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Urbanicity in Kentucky: A Study of Academic Achievement  
in Urban *versus* Rural Students

By Kayla Manley

Senior Honors Thesis

Submitted in partial fulfillment of the requirements for graduation  
*summa cum laude* and for graduation from the Department of  
Psychology

University of Louisville

May 2018

Urbanicity in Kentucky: A Study of Academic Achievement  
in Urban *versus* Rural Students

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### **Abstract**

When studying urbanicity, there is a large belief that rural students lag behind their urban counterparts in academics, both in preparation and success. This belief emerges as early as kindergarten and follows students up through secondary education. However, previous research has shown inconsistent results in how these students perform. The objective of this study was to determine if differences occurred in urban and rural students in their preparation for college, their perceptions of college, and academically once coming to college. Students from the Cardinal Covenant program at the University of Louisville ( $N = 54$ ) were studied using information from the Beginning College Survey of Student Engagement (BCSSE) and grade point averages (GPA). The results showed that there were no significant differences between urban and rural students.

## Introduction

College is integral in today's economic society. The Department of Labor (2015) found that those with less than a high school diploma earn around \$25,000 a year, those with a bachelor's degree make over twice as much as that at around \$57,000 a year, and those with a doctorate degree reap the highest income levels at around \$72,000 a year. College and other forms of post-secondary education are important not only for economic benefits but also for personal and educational growth and development. Kentucky presents two major obstacles to college success: rural environments during secondary education and poverty across all types of living environments. Given the importance of college and other forms of post-secondary education, it is crucial to understand how these obstacles contribute to students' college experiences.

Kentucky is largely considered a rural state. In 2010, over 40% of the people living in Kentucky lived in a rural area (U.S. Census Bureau, 2012). Louisville, however, is very much an urban city. The U.S. Census Bureau (2010) considers Jefferson County, which encompasses all of Louisville, over 98% urban. Students who have committed to the University of Louisville can expect a large, diverse population of students. College can be an exciting time in a student's life, but it can also be a difficult transition from high school, especially for students who are moving away from a small town to a large city. The University of Louisville had more than 20,000 students enrolled in fall 2016 – the incoming freshman class consisted of nearly 3,700 students. This might shock a student coming from a rural town with a total of 3,700 people.

There is a wide-spread belief that rural students lag behind their urban counterparts in education and preparedness for college. To understand this, we must look at the differences between urban and rural schools. Vernon-Feagans, Gallagher, and Kainz (2008) summarized

characteristics typical of rural areas with implications for rural education. They found that rural areas usually have smaller high schools whereas urban high schools are larger. Moreover, smaller schools typically offer less comprehensive classes than larger schools, especially in science and math (Haller, Monk, & Tien, 1992). Rural schools are also less likely to offer college prep classes, such as Advanced Placement (AP) or International Baccalaureate, which gives high-school students a chance to earn college credit, giving them a head start once they enroll in college (Greenberg & Teixeira, 1995; Yoder, 2008). Provasnik et al. (2007) found that 52% of rural schools offered AP classes compared to 78% of urban schools. Of those schools that offered AP classes, fewer rural students took advantage of them, with only 69% of students enrolled in an AP class. For urban students, 93% of them chose to enroll in AP classes. On the other hand, rural and urban schools offered dual credit courses at an equal rate, with both at around 67%. However, AP courses offer a slight advantage over dual credit, since they guarantee some sort of college credit at an accredited university provided students obtain a good score, whereas not all universities will accept all dual credit courses. Downey (1980) found that if one compares urban and rural students who have completed college prep courses, they have little to no differences in their high school grades. This is an important implication for rural students who, on average, complete fewer college prep courses.

