The Effects of Rurality on College Access and Choice

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Abstract

Students from rural areas have a history of lower educational attainment at both the K-12 and postsecondary levels, yet this population remains understudied. This study seeks to update past studies of rural youth by examining college attendance and choice decisions for students from non-metropolitan counties. Logistic regression is used to study the postsecondary attendance and institutional choice for rural students. Data are taken from two national data sets, the Education Longitudinal Study of 2002 and the 2004 County Typologies published by the U.S. Department of Agriculture, which are then combined to conduct this analysis. The results of this study reveal clear disadvantages in postsecondary attendance, institutional level, selectivity, and other indicators resulting simply from living in a non-metropolitan county. The effect of most student characteristics did not vary substantially between rural and non-rural areas, but the analysis did reveal one interesting finding: The relationship between college attendance and choice and a student's socioeconomic status was weaker for rural students than for non-rural students. Some systematic variation across rural communities was revealed, as well.

Keywords: rural education, college access

Introduction

Students from rural communities face a number of challenges related to educational attainment. Specifically, rural students have postsecondary attendance and completion rates that lag behind the national average, as well as the rates for urban and suburban sub-groups. Although these communities may be small individually, the United States is home to a significant rural population, and thus the problems of rural people are of national importance. The most recent Census data indicate that more than 60 million Americans live in rural, or nonmetropolitan, areas.

For decades, educational researchers have sought to better understand the needs and challenges of disadvantaged populations, including racial minorities, students with disabilities, and the urban poor, to name a few. The United States has a compelling interest in ensuring that all children have access to a quality education. The value of an educated citizenry is reflected in the consensus that all children deserve a good education, regardless of race, disability, and socioeconomic status. Although extensive research has been done on the educational access of many underrepresented groups, rural students have received relatively little attention. Scholarship on postsecondary access for the rural poor, and rural students generally, is particularly sparse. This study makes significant contributions to this field by filling research gaps related to rural college access patterns.

Adversity is nothing new to rural people. Remote communities face a number of challenges, especially when attempting to keep pace with the rest of the country. Some of the most isolated communities in the United States have, until recently, lacked basic utilities such as electricity, telephone, and water services. Even as public policy has made strides in providing health care and economic development opportunities to rural citizens, the lack of availability of quality education at the elementary, secondary, and postsecondary levels has proved to be an enduring challenge. Therefore, perhaps the greatest benefit this study can provide is to inform policymakers at all levels and encourage the development of policies that utilize money in more targeted and effective ways. Then, real progress can be made in improving the state of rural education nationwide.

Past research using longitudinal data has found significant and persistent postsecondary access challenges for rural populations (for example Adelman, 2002; Byun et al. 2011). However, much of the existing work focuses on longitudinal data sets collected in the 1980's and 1990's. Therefore, this study seeks to better examine data of students who came-of-age after the turn of the millennium. In addition to a re-examination of rural college access, this study seeks to examine the choice decision from multiple institutional perspectives, such as degree level and admissions selectivity. Specifically, this study will address the following research questions:

1) *How does rurality affect college attendance and choice decisions for students?*
2) *How are college attendance and institutional choice influenced by sex, race, socioeconomic status, and past academic preparation? How do these effects vary for rural and non-rural students?*

Literature Review

Through a review of existing literature, this article seeks to frame rurality and highlights various challenges faced by rural populations. Next, prior research on the connection between socioeconomic status and college access and institutional choice is presented, followed by a review of literature focusing specifically on college access and choice for rural youth. By the end, this paper discusses factors that impact rural youth's career choice.

Rural Challenges and the Importance of Rural Places

For much of our nation's history, the majority of the American population resided in rural places. To this day, the United States is still home to some 60 million rural inhabitants (U.S. Census Bureau, 2010). Using data from the National Longitudinal Survey of Youth ("NLSY"), Gibbs (1998) found that, during the 1980s, the median family income level for college attendees from rural communities was 13 percent lower than those from urban areas. He also cited figures from the Census Bureau that showed a gap in median family income of 25 percent. Such gaps are only likely to increase as rural communities become more racially diverse. Non-White populations in rural communities often face greater poverty, as well as occupy some of the most vulnerable sectors of the labor market (Swanson & Brown, 2003). Profit margins from agriculture continue to shrink as a result of decreased government subsidies and a globalized market (Elder & Conger, 2000). Given the boom-and-bust nature of farming, agriculture-based rural communities are often foretellers of economic decline (Luloff, 1990). The same can also be said of mining communities because they, too, are influenced almost exclusively by external economic decisions (Moore, 1999).

