grade 9 for the first time. The number in the graduating cohort is defined as the number of students entering grade 9 for the first time four years prior, removing withdrawn students and adding in any students who join that cohort in later years (e.g., a student who enters grade 10 in a Tennessee public school for the first time in the fall of 2017 would be placed into the 2017 cohort, expected to graduate in spring 2021 (TNDOE, 2019. p. 20).

The TNDOE publishes the Tennessee State Report Card, after each school district in Tennessee compiles it using the data from the TNDOE Graduation Cohort Protocol Report stated above. After the data is published and received by the TNDOE, it is then forwarded to the U.S. Department of Education. The Graduation Rates from the Tennessee State Report Card used in this study determined whether rates across the state have increased or decreased, how the Graduation Rates in the four urban counties may compare to the statewide data, and how other variables like school counseling ratios affect graduation.

**Opportunity Gap**

Disparities in education and socioeconomic status have been found to be highly correlated to skin color, social class, and language (Carter, 2013). The longer this practice continues to happen in our educational system, the more adverse effects compound for those students with lower socioeconomic status making it harder for subsequent generations of these students to catch up with their high economic status peers (Carter, 2013). This educational gap associated with social class and skin color has a dramatic effect on a student’s chances to earn a living and be successful after high school (Carter, 2013). Kentucky Advisory Commission
(2003) found that students who qualified for free or reduced lunch were statistically 20% behind students who did not qualify for free or reduced lunch in the areas of reading, writing, and mathematics on the Kentucky State Achievement Tests (USCOCR, 2007). The current discussions many school districts and officials have about the achievement gap focus on measured outcome such as test scores and graduation rates but do not consider student characteristics and factors that may relate to these results such as socioeconomic status and ethnicity (Carter, 2013). The focus on these student characteristics that affect the achievement gap is referred to as the opportunity gap and is expansive across racial and social class and continues to rise in America’s Education System today (Carter, 2013). This reality is eye opening, and many children of color are denied valuable educational resources of the latest textbooks, tutoring, and postsecondary resources that will influence their ability to live and be successful after high school (Carter, 2013). If students are not provided with equal opportunities in our educational system, they are more likely to end up in poverty, pay less taxes to society, and engage in criminal activity (Carter, 2013). Thus, to help close the opportunity gap, educators must provide resources that make it easier for students of color and those from lower socioeconomic backgrounds to get an adequate education that gives them the tools and support they need to succeed (Carter, 2013). By focusing and identifying the opportunity gaps that currently exist in our educational system, we will not only help create a better society but also help close the achievement gap that exists between America and other countries around the world (Carter, 2013).

Why Urban Schools?

A population is classified as rural or urban by the United States Census Bureau based on its population density, which is calculated at the block and tract level during the census count
(TACIR, 2016). In a recent study by Wels & Swain (2020), they sought to redefine urban education by conducting a review of the literature on what defines an urban district or an urban area in education (Welsh & Swain, 2020). As Welsh & Swain (2020) looked through the literature in their study, two key themes come to light: (a) urban education is defined in a variety of ways, and (b) urban education includes deficit viewpoints (Welsh & Swain, 2020). Within these two themes, Welsh & Swain (2020) found that urban education is often categorized under the following six headings: (a) population/location/geography; (b) enrollment; (c) demographic makeup of students; (d) resources in schools; (e) inequities and educational inequality; and (f) social and economic backdrop (Welsh & Swain, 2020). So based off this information by Welsh & Swain (2020), it is hard to define what exactly is urban education, and typically it will revolve around complexities and discrimination that have more to do with what the area within a city has had to deal or overcome, more than their geographic location to a city (Welsh & Swain, 2020). This information is key to consider urban areas in Tennessee were investigated in this study.

According to the Tennessee Advisory Commission on Intergovernmental Relations 2016 Report, just eight of Tennessee's 95 counties have a population that is at least 75 percent urban. Following is a list of these eight counties, from most urban to least urban: Shelby, Davidson, Hamilton, Knox, Rutherford, Williamson, Montgomery, and Hamblen (TACIR, 2016). The Tennessee Advisory Commission on Intergovernmental Relations' 2016 Report found that four counties stood out as being more urban than the other eight, even though eight counties were classified as being two-thirds urban: Shelby (2.8% rural), Davidson (3.4% rural), Hamilton (10% rural), and Knox (10.9% rural) (TACIR, 2016). Based on this data, TACIR (2016) determined that Knox County's difference from Rutherford County (17% rural) revealed a significant enough difference to limit the study to only the four counties of Shelby, Davidson, Hamilton, and Knox.
In this study, these four counties served as the sample of schools for analyzing the graduation rates of urban areas in Tennessee because these four counties were classified as the most urban in Tennessee (TACIR, 2016). Milner (2010) in *Culture, Curriculum, and Identity in Education* brought attention to the opportunity gap that occurs in urban schools across the country. This opportunity gap was reviewed and characterized as a gap that encompasses discrepancies in the present educational system related to teacher quality, teacher preparation, access to technology, and health care that have produced deeply ingrained societal prejudices among children of color (Milner, 2010). Urban locations are impacted by a number of issues, including the opportunity gap. Milner (2010) identified as well that the traditional segregated schools that are created in urban areas are for low-income African American and Latinx pupils (Milner, 2010). There is a need for further research and information on Tennessee's urban neighborhoods, particularly regarding graduation rates, as evidenced by this opportunity gap and the development of segregated schools inside urban areas. According to information from the Tennessee State Report Card on Graduation Rates by District under Black/Hispanic/Native American for 2020–2021, Shelby County Schools (SCS), with the lowest graduation rate of minority kids was 79% (SCS), followed by Davidson County, with 80.5%, Hamilton County, with 82.1%, and Knox, with 86.8% (TNDOE, n.d.-b). When this study looked at Shelby County, Tennessee specifically, Memphis Shelby County Schools (MSCS) had the lowest graduation rate in the county at 79% compared to the municipality school districts which were relatively higher with minority student graduation rates in Collierville at 89.7%, Millington at 91.8%, Arlington at 94.9%, Germantown at 97.2%, and Bartlett at 98.3%. Given that minority students already experience biases because of the opportunity gap (Milner, 2010), and segregated schools, it is critical to examine graduation rates in these four most urban counties of Tennessee as well as the
potential effects that ACT scores, Ready 2 Graduate, attendance, and school counselor ratios may have on these students (Milner, 2010). This study used a hierarchal regression to see if an influence or effect exists with Graduation rates, school counseling ratios, attendance rates, average ACT composites, and ready to graduate rates. Results of this study should help to influence future college and career planning resources and supports needed within urban areas of Tennessee.
Chapter 3 Methodology

Research Design

This study employed a retrospective research design to determine whether graduation rates in the populous Tennessee counties of Hamilton, Knox, Davidson, and Shelby were influenced by the four variables of school counselor ratios, attendance, Ready 2 Graduate, and ACT scores. This strategy was adopted for this study because it used existing data recorded for reasons other than the one being researched (Hess, 2004). Using a retrospective design can help provide focus and clarity to research questions, sample size, and feasibility issues within a study (Hess, 2004). This study implemented a retrospective correlational research design into this study to further look at the relationship between graduation rates and school counselor ratios, ACT composite scores, ready to graduate rates, and attendance rates within Tennessee’s four most urban counties.

Research Questions

The study examined the following research questions:

(1) To what extent do school counselor ratios relate to graduation rates within four urban counties in Tennessee when taking student demographics into account?

(2) Are graduation rates related to average ACT composite scores of students within four urban counties in Tennessee when taking student demographics into account?

(3) What relationship do graduation rates have if any, with ready to graduate rates on high school students within four urban counties in Tennessee when taking student demographics into account?
(4) What relationship do graduation rates have if any, with student attendance on high school students within four urban counties in Tennessee when taking student demographics into account?

**Data Source**

All data sets were downloaded and exported into an excel file from the TNDOE website using the 2021-2022 Tennessee State Report card data (TNDOE, n.d.-b). The variables identified to be analyzed from the 2021-2022 Tennessee State Report Card were as follows: (a) Graduation Rates, (b) Ready to Graduate Rates, (c) Chronic Absenteeism Rates (Attendance), (d) ACT Scores, and (e) School Counselor to Student Ratios. To ensure accurate data regarding the reported number of school counselors, the number was verified through phone calls, emails, and school websites, in addition to the Tennessee State Report Card for these 115 high schools identified within this study.