Teachers in rural and urban schools also differ, and these differences can be found as early as elementary school. Cook and Van Cleaf (2000) surveyed first-year elementary-school teachers from urban and rural areas. They found that urban teachers felt that they were more prepared to work with a diverse classroom and that they better understood the socioeconomic needs of their students than rural teachers. This impact at an early age might affect how students feel they can relate to teachers up through high school. Furthermore, teachers at rural high

schools have a higher turnover rate and tend to have poorer credentials than those at large urban schools (Haller, Monk, & Tien, 1992). Carlsen and Monk (1992) found that urban science teachers in Pennsylvania had more experience teaching not only science, but also teaching of any kind, having on average 2 – 3 more years of experience. Urban teachers also taught in the same district and in the same high-school building for a longer period. However, Abel and Sewell (1999) found that urban high-school teachers reported higher stress. Their stress stemmed from poor working conditions such as inadequate pay and poor staff relations including lack of support from administration. Rural and urban teachers had the same amount of stress for pupil misbehavior and time pressures from paperwork and demands of after-school activities. Despite this, urban students tend to exhibit higher levels of behavioral problems (Miller, 2014). Overall, it seems that although urban teachers feel more prepared and have higher credentials, they have greater stress in areas that rural teachers do not. Although the stress may or may not directly impact students, qualifications and teaching experience do.

Rural students tend to have lower aspirations for attending college. Some rural communities do not view college as an asset, so students are deterred from going to college. Many rural areas rely on jobs that do not require a college degree, such as manufacturing, mining, farming, and service industries (Khattri, Riley, & Kane, 1997). Even though support is growing from rural parents to send their children to college, many parents remain unsupportive (Tieken, 2016). If students do go to college, they often must move away from home. This results in a lack of valuable community and family support that is necessary for adjusting to college. Moving away can be especially hard for students from low-income rural areas, since familial and social support tend to be stronger there than in urban areas (Miller, 2014). Leaving a home with strong familial ties can also result in pressures to visit home often or even move back, leaving

college altogether (Philips, 2015).

Haller and Virkler (1993) looked at the educational aspirations of rural and urban high school juniors and seniors. They asked students what the highest level of education was that they expected to complete, with 1 being the lowest at less than high school and 9 being the highest at a Ph.D., M.D., etc. Urban students answered only slightly higher than rural students, having a 0.5 difference. The “high school graduate” category had the largest gap, with 26% of rural students seeing themselves as only graduating high school versus 19% of urban students. Even though there is not much difference overall when looking at urban and rural students who expect to go to college, there is a considerable gap in those who think they cannot make it to college, with rural students viewing themselves as less likely to go on to college.

It also seems that rural students feel stronger ties to their communities. Cox, Tucker, Sharp, Van Fundy, and Rebellon (2014) interviewed 29 rural students, who had just graduated from high school, about their hometowns. A majority of students left their hometown after graduating. Of those who left, more than 80% were enrolled in a 4-year college. Of those who stayed, 54% were enrolled in community college. Nearly all the students expressed fondness for their hometown, saying they loved the people there and felt that the environment was safe and comfortable. However, they saw few opportunities for jobs or to succeed economically.

Gartia (2012) examined how familial relationships affected academics in undergraduate college students. Using the Family Environment Scale, students answered questions related to parenting styles, such as their parents’ levels of acceptance, caring, conflict, and control. He found that rural students had a more positive family environment than urban students, and that those from positive family environments performed better academically based on examination scores. However, whether these students still lived at home or how far away their parents lived



from the university is unknown. Students who move away from a positive family environment may be impacted more from the loss of a supportive familial network.

Another reason for disparity in education is access to resources. Rural students in general have access to fewer resources than urban students. Rural schools are less competitive for federal funding compared to urban schools (Beeson, 2003) and, on average, have fewer educational centers such as libraries and museums. Rural families live farther away from these types of resources than urban families by more than 10 miles, and they have fewer options of using public transportation to get there (Miller, Votruba-Drzal, & Setodji, 2013). This can inhibit children's development if families lack adequate access to educational resources.

It is believed that these disadvantages in rural areas have contributed to the lower educational levels in rural students. Academic preparation is an important factor to consider for students who attend college. Research has found that rural students tend to be less advanced in their academic skills than urban students from as early as kindergarten. Grace et al. (2006) studied rural and urban kindergarten classes and found rural children to be less proficient in letter recognition and identifying the beginning sounds of words. In high school however, the results varied.