Dramatic shifts in local industry structures have exacerbated the economic challenges facing rural residents. When rural residents are not appropriately skilled to work in high-tech industries, those companies are less likely to locate in places with an underprepared labor force. As a result, low-skilled occupations persist, providing little incentive for completing postsecondary education and forcing highly educated residents to migrate to more prosperous communities (Flora & Flora, 2008). Rural "brain drain," or the exodus of educated people from a certain place, and youth outmigration are inextricably linked to each other as well as the previously mentioned economic challenges (Sherman & Sage, 2011). Outmigration of young and educated people has a devastating impact on small communities. As this outmigration occurs, rural communities no longer have the tax or consumer base to continue operating (Carr & Kefalas, 2009; Luloff, 1990), which can lead to the discontinuation of a number of public services, including the local school (Carr & Kefalas, 2009). Rural people and places, however, are of critical importance, as is the improvement of education in these communities. Failure to improve educational access in these places will result in the continued stagnation of national degree-attainment rates while the rest of the world experiences dramatic increases (Bowen, 2006; Callan, Finney, Kirst, Usdan, & Venezia, 2006), which may result in decreased economic competitiveness globally (Callan et al., 2006), as well as decreased workforce participation rates locally (Fuguitt, 1989).

Educational Attainment in Rural America

Of all the areas in which rural areas struggle, educational attainment may be the most critical due to its connection to other important social outcomes such as employment, occupational status, income, and civic participation. Education is the bedrock upon which professional success is built, and the persistent lag in attainment among rural residents is a contributing factor to on-going economic and social struggles (Bowen, Chingos, & McPherson, 2009; Budge, 2006; Fuguitt et al. 1989). Comparing with urban and suburban students, rural high school graduates had the lowest postsecondary participation rate in the NELS:88 cohort, particularly those from low-income families (Adelman, 2002). Gibbs (1998), using data from the NLSY from the Bureau of Labor Statistics, found that rural residence had a strong, detrimental effect on college attendance, even when controlling for other individual and familial characteristics.

There are a number of factors related to social, cultural, and financial capital that effect educational outcomes for these students. Socioeconomic status, inclusive of income, parental education level, and parental occupational status, has been found to be influential. In particular, lower socioeconomic status has a greatly detrimental effect on postsecondary outcomes for rural students (Adelman, 2002; Gibbs, 1998; Lichter et al., 2003), and may in fact be "the single largest factor elevating rural dropout rates relative to urban and suburban rates" (Paasch & Swaim, 1998, p. 53). Lower family income becomes an even greater obstacle as college tuition rates continue to rise, thus making financial aid a critical factor in the college attendance and choice decision.

College Access and Choice for Rural Students

Despite the brain drain concern raised previously, we must continue to increase educational opportunities for rural residents. The United States has perhaps the most diverse higher education system in the world with options ranging from research universities and liberal arts colleges to vocational schools and community colleges. One would think that such a system would inherently provide both access and broad institutional choice to students; however, the availability of options, and of postsecondary education in general, is not equitable (Bergerson, 2009). Bergerson (2009) continues by stating that access concerns complicate research on choice and that such complication is unavoidable. Some of this inequality stems from academic preparedness gaps, which in turn are a result of socioeconomic status (Bowen, 2006; Carr & Kefalas, 2009). In recent years, there have been ever-increasing calls to better understand challenges related to postsecondary access and choice, and these issues should be of critical concern to policymakers.

Because rural areas tend to have higher levels of poverty and other economic challenges, this discussion inherently picks up issues related to low socioeconomic status. A clear pattern emerges that lower SES has a detrimental effect on college access. Using data from NELS:88, Cabrera & La Nasa (2000a) find that only 21.3 percent of lower-SES groups applied to college compared to 76 percent of those from upper-SES groups, a gap of about 55 percentage points.