**Inclusion/Exclusion Criteria**

This study analyzed and used publicly available data that is collected and published by the Tennessee Department of Education annually as the Tennessee State Report Card. Data from the most recent school year, 2021-2022 is now available and was released in November 2022. Schools included in this study include 115 high schools that serve primarily grades 9-12 and are listed on the 2021-2022 Tennessee State Report Card that are in the counties of Davidson (Nashville), Hamilton (Chattanooga), Knox (Knoxville), and Shelby (Memphis). High schools that were excluded from this study include those not listed on the Tennessee 2021-2022 State Report card within Davidson, Hamilton, Knox, and Shelby counties, private schools located within these four counties, or any schools that may have just opened or closed during the 2012-
Analysis Plan

Regression analysis was used to show the influence or correlations between the variables. Regression is a potent tool that can explain and forecast actual events such as graduation rates (Casson et al., 2014). Regression can also be used to offer evidence of whether one variable does, in fact, influence another (Casson et al., 2014). Graduation rates were used as the independent variable in this study's linear regression, which explored the relationship of the four dependent variables (school counselor ratios, attendance, Ready 2 Graduate, and ACT scores). Shelby County was used as the reference for the categorical indicator variables of percentage of students with a disability, percentage of students from non-economically disadvantaged areas, and percentage of non-white students (Burke, 2021). This study demonstrated if there was any relationship between the factors and what impact, if any, they had on graduation rates for the high schools included in the study by performing a linear regression analysis on the variables (Casson et al., 2014).

The data was cleaned and structured to include the pertinent details required for the independent and dependent variables after being exported from the excel file. After the data was examined, cleaned, and organized, it was imported into SPSS to calculate descriptive statistics such as means, standard deviations, and the minimum and maximum. Once in SPSS, a hierarchical linear regression analysis was used for the analysis.

First, graduation rates were entered from all the 115 high schools in Tennessee's four urban counties to conduct a hierarchical linear regression. Next, ACT scores, attendance rates, Ready 2 Graduate Rates, and school counseling ratios were entered. All assumptions were
verified and met once all the data was entered and an output is obtained on SPSS, which will be highlighted further in the study's outcomes section.

Since this study used a regression analysis, it was important to make sure that the following five conditions are true to carry out the analysis correctly: (a) a linear relationship between the variables, (b) a lack of multicollinearity between the predictor variables, (c) independent observations, (d) homoscedasticity, and (e) normality of residuals. Assumption 1 (linearity) was checked by plotting the outcome variable against the predictor variable in a scatter plot. Assumption 2 (multicollinearity) was checked by looking at the variance inflation factor to see how correlated each predictor variable is with the other. Assumption 3 (independent observations) was explored via the Durbin Watson Test. Assumption 4 (homoscedasticity) was inspected by looking at the scattered plot of residuals vs. predicted values. Assumption 5 (normality of residuals) was verified by checking differences between the observed value of the dependent variable and the predicted value. If any of these assumptions are not met, there were data transformations or other procedures that were utilized if an assumption was violated (Casson et al., 2014).

In conducting a hierarchical linear regression, the first step was entering the student demographic variables chosen to be inputted based on a previous study conducted by Burke (2021) called “School Counselors and Academic Outcomes among Secondary Students in one Southeastern District” in which she found that the three student characteristics: percentage of students with a disability, percentage of students from non-economically disadvantaged areas, and percentage of non-white students played a significant role in English Language Arts and Math Achievement on the Tennessee Comprehensive Assessment Program (TCAP) (Burke, 2021). Graduation rates for Shelby, Davidson, Knox, and Hamilton counties were taken from the
Tennessee State Report Card in the second phase. The R-squared was evaluated using Cohen’s (1988) Coefficient of Determination ($R^2$) for linear regression as an indicator of practical significance/effect size within both models used in this study. The recommendation to use hierarchical regression analysis came from a study by the National Leadership Cadre (2007), which used this method to explore the characteristics of school counseling to academic and student outcomes within schools and districts. In this study, the National Leadership Cadre focused on student characteristics in educational outcomes while looking at key demographic differences in schools (National Leadership Cadre, 2007). This recommendation by the National Leadership Cadre (2007), was also implemented by Carey et. al (2010a, 2010b) in their Utah and Nebraska statewide studies to explore the possible contributions of school counseling program implementation in relation to educational outcomes for students (Carey et. al, 2010a).

**Model 1: Student Demographics Model**

\[
\text{graduation rate} = b_0 + b_1*\text{Davidson} + b_2*\text{Hamilton} + b_3*\text{Knox} + \% \text{of non-white students} + \% \text{ of students with disabilities} + \% \text{ of non-economically disadvantaged students}
\]

**Model 2: Answers the Four Research Questions of this Study**

Model 2a: graduation rate = $b_0 + b_1*\text{Davidson} + b_2*\text{Hamilton} + b_3*\text{Knox} + \text{(student variable)} + b_4*\text{School Counselor Ratio}$

Model 2b: graduation rate = $b_0 + b_1*\text{Davidson} + b_2*\text{Hamilton} + b_3*\text{Knox} + \text{(student variable)} + b_4*\text{avgACTscore}$

Model 2c: graduation rate = $b_0 + b_1*\text{Davidson} + b_2*\text{Hamilton} + b_3*\text{Knox} + \text{(student variable)} + b_4*\text{Ready to Graduate}$

Model 2d: graduation rate = $b_0 + b_1*\text{Davidson} + b_2*\text{Hamilton} + b_3*\text{Knox} + \text{(student variable)} + b_4*\text{attendance rates}$
Missing Data

Since the Tennessee State Report Card only reports the data submitted or recorded for a particular school or district, there may be inaccurate or missing information in certain areas of the state report card. In order to fill in any gaps in the highlighted areas where data was either missing or incorrect, districts were contacted to obtain any missing variables or data (See Appendix B, Appendix C, and Appendix D). Any schools that were open during the 2021–2022 academic year but are not currently open were also included.

Human Subject Issues

In this study, no problems were anticipated involving human participants because the data is publicly available on the Tennessee Department of Education's website (TNDOE, n.d.-b), and no direct contact was made with school children or counselors. Although there are few concerns about human subjects’ research in this study, an Institutional Review Board (IRB) protocol was submitted prior to data analysis. The IRB determined that this study was not human subjects research, and it was acceptable to proceed.
Chapter 4 Results

This chapter presents statistical analysis results for each research question in this study. First the examination of regression assumptions is discussed, followed by a discussion of the regression model results for each research question.

Examination of Regression Assumptions

All variables underwent an analysis of standardized residuals to identify any potential outliers before hypothesis testing within hierarchical regression analysis. Based on the student demographics model, one school's graduation rate deviated from the average by six standard deviations (Std. Residual > -6). This school was eliminated from further investigation because the data on the dependent variables' graduation rates were distorted. Once the outlier was eliminated, the assumptions of a linear relationship between the variables, a lack of multicollinearity between the predictor variables, independent observations, homoscedasticity, and normality of residuals was checked for each regression model. According to the histograms of standardized residuals, the graduation rate data needed to be transformed using a natural log transformation. After the transformation, the histogram and P-Plot of standardized residuals both indicated that the residuals were sufficiently normally distributed to move forward with the hypothesis testing (see Figure 1). The data was close enough to meet homoscedasticity, as evidenced by the random pattern on the scatter plot of the standardized residuals of the projected values (see Figure 2).
Figure 1:
Histograms of regression residuals for all models after natural log transformation

Figure 2:
Scatterplot of standardized predicted values for all models
Figure 2 (Continued):  

*Scatterplot of standardized predicted values for all models*

**School Counselor Model**

In order to explore the association of student demographics on graduation rates, a hierarchical multiple regression was conducted, with two blocks of variables. The first block included county location (0 = no, 1 = yes), percentage of students with disabilities, percentage of students who are non-economically disadvantaged, and percentage of non-white students as the predictors, with high school graduation rate from Tennessee’s four most urban counties (Shelby, Knox, Hamilton, and Davidson) as the dependent variable. In block two, high school counselor ratio was also included as the predictor variable.