Yoder (2008) studied 24,000 urban and rural students who were admitted to North Carolina State University. The University, located in the heart of Raleigh, North Carolina, is situated in Wake County. More than 90% of this area is considered urban, making it similar in urbanicity to Louisville (U.S. Census Bureau, 2010). Yoder studied two freshman cohorts – one from 1999 and one from 2000. He found that urban students outperformed rural students on the SAT, scoring nearly 13 to 16 points higher. Those with a higher SAT score had a significantly greater chance of being admitted to the university. The same was true for high school GPA,

although rural and urban students did not differ as significantly (3.69 versus 3.61, respectively). Urban students took more AP and honors classes in high school than rural students, with rural students taking on average 4.5 classes, while urban students took on average close to 6. This mirrors research that shows pre-matriculation preparation is an important measure for predicting college grade point average (GPA) (Bean, 1985). Both high school GPA and ACT scores accurately predicts success in the first year or two of college (Noble & Sawyer, 2002).

Provasnik et al. (2007) measured urban and rural students' scores across America on the National Assessment of Education Progress in math, science, and reading. They found that a greater percentage of rural, fourth grade students scored at or above the *Proficient* level compared to urban students. The science scores revealed the largest differences, with 32% of rural students scoring at or above *Proficient*, while only 19% of urban students hit this mark. Researchers found the same trend in eighth grade, with rural students performing better in all three categories. The largest difference was again in science, although slightly smaller, with 30% of rural students performing at or above *Proficient*, while only 19% of urban students performed as well. In twelfth grade however, differences diminished. Although rural students were still generally outperforming urban students, the largest gap in scores was only a 5% difference.

One study by Reeves and Bylund (2005) looked at urban and rural schools specifically in Kentucky. They studied the effects of location in school performance and improvement in over 1,000 schools between 1999 and 2003. Their study was unique in three ways. First, they focused on school accountability rather than individual performances using the Composite Accountability Index used by the Kentucky Department of Education. The accountability index includes variables such as achievement in reading, writing, math, art, science, and other subjects, along with non-cognitive performances such as daily attendance, retention rates, and successful

transitions out of high school. Second, they used a detailed breakdown of location rather than just urban/rural or even urban/suburban/rural. They divided each area into metro, adjacent metro, large town, small town, and rural. Third, they used a longitudinal study approach to examine not only differences between schools, but also differences in performances within schools.

Their results showed that students from metro areas scored better than rural areas over five years, scoring about 4 – 7 points higher. Metro areas have been consistently conflated with urban areas, with the main difference being that metro areas are typically large cities, while urban areas can be large or small. Rural schools consistently performed the worst. Although both urban and rural areas increased over the five years, they found that rural students had a greater mean average gain in performance compared to urban students. Thus, although rural students were continually performing worse, the gap between rural and metro students slowly closed with each year.

Part of the reason for inconsistent findings in previous studies may be due to the failure to control for income. Poverty in the United States remain a serious problem, with nearly 1 in 8 people living in poverty (Proctor, Semega & Kollar, 2016). In Kentucky, 19.1% of people live below the federal poverty line, ranking it as the fifth most impoverished state in the U.S. (U.S. Department of Commerce, 2014). Although poverty impacts students in all areas, poverty rates tend to be higher in rural communities (Miller, Votruba-Drzal, & Setodji, 2013). In Kentucky, almost 16% of people living in urban areas live below the poverty level. In rural areas, that number jumps to over 25% (Johnson & O'Hare, 2004). Failure to consider this could result in skewed results, since impoverished areas have fewer resources designated for education.

Poverty appears to be a major factor in determining who attends college. According to College Board, the average price of a public four-year institution was \$9,650 for the 2016-2017

school year (2016a). Kentucky was above that average at \$9,950. Tuition for colleges has steadily climbed since the 1970s, with students seeing a 280% increase in fees (College Board, 2016b). Students find the financial burden of college daunting, and for those who do not receive enough scholarships, paying for college may be impossible.