**Table 1**  
*Hierarchical Linear Regression Coefficients Counselor Ratio*

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>R² Change</th>
<th>F</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intercept</td>
<td>4.308</td>
<td>.104</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

43
The first model with only the student variables was significant, $F(6,104) = 12.995, p < .001, R^2 = .428$. In this model, only the percentage of non-economically disadvantaged students and the percentage of students with disabilities were significantly associated with high school graduation rates ($b = -0.003, t = 3.67, p = < .001$, and $b = -0.005, t = -2.31, p = .023$, respectively).
The high school graduation rate increased 3% percent, on average, for each ten percent increase in the percentage of non-economically disadvantaged students in a high school. High school graduation rate decreased .005 percent, on average, for a 5% increase in the percentage of students with disabilities within a high school. The second model \(F(7,103) = 11.11, p < .001, R^2 = .43\), which added the school counselor ratios \(b = 4.30, t = 40.08, p < .001\) showed significant improvement from the first model, \(F(6,104) = 12.995, p < .001, R^2 = .428\). In both models, percentage of non-economically disadvantaged and percentage of students with disabilities were significant. The standardized regression coefficient (see beta column in Table 1) is larger for percentage of non-economically disadvantaged than percentage of students with disabilities so it is relatively more important in the model. The first model explained 42.8% of the variance in graduation rates. The final model that included school counselor ratio, accounted for 43% of the variance in graduation rates. These are considered substantial effect sizes (Cohen, 1988).

**Absenteeism**

In order to explore the association of student demographics on graduation rates, a hierarchical multiple regression was conducted, with two blocks of variables. The first block included county location \((0 = \text{no}, 1 = \text{yes})\), percentage of students with disabilities, percentage of students who are non-economically disadvantaged, and percentage of non-white students as the predictors, with high school graduation rate from Tennessee’s four most urban counties (Shelby, Knox, Hamilton, and Davidson) as the dependent variable. In block two, chronic absenteeism was also included as the predictor variable.
### Table 2

**Hierarchical Linear Regression Coefficients Chronic Absenteeism**

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>R² Change</th>
<th>R² Change</th>
<th>F</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intercept</td>
<td>4.308</td>
<td>.104</td>
<td>.428</td>
<td>.428</td>
<td>12.995</td>
<td>41.407</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Davidson²</td>
<td>-.015</td>
<td>.027</td>
<td>-.053</td>
<td>-.573</td>
<td>.568</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hamilton²</td>
<td>.021</td>
<td>.032</td>
<td>.053</td>
<td>.065</td>
<td>.646</td>
<td>.520</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knox²</td>
<td>-.002</td>
<td>.038</td>
<td>-.005</td>
<td>-.048</td>
<td>.962</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-White Pct</td>
<td>4.334x10⁻⁵</td>
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<td>.011</td>
<td>.065</td>
<td>.948</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Econ Pct</td>
<td>.003</td>
<td>.001</td>
<td>.568</td>
<td>3.673</td>
<td>&lt;.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stu Dis Pct</td>
<td>-.005</td>
<td>.002</td>
<td>-.199</td>
<td>-2.305</td>
<td>.023</td>
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<tr>
<td>3</td>
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<td>.096</td>
<td>.538</td>
<td>.110</td>
<td>24.440</td>
<td>45.886</td>
<td>&lt;.001</td>
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</tr>
<tr>
<td></td>
<td>Davidson²</td>
<td>.028</td>
<td>.026</td>
<td>.097</td>
<td>1.095</td>
<td>.276</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hamilton²</td>
<td>.038</td>
<td>.029</td>
<td>.118</td>
<td>1.286</td>
<td>.201</td>
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<tr>
<td></td>
<td>Knox²</td>
<td>.044</td>
<td>.036</td>
<td>.125</td>
<td>1.237</td>
<td>.219</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Non-White Pct</td>
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<td>.001</td>
<td>.053</td>
<td>.361</td>
<td>.719</td>
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</tr>
<tr>
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<td>Non-Econ Pct</td>
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<td></td>
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<tr>
<td></td>
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<td>.002</td>
<td>-.179</td>
<td>-2.293</td>
<td>.024</td>
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</tr>
<tr>
<td></td>
<td>Absenteeism</td>
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<td>.000</td>
<td>-.383</td>
<td>-4.944</td>
<td>&lt;.001</td>
<td></td>
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</tr>
</tbody>
</table>
The first model with only the student variables was significant, $F(6,104) = 12.995, p < .001, R^2 = .428$. In this model, only the percentage of non-economically disadvantaged students and the percentage of students with disabilities were significantly associated with high school graduation rates ($b = -0.003, t = 3.67, p < .001$, and $b = -0.005, t = -2.31, p = .023$, respectively) (see Table 2). The high school graduation rate increased 3% percent, on average, for each ten percent increase in the percentage of non-economically disadvantaged students in a high school. High school graduation rate decreased .005 percent, on average, for a 5% increase in the percentage of students with disabilities within in a high school. The second model ($F(1,103) = 24.440, p < .001, R^2 = .54$), which added the chronic absenteeism ($b = -0.002, t = -4.944, p < .001$) showed significant improvement from the first model, $F(6,104) = 12.995, p < .001, R^2 = .428$. In both models, percentage of non-economically disadvantaged students and percentage of students with disabilities were both significant. In the first model, the variables explained 42.8% of the variance in graduation rates. In the second model that included chronic absenteeism, accounted for 54% of the variance in graduation rates. These are considered substantial effect sizes (Cohen, 1988). For the three significant variables, percentage of non-economically disadvantaged students (.414) had the highest relative importance, followed by percentage chronically absent (-.383), and percentage students with disabilities (-.179).

**Ready 2 Graduate**

In order to explore the association of student demographics on graduation rates, a hierarchical multiple regression was conducted, with two blocks of variables. The first block included county location ($0 = no, 1 = yes$), percentage of students with disabilities, percentage of students who are non-economically disadvantaged, and percentage of non-white students as the predictors, with high school graduation rate from Tennessee’s four most urban counties (Shelby,
Knox, Hamilton, and Davidson) as the dependent variable. In block two, Ready 2 Graduate percentage was also included as the predictor variable.

**Table 3**

*Hierarchical Linear Regression Coefficients Ready 2 Graduate*

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>$R^2$</th>
<th>$R^2$ Change</th>
<th>F</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intercept</td>
<td>4.308</td>
<td>.104</td>
<td>.428</td>
<td>.428</td>
<td>12.995</td>
<td>41.407</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Davidson&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.015</td>
<td>.027</td>
<td>-.053</td>
<td>-.573</td>
<td>.568</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hamilton&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.021</td>
<td>.032</td>
<td>.065</td>
<td>.646</td>
<td>.520</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knox&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.002</td>
<td>.038</td>
<td>-.005</td>
<td>-.048</td>
<td>.962</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Non-White Pct</td>
<td>4.334x10&lt;sup&gt;-5&lt;/sup&gt;</td>
<td>.001</td>
<td>.011</td>
<td>.065</td>
<td>.948</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Econ Pct</td>
<td>.003</td>
<td>.001</td>
<td>.568</td>
<td>3.673</td>
<td>&lt;.001</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Stu Dis Pct</td>
<td>-.005</td>
<td>.002</td>
<td>-.199</td>
<td>-2.305</td>
<td>.023</td>
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<tr>
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<td>Intercept</td>
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<td>.052</td>
<td>10.402</td>
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<tr>
<td></td>
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<td>-.001</td>
<td>.026</td>
<td>-.002</td>
<td>-.025</td>
<td>.980</td>
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<tr>
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<td>Hamilton&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>.031</td>
<td>.050</td>
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<td>.611</td>
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<tr>
<td></td>
<td>Knox&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.006</td>
<td>.037</td>
<td>-.017</td>
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<tr>
<td></td>
<td>Non-White Pct</td>
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<td>.041</td>
<td>.968</td>
<td></td>
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<tr>
<td></td>
<td>Non-Econ Pct</td>
<td>.002</td>
<td>.001</td>
<td>.435</td>
<td>2.829</td>
<td>.006</td>
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</table>
Table 3 (Continued)

*Hierarchical Linear Regression Coefficients Ready 2 Graduate*

<table>
<thead>
<tr>
<th></th>
<th>Coef</th>
<th>SE Coef</th>
<th>t</th>
<th>p</th>
<th>Coef</th>
<th>SE Coef</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stu Dis Pct</td>
<td>-.004</td>
<td>.002</td>
<td>-.155</td>
<td>-1.854</td>
<td>.067</td>
<td></td>
</tr>
<tr>
<td>Ready2Grad</td>
<td>.002</td>
<td>.000</td>
<td>.280</td>
<td>-3.225</td>
<td>.002</td>
<td></td>
</tr>
</tbody>
</table>

The first model with only the student variables was significant, \( F(6,104) = 12.995, p < .001, R^2 = .428 \). In this model, only the percentage of non-economically disadvantaged students and the percentage of students with disabilities were significantly associated with high school graduation rates \( (b = -0.003, t = 3.67, p = < .001, \text{ and } b = -0.005, t = -2.31, p = .023, \text{ respectively}) \) (see Table 3). The high school graduation rate increased 3% percent, on average, for each ten percent increase in the percentage of non-economically disadvantaged students in a high school. High school graduation rate decreased .005 percent, on average, for a 5% increase in the percentage of students with disabilities within a high school. The second model, \( F(1,103) = 10.402, p < .001, R^2 = .52 \), which added Ready 2 Graduate \( (b = .280, t = -3.225, p = .002) \) showed significant improvement from the first model, \( F(6,104) = 12.995, p < .001, R^2 = .428 \). In both models, percentage of non-economically disadvantaged students and percentage of students with disabilities were both significant. The first model, the variables explained 42.8% of the variance in graduation rates. The variables in the first model explained 42.8% of the variance in graduation rates. The final model that included Ready 2 Graduate, accounted for 52% of the variance in graduation rates. These are considered substantial effect sizes (Cohen, 1988). For the three significant variables, percentage of non-economically disadvantaged (.435), had the highest relative importance, followed by percentage Ready 2 Graduate (.280), and percentage students with disabilities (-.155).
ACT Composite

In order to explore the association of student demographics on graduation rates, a hierarchical multiple regression was conducted, with two blocks of variables. The first block included county location (0 = no, 1 = yes), percentage of students with disabilities, percentage of students who are non-economically disadvantaged, and percentage of non-white students as the predictors, with high school graduation rate from Tennessee’s four most urban counties (Shelby, Knox, Hamilton, and Davidson) as the dependent variable. In block two, ACT Composite percentage was also included as the predictor variable.

**Table 4**

*Hierarchical Linear Regression Coefficients Average ACT Composite*

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>$R^2$</th>
<th>$R^2$ Change</th>
<th>F</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intercept</td>
<td>4.308</td>
<td>.104</td>
<td>.428</td>
<td>.428</td>
<td>12.995</td>
<td>41.407</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Davidson</td>
<td>-.015</td>
<td>.027</td>
<td>-.053</td>
<td>-.573</td>
<td>.568</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hamilton</td>
<td>.021</td>
<td>.032</td>
<td>.065</td>
<td>.646</td>
<td>.520</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knox</td>
<td>-.002</td>
<td>.038</td>
<td>-.005</td>
<td>-.048</td>
<td>.962</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-White Pct</td>
<td>4.334x10^-5</td>
<td>.001</td>
<td>.011</td>
<td>.065</td>
<td>.948</td>
<td></td>
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<tr>
<td></td>
<td>Non-Econ Pct</td>
<td>.003</td>
<td>.001</td>
<td>.568</td>
<td>3.673</td>
<td>&lt;.001</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Stu Dis Pct</td>
<td>-.005</td>
<td>.002</td>
<td>-.199</td>
<td>-2.305</td>
<td>.023</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Intercept</td>
<td>3.966</td>
<td>.153</td>
<td>.473</td>
<td>.045</td>
<td>8.789</td>
<td>25.933</td>
<td>&lt;.001</td>
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</tr>
</tbody>
</table>

50
Table 4 (Continued)

Hierarchical Linear Regression Coefficients Average ACT Composite

<table>
<thead>
<tr>
<th></th>
<th>Davidson</th>
<th>Hamilton</th>
<th>Knox</th>
<th>Non-White Pct</th>
<th>Non-Econ Pct</th>
<th>Stu Dis Pct</th>
<th>ACT Comp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davidson</td>
<td>.002</td>
<td>.027</td>
<td>.008</td>
<td>.090</td>
<td>.929</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hamilton</td>
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<td>.032</td>
<td>.113</td>
<td></td>
<td>.255</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Knox</td>
<td>.014</td>
<td>.037</td>
<td>.040</td>
<td>.378</td>
<td>.706</td>
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<td></td>
</tr>
<tr>
<td>Non-White Pct</td>
<td>.001</td>
<td>.001</td>
<td>.202</td>
<td>1.191</td>
<td>.236</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Econ Pct</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stu Dis Pct</td>
<td>.002</td>
<td>.001</td>
<td>.335</td>
<td>1.988</td>
<td>.049</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT Comp</td>
<td>-.001</td>
<td>.002</td>
<td>-.054</td>
<td>-.559</td>
<td>.577</td>
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</tbody>
</table>

The first model with only the student variables was significant, \( F(6,104) = 12.995, p = < .001, R^2 = .428 \). In this model, only the percentage of non-economically disadvantaged students and the percentage of students with disabilities were significantly associated with high school graduation rates (\( b = -0.003, t = 3.67, p = < .001, \) and \( b = -0.005, t = -2.31, p = .023, \) respectively) (see Table 4). The high school graduation rate increased 3% percent, on average, for each ten percent increase in the percentage of non-economically disadvantaged students in a high school. High school graduation rate decreased .005 percent, on average, for a 5% increase in the percentage of students with disabilities in a high school. The second model, \( (F(1,103) = 8.789, p = .004, R^2 = .44, \) which added the ACT Composite (\( b = -.018, t = 2.965, p = .004 \)) showed significant improvement from the first model, \( F(6,104) = 12.995, p < .001, R^2 = .428 \). In both models, Average ACT composite and the percentage of non-economically disadvantaged students were both significant. The first model explained 42.8% of the variance in graduation rates. The final model that included ACT Composite, accounted for 47.3% of the variance in high school
graduation rates. These are considered a substantial effect size (Cohen, 1988). The standardized regression coefficient is larger for percentage of Average ACT Composite (.474) than percentage of non-economically disadvantaged students (.335), so it was more relatively important in the model.
Chapter 5 Discussion

Summary of Findings

The results of this study found that there was a substantial effect between high school graduation rates and student demographics with the following variables: school counselor ratios, chronic absenteeism, and Ready 2 Graduate rates (Choen, 1988). When looking at the specific variables without the student demographics, average ACT scores accounted for only 4.5% of the variance in high school graduation rates which is considered weak (Cohen, 1988), and school counselor ratios only accounted for .02% of the variance of high school graduation rates, which is considered very weak (Cohen, 1988). Based on these findings ACT scores and school counselor ratios play less of a role in Tennessee’s four most urban counties than chronic absenteeism and Ready 2 Graduate rates. In addition to finding that these two factors account for a substantial effect (Cohen, 1988) on high school graduation rates, two student level characteristics of non-economically disadvantaged and students with disabilities were found to be significantly predictive of high school graduation rates. These results were interpreted within the ASCA National Model, that aides school counselors in the development of a comprehensive, data-driven school counseling program that meets the needs of all students (ASCA, 2019). The chapter concludes with a discussion of the study's limits, potential future research areas, and final thoughts.

School Counselor Ratios

A school counseling program's main goal is to better serve and meet all students' needs (ASCA, 2019). There are many ways to accomplish this goal within a district, especially in student services (Carey et al., 2012). Within this study, school counselor to student ratios and student demographics was found to account for 43% of the variance in high school graduation
rates, which according to Cohen (1988), anything above 26% is considered a substantial effect, while school counseling ratios only accounted for .02% of the variance on high school graduation rates which is considered very weak (Cohen, 1988). In recent studies, poorer student outcomes have been associated with high caseloads and high counselor-to-student ratios (Brasfield et al., Carey et al., 2012, Kearney et al. 2021, Reback, 2016). Based on the results of this study, school counselor ratios have a very weak (Cohen, 1988) relationship to high school graduation rates, and this lack of effect must be considered when looking at ratios in all high schools in Tennessee and beyond. To address this existing gap, future research must begin focusing on the significance of school features and resources rather than primarily on counseling ratios and student counts (Kearney et al., 2021).