Strong academic preparation and achievement in school stands out as a critical predictor of successful college completion for low-income students (Lee, Daniels, Puig, Newgent, & Nam, 2008). Lower-income students tend to have lower success rates in completing college, with some rates as low as 14% compared to 60% of high-income students (Bjorklund-Young, 2016). Only half of the students from low-income high schools are considered academically qualified, versus 86% of students from high-income high schools (Gladieux & Swail, 2000). The same study also found that 40% of students in the highest income quartile graduate with a four-year degree in comparison to only 6% of students in the lowest income quartile.

Poverty can also affect children's academic skills from an early age. Miller, Votruba-Drzal, and Setodji (2013) examined how annual income impacts academic achievement across the urban-rural continuum. Using data from the Early Childhood Longitudinal Study, they compared reading and math scores between urban and rural students, dividing each family into \$10,000 income increments. They found that urban families making at least \$32,500 a year saw the largest increase in scores with each \$10,000 increase, with reading scores jumping more than 2 points and math scores jumping 1.5 points. In rural families, this significant of an increase was not found until families made more than \$65,000 a year. Therefore, families in urban areas with a lower income threshold see a greater impact on academics. One reason for this may be that urban areas have more diverse resources available, so when one moves up on the income scale, they have greater access to resources such as better schooling, tutors, and books. In rural areas,

there may not be as disperse of resources, making it more accessible to everyone and not just the wealthier, hence why academic increases are not seen until a family makes over \$65,000 a year. Indeed, a similar study by Votruba-Drzal, Miller, and Coley (2015) found that poverty had the largest impact on students in urban areas. Urban students in poverty had the lowest scores on reading and math compared to rural students and even suburban students in poverty. This might give rise to the hypothesis that children in poverty would fare better in rural areas than in urban areas, since resources are more evenly dispersed amongst low and high incomes.

Kathri, Riley, and Kane (1997) conducted a literature review of urban and rural students from areas of poverty. They found that students from poor rural areas perform better academically than students from poor urban areas. However, in the literature they reviewed, poverty was not strictly controlled. Although it is apparent that poverty does play a role, very few studies look at urban/rural *and* income levels. Therefore, it is not clear whether it is strictly poverty that is playing a role or poverty in certain areas.

A study by Corley, Goodjoin, and York (1991) examined minority freshman students from the 1988 cohort and the 1989 cohort at South Carolina State College, which is a small historically black college with fewer than 3,000 undergraduate students. Located in Orangeburg County, the U.S. Census Bureau (2010) considers the area over 60% rural. The researchers found that rural students were more likely to be from low-income families, so they used income as a second main effect. Their findings showed that rural students scored lower on the SAT by 20 – 30 points, but only for the 1988 cohort. In 1989, that gap was only 10 – 15 points lower. Surprisingly, they found that rural students from both cohorts had higher high school grades by nearly half a letter grade. Rural students also had somewhat better grades than urban students in college. Grade differences were not seen between high- and low-income students, and there were

no significant interactions between urbanicity and income level.

Another reason for inconsistent findings in previous studies is due to variable operationalizations of “urban” and “rural.” Federal agencies alone use more than two dozen different definitions (Cromartie & Bucholtz, 2008). Some studies use as many as six or seven different classifications ranging from “small town” to “large metro,” while others only use two or three. These inconsistencies make it almost impossible to compare results across different studies. Depending on the definition, the number of rural students could range from 1.1 million to more than 16 million (Arnold, Newman, Gaddy, & Dean, 2005).

Fan and Chen (1998) studied students in eighth grade and followed them through tenth and twelfth grade. They set out to examine differences that existed in rural and urban high-school students in their academic performance in reading, math, science, and social studies. They considered both the problems of inconsistent “rural” and “urban” definitions and the lack of controlling for socioeconomic status (SES) in previous studies. Using standardized test scores from the National Education Longitudinal Study of 1988, they sampled over 24,000 students. They divided each grade into four ethnicities (Asian/Pacific, Hispanic, Caucasian, and African American) and adjusted for SES. In eighth grade, rural students performed better in science across all four ethnicities, but the other areas were similar. This gap closed by twelfth grade, with none of the scores being statistically significant.