In addition to looking at school counselor ratio’s effect with high school graduation rates, the study looked at specific student characteristics that were found to be significant in a previous study conducted by Burke (2021). In model 2, the student characteristics considered significant in this prior study (Burke, 2021) were the percentage of non-economically disadvantaged students, the percentage of students with disabilities, and the percentage of non-white students. In examining this research question, this study found that the percentage of non-economically advantaged students and the percentage of students with disabilities significant in both models under research question one. The percentage of non-economically disadvantaged students is relatively more important in the model, than the percentage of students with disabilities. Schools with a higher percentage of non-economically disadvantaged students had a higher graduation rate, while schools with a higher percentage of students with disabilities had a higher high school graduation rate as well. The schools with a lower percentage of non-economically disadvantaged students had a lower high school graduation rate as well as those schools with a lower percentage
of students with disabilities. In comparison to previous research studies, these results are inconsistent since instead of using objective measures of achievement, the results were dependent on student self-report (Carey et al., 2010b). However, when comparing these student characteristics to Burke (2021) these results are consistent, since she found that graduation rates and their impact on student and academic results should consider the percentages of non-white students, non-economically disadvantaged students, and students with disabilities (Burke, 2021).

Based on the results of research question one, it is key to use these results moving forward when implementing the four components of the ASCA National Model to all School Counseling programs to make sure student characteristics and proper school counselor to student ratios are being followed (ASCA, 2019). Expectations and program elements are crucial, but the number of school counselors to students may affect the standard and range of programs available (Kearney et al., 2021). As school counselors move forward, it is important for the school counselor to consider the population of his/her students, especially non-economically disadvantaged students and students with disabilities, in addition to the services they provide to all students (Burke, 2021).

**Chronic Absenteeism**

As part of the Every Student Succeeds Act (ESSA), all high schools are required to submit yearly data on chronic absenteeism to their state Department of Education (DOE) and the United States Department of Education (USDOE, 2016). In order to enable all students in Tennessee and around the country to achieve academic success via attendance at school, chronic absenteeism data is being collected to support efforts to eliminate chronic absenteeism (USDOE, 2016). Within this study, chronic absenteeism and student demographics were found to account for 54% of the variance of high school graduation rates. This effect was not only substantial
according to Cohen (1988) but was found to have the highest effect of the four factors used to see if a relationship existed to high school graduation rates. Meanwhile, the variable of absenteeism only accounted for 11% of the variance on high school graduation rates and is considered weak (Cohen, 1988) on its own. Approximately 7 million students, or around 1 in 6 students nationwide, missed 15 or more days of school during the 2015–2016 academic school year, according to the USDOE (2016). The extent of this issue on a national level is less evident (Mayor & Suarez, 2019). The lack of national longitudinal data analysis to show academics and professionals how serious of a problem school pushout is for students of color is where current literature has fallen short (Mayor & Suarez, 2019).

In addition to looking at chronic absenteeism rates to high school graduation rates, the percentage of non-economically disadvantaged students, the percentage of students with disabilities, and the percentage of non-white students were again looked at in research question two to see if a significance existed with these characteristics when compared to high school graduation rates and chronic absenteeism rates. Both the percentage of children who were non-economically disadvantaged and the percentage of students who had disabilities were significant in both models for research question two. The percentage of non-economically disadvantaged students had the highest relative importance among the three significant factors within the model using chronic absenteeism, which is then followed in relative importance by the percentage of chronically absent children and the percentage of students with disabilities. Schools with higher graduation rates had higher percentage of students who are non-economically disadvantaged, a lower percentage of students who were chronically absent, and higher percentage of students with disabilities. The schools with lower graduation rates had lower percentage of students who were non-economically disadvantaged, a higher percentage of students who were chronically
absent, and a lower percentage of students with disabilities. In order to show how detrimental frequent absences are to a student's academic achievement, the USDOE (2016) cites three key factors: (a) absenteeism keeps students from achieving early educational milestones like learning to read and write; (b) attendance rates are a better predictor of a student's likelihood to graduate or drop out than standardized test scores; and (c) absenteeism in school can influence experiences in later adulthood like poverty, deteriorating health, and contact with the criminal justice system (USDOE, 2016). Based on these three factors, the results of this study are consistent with what the USDOE, (2016) has found.

**Ready 2 Graduate**

In accordance with Tennessee's Every Student Succeeds Act (ESSA), The percentage of students who graduate from a Tennessee high school and reach success milestones that boost their chances of smoothly enrolling in postsecondary education and/or getting high-quality employment is tracked by the Ready 2 Graduate indicator. (TNDOE, 2018b). This indicator's goal is to evaluate a student's total educational experience, which includes factors other than academic achievement (TNDOE, 2018b). Within this study, Ready 2 Graduate rates and student demographics were found to account for 48% of the variance in high school graduation rates, which according to Cohen, (1988) is substantial. This finding was significant because the whole premise of Ready 2 Graduate rates in Tennessee is to make sure students will graduate from high school prepared for college and/or career (TNDOE, 2018b). However, when looking at Ready 2 Graduate specifically, it only accounted for 5.2% of the variance of high school graduation rates, which is considered weak (Cohen, 1988).

As in the other research questions, student characteristics were also considered with the Ready 2 Graduate rate and high school graduation rate, with both the percentage of non-
economically disadvantaged and the percentage of students who had disabilities were found significant in both models. Ready 2 Graduate contributed to 5.2% of the variation in high school graduation rates in the model that included it. According to Cohen (1988), these are regarded as weak effect sizes. The percentage of non-economically disadvantaged students had the highest relative relevance for the three significant factors in this model, which was followed by Ready 2 Graduate, and then the percentage of students with disabilities. The higher the percentage of students who were non-economically disadvantaged and percentage of students with disabilities, the higher the high school graduation rate, while the lower the percentage of non-economically disadvantaged students and the percentage of students with disabilities the lower the graduation rate. This finding in research question three is inconsistent with the formation of Ready 2 Graduate rates and why the State of Tennessee included them in their version of Every Student Succeeds Act (ESSA) (TNDOE, 2018b). Students who are non-economically disadvantaged and those who have disabilities are two key demographics that are served by the ESSA and the Ready 2 Graduate rate. This indicator's goal is to evaluate a student's total educational experience, which includes factors other than academic achievement (TNDOE, 2018b). The use of Ready 2 Graduate is also a key component of the ASCA National Model, which is the framework of this study that consistently states a school counselor should devote 80% of his/her weekly time to providing direct student services to students (ASCA, 2019). The 5.2% of the variance of high school graduation rates being found within Ready 2 Graduate rates indicates that a relationship just for this indicator is weak (Cohen, 1988) and further highlights the need for more research in this area moving forward.
ACT Composite

The ACT test is also a component of the ESSA and a task some 11th graders in Tennessee take as an EPSO option (see Appendix A), depending on the school district to be college ready after high school (TNDOE, 2018b). In research question four, this study sought to see how much of the variance could be explained by student characteristics and average ACT composite scores to high school graduation rates. In examining the results after running a hierarchical linear regression, 47.3% of the variance in high school graduation rates could be explained by student demographics and average ACT composite, which is considered a substantial effect size (Cohen, 1988). Meanwhile, only 4.5% of the variance of high school graduation rates could be explained by average ACT Composite scores. This effect, according to Cohen (1988), is considered weak and suggests that little to no relationship exists between the two variables. This finding is consistent with a previous research study that looked at ACT scores and student success. The average ACT score for high school graduates nationwide was 19.5 out of 36 for the high school graduating class of 2023. This aggregate score is the lowest it has been in 32 years and is down 0.3 percentage points from the previous year (Sparks, 2023). Bettinger et al. (2013) discovered how reading and science ACT scores have a far weaker correlation with college performance especially first year GPA, than did mathematics and English scores (Bettinger et al., 2013). Looking at the Bettinger et al. (2013), ACT composite scores may have a weak relationship to high school graduation rates and something school counselors may need to consider further when implementing their comprehensive school counseling programs (ASCA, 2019).