Although the belief that rural students lag behind their urban counterparts stands strong, there have been inconsistent results. This thesis will examine rural-urban differences, controlling for economic background by focusing only on students who come from impoverished families who have the cost of college paid for through a scholarship program. It will also address the problem of inconsistent “rural” and “urban” definitions by providing an in-depth comparison of

definitions across multiple classifications. The objective of this thesis is to address three main questions regarding rural and urban students: 1. Do rural and urban students differ in their high school preparation for college? 2. Do they differ in their expectations of college? and 3. Do they differ academically once coming to college?

## **Methods**

### **Participants**

This study has been approved by the Institutional Review Board at the University of Louisville. Fifty-four students were recruited from the Cardinal Covenant program at the University of Louisville. The Cardinal Covenant program is a scholarship program that covers the cost of tuition, books, room, and board for students for four years. To be eligible, the student must be at or below 150% of the federal poverty level and be a resident of Kentucky. The federal poverty line depends on the household size. In 2017, those in a household of three at 150% of the poverty level had an annual income of \$30,630. For a household of four, the annual income was \$36,900. For each increase in household size, the threshold increases by about \$6,000 to accommodate for an additional person. The students who apply for the Cardinal Covenant program must have an ACT composite score of at least 20 and a high school GPA of at least 2.5. In addition, students must complete an essay about how the Cardinal Covenant Program will impact their lives and how they will use it to reach their full potential as a student at the University of Louisville (Cardinal Covenant, 2017).

All students in this study were incoming freshman for the 2016-2017 school year. Of the 54 students participating in this study, 61% were female, 35% were male, and 4% did not specify their gender. All participants were 18 years of age, with the exception of one 19-year old and one 20-year old. Fifty-seven percent of participants were of white/European descent, 13% were of

African American descent, 13% were multiracial, 9% were of Asian/Pacific islander descent, 6% were of Hispanic descent, and 2% were not specified.

## **Measures**

### *Rural-urban classification*

The first step was to determine whether students came from an urban or rural town. ZIP codes of where the student lived during high school were used to determine in which county the student resided. Because the rural-urban spectrum is so complex, there were 3 classifications used to help create the best definition. The first and primary one used was the 2010 U.S. Census Bureau classification. This definition focuses mainly on population density, with an urban cluster being an area that has at least 2,500 people but fewer than 50,000 people, and an urban area being an area that has 50,000 people or more. For the purpose of this study, urban area and urban cluster were combined into “urban.” Rural is considered everything else not classified into those two categories. Aside from population density, the U.S. Census Bureau also takes land use and distance between urban development areas into consideration (Ratcliffe, Burd, Holder, and Fields, 2016), making it a well-rounded definition. The other strength of the U.S. Census Bureau classification is that it breaks down what percentage of the county is urban and what percentage is rural.

The second classification system that was used was the 2013 National Center for Health Statistics (NCHS) Urban-Rural Classification Scheme for Counties. This classification breaks down each county into 6 different categories. For the purpose of this study, the metropolitan categories were classified as “urban,” and the micropolitan and nonmetropolitan counties were classified as “rural.” The final classification used was the United States Department of Agriculture’s 2013 rural-urban continuum codes. Their definition breaks down rural and urban



into 9 different categories based on metropolitan and nonmetropolitan counties. Metropolitan areas were considered urbanized areas with 50,000 or more people, or outlying counties with at least 25% of residents commuting to central counties for their place of employment.

Nonmetropolitan counties were considered everything outside of the metropolitan boundary.

Again, metropolitan areas were considered “urban” and nonmetropolitan areas were considered “rural.”

The first step in classifying students background utilized the U.S. Census Bureau classification. Counties that were considered over 70% urban or rural were labeled as such without consulting the other two classifications. This applied to 24 ZIP codes and 36 students, which is over half of the database. If at least 70% of the population of the ZIP code was not considered rural or urban, the ZIP code was then compared across all three classifications. Only three ZIP codes (four students) did not align across all three classifications as either rural or urban. A decision about how to classify these areas was ultimately made after consulting the city that the ZIP code encompassed – a city with a population of less than 20,000 was classified as rural and a population over 20,000 was classified as urban. After using this method to classify students’ urbanicity, there were 38 urban students and 16 rural students.