In examining the results of research question four regarding student characteristics, both the percentage of students who were not economically disadvantaged and the percentage of students with disabilities were significant in both models. The percentage of non-economically disadvantaged
disadvantaged students had a greater standardized regression coefficient making it more important in the model. The results of this study further highlight how prior research on student accomplishment has placed more emphasis on school features and counseling ratios than it has on individual student characteristics (Kearney et al., 2021). Average ACT Composite is a key characteristic of high schools that is measured on the TN State Report card and is supposed to show how ready students are within that school for college success (TNSBE, 2017b). The results within this study demonstrate how a key school characteristic may not show student success after high school as once previously thought (ASCA, 2019, Bryan et al., 2021, Velez 2016). According to research done in 2021 by Bryan et al., students who received school counseling that focused 10% or less on college readiness—which included ACT preparation and resources—were more likely to enroll in associate degree programs (Bryan et al., 2021). However, students who received counseling that focused 20% or less on college readiness were also more likely to enroll in other postsecondary programs and to express uncertainty about their futures (Bryan et al., 2021). The results of research question four regarding the amount of variance explained by ACT Composite scores to high school graduation rates is key and something that needs to be considered in future research around school counseling.

**Implications for School Counselors**

The results of this study are inconsistent with prior research in showing that school counseling ratios matter, but that 1:250 may not be the actual best ratio for student success. Lower ratios are based on the idea that the more students a counselor can help, the greater their overall impact on the development of those students will be (Kearney et al., 2021). This study looked specifically at school counseling ratios at public high schools within Tennessee’s four most urban counties and if a relationship existed or not with high school graduation rates. Within
these 115 high schools, this study found that school counselor to student ratios were below the ASCA recommended 1:250 (ASCA, 2019) and above the 1:250. The present study discovered a very weak effect size in the variance between school counselor ratios and high school graduation rates (Cohen, 1988), but the hierarchal linear regression analysis did not analyze the difference between higher and lower student counselor ratios. In future research surrounding school counselor ratios, research studies should investigate the significance of the association between high schools with high and low school counselor ratios. School counselors should not only consider the individual student, but also the neighborhoods their students live in, since both are impacted when comparing the advantages of graduating from high school to those who drop out (Schmidt, 2020). To start addressing this existing gap, future research must begin focusing on the significance of school features and resources rather than solely on counseling ratios and student counts (Kearney et al., 2021).

Even though in this study, the results show that high school graduation rates had a very weak effect size (Cohen, 1988) in the variance explained by school counseling ratios, an opportunity gap persists in today's urban high schools which must also be taken into consideration. The emphasis on these student characteristics that influence the achievement gap is the opportunity gap, which is pervasive across ethnic and social class and is continuously growing in the American educational system today (Carter, 2013). The impact of this opportunity gap on high school graduation rates is real, according to previous studies, which found that this educational disparity in socioeconomic status and race has a significant impact on students' chances of being successful and earning a living after high school (Carter, 2013). Urban areas face several issues, including the opportunity gap and the traditional segregated schools that were created for low-income African American and Latinx kids (Milner, 2010). In a recent study,
Robson et al. (2022) discovered that other academic and student-level measures tend to have a higher ability to predict graduation rates when the facts are considered rather than the opportunity gap (Robson et al., 2022). This opportunity gap, which is primarily evident in urban schools, was the key factor in this study's decision to focus on Tennessee's four most urban counties. This study discovered that chronic absence rates, Ready to Graduate rates, and school counseling ratios, when student demographics were included, had a substantial effect (Cohen, 1988) on the variance on high school graduation rates. There may be opportunity gaps in urban schools that warrant additional investigation (Carter, 2013). The setting and demographic information of Tennessee's four most urban counties should be considered, as well as how they compare to other metropolitan areas both inside and outside of Tennessee. Shelby County Schools (SCS) had the lowest graduation rate for minority students, at 79%, according to data from the Tennessee State Report Card on Graduation Rates by District under Black/Hispanic/Native American for 2020–2021 (TNDOE, n.d.-b). Davidson County was next with an 80.5% graduation rate, followed by Hamilton County with 82.1%, and Knox County with 86.8% (TNDOE, n.d.-b). This study included 115 high schools in total from these four urban counties, and all the information about these high schools can be found on the Tennessee State Report Card, which also includes information about other student traits and school statistics that were not used in this study (TNDOE, n.d.-b).

More than ever, the field of school counseling needs strong leadership and creative programming (Burke, 2021). School counselors must incorporate the guiding principles of systematic change, leadership, cooperation, and advocacy into how the program will be provided to students and stakeholders within the school to ensure that kids succeed in high school (TNDOE, 2018a). Due to the focus on accountability and data driven programs in education,
school counselors must explain why they take their actions (ASCA, 2019). High school graduation rates play an important role in school counseling since the passage of the ESSA in 2015 by Congress and states have subsequently passed their own versions of the ESSA and Tennessee Succeeds frames the path forward for all schools in Tennessee (TNDOE, 2018b). The Ready 2 Graduate indicator (TNDOE, 2018b) is used in Tennessee to track the percentage of students who graduate from a Tennessee high school and achieve success milestones that increase their chances of smoothly enrolling in postsecondary education and/or obtaining high-quality employment. Therefore, determining a student's readiness for high school and ensuring that all students have access to the resources and supports they require to be prepared for life after high school, whether that means enrolling in a post-secondary institution or beginning a career right away, are both part of a school counselor's duties in Tennessee. Therefore, it is interesting that Ready 2 Graduate rates could only explain 5.2% of the variance on high school graduation rates within this study, and this is something that all school counselors in Tennessee and elsewhere should take into consideration when creating their comprehensive school counseling programs.

Lastly, the ASCA National Model's primary objective is to give school counselors across the country a consistent process to use when implementing and updating programs in their schools, districts, and states (ASCA, 2019). When states implement new legislation and start to focus on specific indicators and metrics, they will use to gauge student success, school counselors must consciously take the needs of their students and the school community into consideration (Burke, 2021). This study adopted the ASCA National Model (ASCA, 2019) as its framework since cooperation and uniformity within the school counseling profession are increasingly becoming the norm rather than the exception moving forward. Therefore, state lawmakers are now concerned in how school counselors spend their 80% of student services
(ASCA, 2019), in addition to parents and school administrators, by developing and applying metrics like high school graduation rates and Ready 2 Graduate indicators.

The four most urban counties in Tennessee were the focus of this study, which examined 115 high schools (TACIR, 2016). Examining the sample of high schools in additional detail reveals that 46 of them had counselor to student ratios of 1:250 or less, twenty-nine had ratios between 250 and 300, and 40 had ratios of 300 or higher. About half of the schools fall below the 1:250 ratio and the other half fall over it in the framework of the ASCA National Model (ASCA, 2019). This study's insightful breakdown of school counselor ratios demonstrates how different school counselor –to student ratios across the nation vary from ASCA's suggested 1:250 ratio (ASCA, 2019). Goodman-Scott et al., (2018) found that students whose school had a lower counselor to student ratio (250 or below) or were considered a non-Title I school had higher GPAs and these two variables of lower ratio, and Title I status accounted for 3.7% of the variance in a student’s GPA (Goodman-Scott et al., 2018). These findings by Goodman-Scott et al., (2018), support the impact that school counseling ratios have on students' academic performance, but they also point to the necessity of approaching research from an ecological perspective (Goodman-Scott et al., 2018). Within this study, the student characteristics of percentage of non-economically disadvantaged and percentage of students with disabilities were found significant several times when looking at the amount of variability in high school graduation rates. In comparing these student characteristics to previous studies, it is very challenging to gauge school counselors' direct impact without accounting for the larger systemic factors mediating those impacts, given the quantity and complexity of intersecting variables linked to student outcomes, especially academic achievement. (Goodman-Scott et al., 2018).
Limitations and Future Research

Even if every effort was made to minimize limitations, constraints, missing data, and human error must always be taken into consideration when interpreting research findings. The generalizability of these results is limited to the data available within this study based on information found in the Tennessee State Report Card for the academic year 2020-2022. Even though Ready 2 Graduate, chronic absenteeism, average Act Composite, and school counseling ratios are useful in examining what may or may not affect high school graduation rates, there are several other factors that may be taken into consideration but were not gathered for the state report card. Future research should consider topics like social emotional learning, how school counselors spend their day preparing children for college and careers, and the tools that are available to them and their students.