#### *Beginning College Survey of Student Engagement*

Data from the Beginning College Survey of Student Engagement (BCSSE) 2016 was used to measure students’ high-school preparation and their perception of college. The BCSSE has been used by over 450 institutions to measure students’ past school experiences and expected engagement in college. It has been deemed an adequate tool by researchers (Cole & Dong, 2013). The BCSSE was administered to all incoming freshman at the University of Louisville prior to the start of the school year in the fall.

Three sections from the BCSSE were used for this study – expected academic perseverance, expected academic difficulty, and perceived academic preparedness. A detailed look at these questions can be found in Appendix A. Expected academic perseverance was measured using questions 17a – 17f. It includes questions such as “how certain are you that you will participate regularly in course discussions?”, which is measured on a scale from 1 = *not at all certain* to 6 = *very certain*. These six questions were combined into a single average score. Expected academic difficulty was measured using questions 18a – 18f. It includes questions such as “how difficult do you expect learning course material will be?”, which is measured on a scale from 1 = *not at all difficult* to 6 = *very difficult*. These six questions were combined into a single average score. Both scores were used to measure students’ expectations of college. Perceived academic preparedness was measured using questions 20a – 20g. It includes questions such as “how prepared are you to learn effectively on you own?”, which is measured on a scale of 1 = *not at all prepared* to 6 = *very prepared*. These seven questions were combined into a single average score. This was used to measure students’ preparation from high school, along with number of AP classes taken (question 6), high school GPA, and ACT scores.

### *Academic performance*

Student transcripts from the 2016-2017 school year were obtained and used to examine academic achievement in college. GPA was analyzed for the fall 2016 semester, spring 2017 semester, and cumulatively across both semesters.

### **Analysis**

An independent samples *t*-test was used to analyze the mean differences between rural and urban students in three separate categories: high school preparedness, college expectations, and college academic achievement. The statistical software used was the 24<sup>th</sup> version of SPSS.

Individuals with missing data were omitted from the analysis. The first question in this study was “Do rural and urban students differ in their high school preparation for college?” High school preparedness was measured by: comparing a single mean score from seven items, questions 20a – 20g on the BCSSE; ACT score; number of AP classes taken; and high school GPA. For high school GPA, anything above a 4.0 was adjusted down to a 4.0. This is because not every high school offers college prep courses that result in a GPA above 4.0. The second question was “Do they differ in their expectations of college?” College expectations were measured using two questions from the BCSSE. The first question was used to measure expected academic perseverance using a single mean score of six items, questions 17a – 17f. The second question was used to measure expected academic difficulty using a single mean score of six items, 18a – 18f from the BCSSE. Finally, the last question was “Do they differ academically once coming to college?” College academic achievement was measured using the cumulative GPAs from the fall 2016 and spring 2017 semesters.

## Results

A summary of the results can be found in Table 1. None of the rural-urban differences reached conventional levels of statistical significance. On the perceived high school preparedness score from the BCSSE (question 20), urban students were slightly more confident ( $M = 4.97$ ,  $SD = 0.64$ ) than rural students ( $M = 4.79$ ,  $SD = 0.65$ ),  $p = .38$ . Rural students had a slightly higher high school GPA ( $M = 3.72$ ,  $SD = 0.30$ ) than urban students ( $M = 3.60$ ,  $SD = 0.40$ ),  $p = .28$ . Rural students also had slightly higher ACT scores ( $M = 26.94$ ,  $SD = 3.50$ ) than urban students ( $M = 25.24$ ,  $SD = 3.72$ ),  $p = .12$ . Rural students took more AP classes ( $M = 3.20$ ,  $SD = 1.32$ ) than urban students ( $M = 2.89$ ,  $SD = 1.51$ ),  $p = .47$ . Two urban students' AP class data was not available, and one rural student's data was not available.