Another drawback that needs to be addressed is the difficulty of conducting post-Coronavirus Pandemic research surveys and data collection in Tennessee's public schools (Burke, 2021). Additionally, the majority of the state's current K–12 education research studies focus on issues that the school district is interested in, which further restricts the types of data and research that can be collected (Leak, 2023). This study's aim was to match existing archive data as closely as feasible with school-level factors and student-level features to derive conclusions meaningful for school counselors. It would be beneficial to use a mixed-methods approach in future studies that examine the high school graduation rate in Tennessee, breaking down the data using additional survey research from students and school counselors, adding to the validity of the findings.

In addition to the limitations already listed, another one to consider is the availability of data and what high schools were included and excluded within this study due to the type of data
used to run the analysis. The following were excluded from the analyses: (a) high schools with missing or suppressed data, (b) high schools with just one grade level, and (c) alternative learning programs. Additionally, schools that recently opened or closed were also excluded. Appendix B includes a list of these high schools along with their justification for exclusion. Additionally, no private schools or charter schools in Tennessee were included within the four most urban counties (Shelby, Hamilton, Knox, and Davidson).

This research study expanded on a recent study conducted by Burke (2021) and only used the student characteristics that were found significant within her study. Since this study's goal was to build on the research completed by Burke (2021), in other districts in Tennessee, other student characteristics collected on the State Report Card were not included. One factor that was considered in this analysis was substituting the school counselor ratio for Burke's (2021) study's school counselor number. This study took the the ASCA National Model (ASCA, 2019) into account and determine whether there was any correlation between high school graduation rates and the number of students assigned to each counselor by using the school counselor ratio.

Despite all the constraints mentioned, this study demonstrates that there was a substantial effect (Cohen, 1988) on the variance correlation between the student demographics and chronic absenteeism, Ready 2 Graduate, school counseling ratio, and average ACT composite. However, when looked at on its own without the student demographics, only weak effect sizes (Cohen, 1988) were explained by the variance for Ready 2 Graduate, chronic absenteeism, and average ACT composite, while school counseling ratios were very weak (Cohen, 1988). When using the ASCA National Model (ASCA, 2019) to create and administer an all-encompassing school counseling program for students, this relationship will be crucial for school counselors in Tennessee and beyond. The impacts of the Coronavirus Pandemic are still being felt today,
making it crucial for school counselors to connect with and support high school students after a
time of uncertainty that hurt them both emotionally and academically (Lancaster et al., 2023). In
future research, it is advised that similar studies be conducted again to see if the findings hold
true throughout Tennessee's counties and other states nationwide. Future studies should also
consider additional student characteristics and outcomes that are available on the Tennessee
Report Card as well as those that are not provided but are suitable to include in future research as
they try to further expand upon this study. Future research may include additional information on
the ASCA National Model (ASCA, 2019), the responsibilities and tasks of school counselors, as
well as other policies and procedures that states are implementing to increase high school
graduation rates and improve students' readiness for college and careers. School counseling
research assists these professionals in adapting their duties to the current environments affecting
the students they serve because the field of school counseling is continuously evolving (Brasfield
et al., 2021).

Conclusion

The results of this study indicated there was a substantial effect (Choen, 1988) between
the factors of school counselor ratios, Ready 2 Graduate, chronic absenteeism, and average ACT
composite with urban high school graduation rates in Tennessee, when student demographics
were considered. However, when these variables were looked at individually to high school
graduation rates, the variables of Ready 2 Graduate, chronic absenteeism, and average ACT
composite were shown to have a weak effect (Cohen, 1988) on the variance, while school
counseling ratios was considered very weak (Cohen, 1988). Several student characteristics that
Burke (2021) found significant were also found significant in this study, especially the two
student characteristics: the percentage of non-economically disadvantaged students and the
percentage of students with disabilities. These two characteristics were found to be significant in all four research questions (model 2, 3, 4, and 5) as well as in model 1 which especially looked at the relationship, if any, around student demographics specifically mentioned in the Burke (2021) study. Less is known about other possible student characteristics that contribute to high graduation rates for high school students and readiness for college and careers, despite the abundance of research on school counseling ratios that places a priority on test scores and achievement (Kearney et al., 2021). There are a few studies that look at counseling ratios recently, but none of them concentrate on Tennessee’s percentages of students based off the Ready 2 Graduate indicator until this study (Brasfield et al., 2021, Lancaster et al., 2023, and Poynton & Lapan, 2017).

By incorporating the ASCA National Model (ASCA, 2019), an emphasis is placed on school counseling ratios and the 1:250 suggestion. The ASCA National Model's 1:250 student to counselor ratio is predicated on the notion that school counselors can spend more time with students if they have access to a comprehensive range of services and support (ASCA, 2019). However, Hoyt (1955) suggested the first school counselor to student ratio, based on his three hypotheses—school counselor engagement, involvement, and role. These three hypotheses, however, were not backed by peer-reviewed research and were instead only the author's opinion (Hoyt, 1955). This study conducted a hierarchal linear regression in research question 1 which looked specifically at school counselor ratios and the relationship, if any, it had on high school graduation rates within Tennessee’s four most urban counties. During the analysis, this study found that school counselor ratios accounted for .02% of the variance in high school graduation rates. This is considered a very weak effect size (Cohen, 1988). However, this information just
shows that a relationship may exist, but much more research and study on the 1:250 ratio and its effect, if any, on graduation rate is still needed.

Other research questions in this study examined factors which included chronic absenteeism (model 3), Ready 2 Graduate (model 4), and average ACT composite (model 5), in addition to school counselor ratios (model 2). According to the results of the hierarchical linear regression, absenteeism with student demographics was responsible for 54% of the variance in high school graduation rates, student demographics and Ready 2 Graduate for 48% of the variance in high school graduation rates, and average ACT composite and student demographics accounted for 47.3% of the variance. The amount of variance accounted for individually in high school graduation rates for chronic absenteeism and Ready 2 Graduate, and average ACT composite was considered weak (Cohen, 1988), while school counseling ratios was considered very weak (Cohen, 1988). Based on this analysis more research and studies looking at the effect of all four factors should be considered to see whether a relation does or does not exist on high school graduation rates. For students' academic development as well as social and emotional learning, schools constitute an essential developmental framework (Goodman-Scott et al., 2019). More than ever, the impact of school counselors' programming and voice in relation to the ASCA National Model (ASCA, 2019) extends beyond Tennessee and its four most urban counties. It also affects how school counselors use their time in relation to high school graduation rates as this study shows is just the beginning to what is next for the school counseling profession.
References


http://www.jstor.org/stable/42732322


https://doi.org/10.3389/fpsyg.2021.647740


http://www.jstor.org/stable/40017004


Appendix A

*State of Tennessee EPSO Diagram*

(Template provided by Vecteezy.com) & (TNDOE, n.d.-a).
### Appendix B

**Schools with Missing Data**

<table>
<thead>
<tr>
<th>District</th>
<th>School Name</th>
<th>Missing Data</th>
<th>Information about data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>MNPS Virtual School</td>
<td>Absent</td>
<td>&lt; 5% data is suppressed (put 2.5%)</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Nashville Big Picture High School</td>
<td>Grad Rate</td>
<td>Grad Rate: &gt; 99% data is suppressed (put 99.9%)</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Hume-Fogg High School</td>
<td>Grad Rate,</td>
<td>Grad Rate: &gt; 99% data is suppressed (put 99.9%); Ready2Grad: &lt; 5% data is suppressed (put 2.5%)</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Martin Luther King Jr School</td>
<td>Grad Rate,</td>
<td>Grad Rate: &gt; 99% data is suppressed (put 99.9%); Ready2Grad: &lt; 5% data is suppressed (put 2.5%)</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Knowledge Academies High School</td>
<td>Grad Rate</td>
<td>Grad Rate: 86.2% found on individual report card</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Chatt High Center For Creative Arts</td>
<td>Grad Rate</td>
<td>Grad Rate: &gt; 99% data is suppressed (put 99.9%)</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Chattanooga School For Arts And Sciences Upper</td>
<td>Grad Rate</td>
<td>Grad Rate: 99.0% found on individual report card</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Hamilton County Collegiate High at Chattanooga State</td>
<td>Ready2Grad, Absent</td>
<td>Ready2Grad: &lt; 5% data is suppressed; Absent: &lt; 5% data is suppressed (put 2.5% for both)</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Lookout Valley Middle / High School</td>
<td>Grad Rate</td>
<td>Grad Rate: 94.6% found on individual report card</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Chattanooga Girls Leadership Academy</td>
<td>Grad Rate,</td>
<td>Grad Rate: &gt; 99% data is suppressed (put 99.9%); Absent: &lt; 5% data is suppressed (put 2.5%)</td>
</tr>
<tr>
<td>Knox County Schools</td>
<td>L N STEM Academy</td>
<td>Grad Rate</td>
<td>Grad Rate: 98.5% found on individual report card</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Hollis F. Price Middle College</td>
<td>Grad Rate</td>
<td>Grad Rate: 96.4% found on individual report card</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Middle College High</td>
<td>Grad Rate</td>
<td>Grad Rate: 95.8% found on individual report card</td>
</tr>
<tr>
<td>School Name</td>
<td>School Type</td>
<td>Grad Rate</td>
<td>Notes</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>------------------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Northwest Prep Academy</td>
<td>Ready2Grad</td>
<td>Ready2Grad: &lt; 5% data is suppressed (put 2.5%)</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Carver College and Career Academy</td>
<td>Ready2Grad</td>
<td>Ready2Grad: &lt; 5% data is suppressed (put 2.5%)</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Memphis Virtual School</td>
<td>Absent</td>
<td>Absent: &lt; 5% data is suppressed (put 2.5%)</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Memphis School of Excellence</td>
<td>Grad Rate</td>
<td>Grad Rate: &gt; 99% data is suppressed (put 99.9%)</td>
</tr>
<tr>
<td>Achievement School District (ASD)</td>
<td>MLK Prep High School</td>
<td>Ready2Grad</td>
<td>Ready2Grad: &lt; 5% data is suppressed (put 2.5%)</td>
</tr>
<tr>
<td>Achievement School District (ASD)</td>
<td>Hillcrest High School</td>
<td>Ready2Grad</td>
<td>Ready2Grad: &lt; 5% data is suppressed (put 2.5%)</td>
</tr>
</tbody>
</table>
## Appendix C

*Schools Omitted from Study*

<table>
<thead>
<tr>
<th>District</th>
<th>School Name</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>W. A. Bass Adult Program</td>
<td>Not a regular High School-Adult Learners</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>W.A. Bass Alternative Learning Center</td>
<td>Not a regular High School-Alternative Route to Diploma</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Harris-Hillman Special Education</td>
<td>School serving students with multiple disabilities and dual diagnoses ages 3-22 years</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Cora Howell School</td>
<td>Special day school for those students whose learning differences are so significant that they cannot effectively learn within the context of a less restrictive environment.</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Early College High School</td>
<td>Grad Rate: &lt; 10 Students; Ready2Grad: &lt; 10 Students</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Transitions at Bass</td>
<td>The Transitions program serves 3rd and 4th year high school students who may be over age and under-credited.</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Valor Flagship Academy</td>
<td>Ready2Grad: No Data</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Johnson Alternative Learning Center</td>
<td>At Johnson Learning Center and MNPS Middle, we focus on academic excellence and maintaining a positive school environment. Students in grades 6-12 are served from six weeks to one calendar year, depending on the circumstances of their expulsion.</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Chattanooga School for the Liberal Arts</td>
<td>9th grade only for High School</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Chattanooga Preparatory School</td>
<td>9th grade only for High School</td>
</tr>
<tr>
<td>Knox County Schools</td>
<td>Richard Yoakley School</td>
<td>Richard Yoakley provides rigorous instruction and utilizing trauma-informed instructional practices. Academic instruction follows</td>
</tr>
<tr>
<td>Knox County Schools</td>
<td>KCS Virtual High School</td>
<td>Ready2Grad: No Data</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Knox County Schools</td>
<td>Knox Adaptive Education Center</td>
<td>The goal of the program at KAEC is to re-educate students who have not been successful in their zoned schools in emotional self-regulation, improved decision-making, problem-solving techniques, and social interactions, to prepare them to return to and be successful in their zoned school, while maximizing each student’s academic progress.</td>
</tr>
<tr>
<td>Knox County Schools</td>
<td>Ridgedale Alternative School</td>
<td>The Middle School Alternative Program provides an opportunity for students in grades 6 - 8 to continue their education during a long-term suspension from their base school. The Special Day School Program provides services for students, ages 5 through 22, who are eligible for special education services or may be suspected of having a disability under IDEA.</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Medical District High School</td>
<td>9th grade only for High School; Opened August 2021, replaced Southwest CC High School</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Southwest Community College High School</td>
<td>Closed</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Mt. Pisgah Middle/High</td>
<td>6-8 Grades Only now</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Avon School</td>
<td>Avon Lenox School is dedicated to assisting students achieve their maximum potential for effective independent living and functioning in a diverse society. (12th Grade only)</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Shrine School</td>
<td>Shrine School is a public school in Memphis, Tennessee serving students with multiple disabilities and dual diagnoses ages 4-22 years old who live in Shelby County.</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Exceptional Children Special Placements</td>
<td>No Information- Exceptional Placements, State Report Card refers to MSCS District Office for Address</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Crosstown High School</td>
<td>Ready2Grad: No Data</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Trezevant Career and Technology Center</td>
<td>CTE Center- Not a High School Serves three High Schools as Vo-Tech/CTE</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>City University School of Independence</td>
<td>Only 14 Students total- same school as City University Liberal Arts will all data</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>The Excel Center</td>
<td>Free High School for Adults to finish or achieve their High School Diploma</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Collierville Virtual Academy</td>
<td>No Data and students can transfer back to CHS, Several pieces of data show less than 10 students</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Germantown Online Academy of Learning</td>
<td>No Data and students can transfer back to HHS, Several pieces of data show less than 10 students</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Pathways in Education- TN</td>
<td>Ready2Grad, Absent, ACT Missing: Has Grad rate of 7%, All other missing data is suppressed &lt; 5%</td>
</tr>
<tr>
<td>Achievement School District (ASD)</td>
<td>Pathways in Education- Whitehaven</td>
<td>Grad, Rate, ACT, Absent, Ready2Grad Missing: All data is suppressed &lt; 5%</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Carver High School</td>
<td>Grad Rate is outlier with 9%</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Sequoyah High School</td>
<td>Student w/ Disabilities Pct is an outlier with Z Score of 3.27549 or 28 %</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Signal Mountain Middle/High School</td>
<td>Counselor Ratio is an outlier w/ Z Score of 4.99931 or 835/1</td>
</tr>
<tr>
<td>School System</td>
<td>High School</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Hamilton County Schools</td>
<td>Hamilton County Virtual School</td>
<td>Counselor Ratio is an outlier w/ Z Score of 3.50390 or 667/2</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Hume-Fogg High School</td>
<td>ACT Comp Score is an Outlier w/ Z Score of 3.00560 or 27%</td>
</tr>
<tr>
<td>Memphis-Shelby County Schools (MSCS)</td>
<td>Sheffield High School</td>
<td>Model 1 Standardized Value - 3.59479</td>
</tr>
<tr>
<td>Metro Nashville Public Schools (MNPS)</td>
<td>Glencliff High School</td>
<td>Model 2 Absent Standardized Value -3.45947</td>
</tr>
</tbody>
</table>
## Appendix D

*High schools used in study breakdown*

<table>
<thead>
<tr>
<th>Location</th>
<th>Shelby Co. (MSCS, ASD, &amp; Municipalities)</th>
<th>Davidson Co. (MNPS)</th>
<th>Knox Co. (Knox Co. Schools)</th>
<th>Hamilton Co. (Hamilton Co. Schools)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of schools including 9-12 in Report Card Data</td>
<td>50</td>
<td>28</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Number of schools excluded</td>
<td>15</td>
<td>9</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Median income (United States Census Bureau, 2021)</td>
<td>$29,815</td>
<td>$34,518</td>
<td>$30,494</td>
<td>$30,545</td>
</tr>
</tbody>
</table>