Expected academic difficulty from the BCSSE (question 17) was the least significant finding, with urban students ( $M = 4.90$ ,  $SD = 0.64$ ) and rural students ( $M = 4.96$ ,  $SD = 0.61$ ) having nearly identical results,  $p = .77$ . Rural students had slightly higher perceived academic difficulty from the BCSSE (question 18) ( $M = 3.36$ ,  $SD = 0.70$ ) than urban students ( $M = 3.21$ ,  $SD = 0.80$ ),  $p = .50$ .

Interestingly, urban students had a higher college cumulative GPA ( $M = 2.96$ ,  $SD = 0.80$ ) than rural students ( $M = 2.44$ ,  $SD = 1.30$ ),  $p = .08$  at the end of the academic year. Two additional tests were run for the GPA terms separately. The urban students had a higher GPA in the fall 2016 semester ( $M = 3.02$ ,  $SD = 0.74$ ) than the rural students ( $M = 2.48$ ,  $SD = 1.29$ ),  $p = .053$ . The same was true for the spring 2017 semester for the urban and rural students respectively ( $M = 2.85$ ,  $SD = 0.96$ ;  $M = 2.31$ ,  $SD = 1.57$ ),  $p = .13$ . One urban student's data was missing for the cumulative GPA and the spring semester GPA, as she was no longer enrolled in school during the spring semester.

## Discussion

Despite the often expressed belief that rural students lag behind their urban counterparts, the literature reveals inconsistent results. Some studies have found that rural students tend to have lower ACT (Downey, 1980) and SAT scores (Corley, Goodjoin & York, 1991; Yoder, 2008), as well as perform worse academically in high school (Corley, Goodjoin, & York, 1991; Reeves & Bylund, 2005). Some studies have found no difference in high school grades between rural and urban students (Fan & Chen, 1998; Yoder, 2008) while others have found that rural students perform better (Gartia, 2012; Provasnik et al. 2007). The majority of research has failed to control for income, and many have failed to account for poverty. Based on the analysis in this study, rural students seem to fare just as well as urban students on all the measures after holding

economic background and college costs constant.

One limitation of this study is the small sample size, both overall and of rural students. In this study, only 16 of the 54 students were from rural areas. At the end on the spring 2017 semester, one of those students had already unenrolled from the university, and it is likely that more will unenroll in the coming years. Rural students are vastly underrepresented in universities and colleges. In 2015, 33% of people living in urban areas had a bachelor's degree or higher. For people in rural areas, that number was only 19% (U.S. Department of Agriculture, 2017). Yoder (2008) found in his study of students from North Carolina State University that urban students were more likely to be admitted than rural students, at 77.5% versus 55%. Rural students also did not apply at equal rates to their urban counterparts. Because of the small sample size of this study, "suburban" was not considered as a classification. The literature, however, has found that even suburban students may differ from their urban and rural counterparts.

Another explanation for the variability in results may not be due to urbanicity, but rather to the distance in miles from a student's hometown. Some studies have shown that it is not urbanicity that matters but how far the student previously lived from the university. Williams and Luo (2010) found that out of almost 1,500 freshman students, those whose hometown was within 50 miles of the university were less likely to drop out. Those whose hometown was more than 50 miles away reduced first-year persistence by 10% regardless of urbanicity. In a city like Louisville, a student who lives 30 minutes away in one direction might still be considered living within an urban area, while 30 minutes in another direction might be located within a rural area. The farther away a student lives, the harder it is for them to adjust.

The current study could be expanded to include the students' hometown distance in miles as a variable compared to academic achievement. Distance is especially important for students

who come from poverty. For these students, there can be pressure to return home and support the family. The farther away a student lives, the more pressure they may feel from lack of support. For those who live far from the university, the pressure to return home could result in leaving the university all together. Therefore, it is important for colleges to have support systems in place such as the Cardinal Covenant to help students feel that they have the adequate tools on campus to succeed. Programs, like structured advising, are especially advantageous for students from low socioeconomic backgrounds who often do not know what questions to ask, do not think they need help, or do not take the initiative to seek help (Deil-Amen & Rosenbaum, 2003). Maybe the focus should not be on rural or urban students separately but on students who move far away and have a harder time adjusting to life away from home.

As previously stated, many studies that examined urbanicity did not control for income and therefore might have exaggerated differences. Although poverty affects both rural and urban areas, it has a larger impact on rural areas. In studies where income is not controlled for, rural areas are associated with poverty whereas urban and suburban areas are not. Moreover, many studies do not take urban inner-cities into consideration, where most of the poverty rates are concentrated, when examining urbanicity differences. These inner-city schools have comparable rates to those of rural schools, if not slightly lower since they are typically in low-income areas. Inner-cities tend to be characterized by neglected neighborhoods with high rates of violence and crime. This can lead to higher environmental stressors and parental distress, which can have negative impacts on students' educational development compared to rural students (Miller, 2014).

Paying for college is also highly stressful for students who come from poverty. Even though the Cardinal Covenant program pays for college, it does not give students money to pay

for expenses unrelated to college, such as food, gas, rent off-campus, and leisure activities. This is an important factor to consider for students in poverty who, although may not struggle with paying for college, may struggle paying for things in other areas of their lives. In this study, 51 of the 54 participants said before the fall 2016 semester started that they would be working either on-campus or off-campus, with some reporting that they would be working more than 30 hours a week. A strenuous job on top of a student's course work means a busier schedule, which could result in higher levels of stress.

It is important for studies on urbanicity to continue developing. Many studies on rural areas are outdated. Society is seeing a shift away from rural farming towards more diversified economic areas. In 1953, over 15% of people living in the United States lived on farms. In 2003 that number was reduced to less than 1% of the population (Tarmann, 2003). This can be both positive and negative. As rural areas move away from jobs that do not require secondary education, aspirations for young adults to go to college may increase. Rural areas are seeing a decrease in the young adult population who leave for larger, urban areas. In 2014, over 80% of the United States population lived in urban areas, and that number continues to rise (U.N. World Urbanization Prospects, 2014). The main reason rural students are leaving for urban areas is either to pursue higher education or better job opportunities. Once these young adults leave though, they remain in the city. This phenomenon leaves rural areas with a large elderly population and a smaller, less educated young adult population (Vernon-Feagans, Gallagher, & Kainz, 2008). Although the farming industry is shrinking in rural areas, it seems that limited economic opportunities still exist. Indeed, the decline of these industries influence parental support for a college education, students' aspirations for attending college, and students' attitudes about leaving rural areas altogether. Studies must stay up to date with the changes in

rural and urban areas.

One area for further exploration is the types of college courses that rural students take compared to urban students. Tieken (2016) studied rural high-school students' aspirations for college. Many of them were focused on getting majors in fields that guaranteed them a secure job and/or a high income, such as dentistry, physical therapy, and engineering. Guidance counselors also played a role in this, and they were more likely to push students towards degrees with a high economic payoff. It may be that more rural students have "harder" majors such as engineering or pre-med, thus resulting in lower college GPAs. Of course, there is little research on the difficulty of courses in college. This would require an in-depth operationalization of difficulty when comparing courses across disciplines and would have to be unique to each university.

Many previous studies examining urban and rural students either study high school or the first year or two of college, mainly focusing on acceptance rates. There is a large focus on getting rural students into college at equal rates of urban students, but once they are in college there is little focus on what is keeping them there. Tinto (2016) argues that the first year of college is the most critical for development and future success. However, he shows that not enough emphasis is placed on the first year. In his research, large universities typically assign faculty members or adjunct professors with less experience to first-year classes. Student retention does not receive as much attention as other areas such as acceptance rates. Many professors and faculty members feel as if retention rates are not their responsibility.

Unfortunately, there has been little push for faculty members to focus on student learning as a component of retention rates. Without adequate support, these students may feel the burden of school more so than those who live close to their families. Although rural communities are still



an important area to focus on for getting students to college, giving students equal access to college should not be the only focus. In college, we should focus on disadvantaged students and place emphasis on giving them adequate support systems and equal chances for success.

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