College choice presents itself as a more complex process, due in large part to the fact that the American higher education system is highly permeable, with students able to attend multiple institutions in an endless set of matriculation patterns. Therefore, questions related to SES, sex, race, academic achievement, and community traits shift from influencing if one goes to where one goes out of this complex stratification of postsecondary institutions (Bergerson, 2009; Rouse, 1994). Surely, economic concerns related to income, wealth, and consumer credit explain some portion of institutional choice, but these cannot be the only factors, nor may they be the primary ones (Bowen, 2006).

What becomes clear is that lower-SES students are more likely to attend two-year or nonselective, four-year institutions as opposed to higher-SES students who are more likely to attend selective, four-year institutions (Bastedo & Jacquette, 2011), a pattern that held across several cohorts of students. Parental characteristics also appeared frequently in the literature as influencing postsecondary choice. Cabrera and La Nasa (2000b), again using NELS:88 data, found that parental education level is central to understanding college choice issues facing low-SES students, perhaps more so than income. All told, it appears that students that come from more-advantaged socioeconomic backgrounds appear to have the human, social, and cultural capital to focus on education from an early age and prepare the student for the changes associated with pursuing higher education (Corbett, 2007; McDonough,1997).

This brings us to the concept of "under matching," or the notion that "there is a significant pool of low-socioeconomic-status…students who are attending colleges that are less selective than the ones they could have attended based on their academic preparation" (Bastedo & Jacquette 2011, p. 318). Under matching increases as socioeconomic status decreases (Bastedo & Jacquette, 2011; Bowen, Chingos, & McPherson, 2009), with as many as 59 percent of well qualified, low-SES students attending an institution that is less-selective than their academic achievement would warrant.

Since a large portion of the literature on college access focuses on urban students or ignores urbanicity altogether, there is less literature that focuses exclusively on attendance and choice patterns for rural populations. Studies that focus on gender and race in these communities are also sparse. Chen, Toombs, and Guthrie (1990) found that the two factors that most negatively impacted rural college attendance were costs of attendance and class schedules, and that although these populations may be the ones who most need additional education they may be unable to bridge the gap between needs and availability. The study continues to note that lack of information and the need to balance multiple priorities may also be hindering rural students' college attendance.

Socioeconomic factors, such as family income, parental education level, and parental occupational status, can also impact access to postsecondary education for rural students. Using NLSY data, Gibbs (1998) posits that the gap in college attendance rates among rural youth is largely due to financial issues. He revealed that rural respondents in this data set had a median family income that was about 13 percent lower than the urban median and that income was positively associated with college attendance.

Using data on students attending a stratified group of public institutions, Bowen, Chingos, and McPherson (2009) found that students at the least-selective—but not open-access—institutions were more likely than those at flagship and second-tier institutions to come from small towns and rural areas. Students from these communities were also more likely to attend two-year institutions, whereas students from cities were more likely to attend four-year institutions. Students from rural communities were also more likely to attend public institutions rather than private ones (Bowen, Chingos, & McPherson, 2009; Gibbs, 1998). Gibbs (1998) provides several reasons for this including that there are simply more public institutions than private in rural areas. Additionally, he suggests that public colleges are more affordable and are less likely to require the advanced high school curriculum that rural schools are often unable to provide.

The geographic remoteness of rural life also appears to have an impact on institutional choice. Gibbs's (1998) finding regarding the diminished presence of colleges in rural communities necessarily constricts institutional choices. Corbett (2007) suggests that, in order for rural youth to have any institutional choice, one must be able to relocate, so the notion of equal choice for rural students incorrectly assumes equal mobility (see also McDonough, Gildersleeve, & Jarsky, 2010). For both cultural and economic reasons, rural youth are likely to struggle with leaving their community, and for those without the economic means, choice is but a "cruel fiction" (Corbett 2007, p. 30).

Rural residents face a number of barriers to prosperity. Although some of these barriers mirror those of urban residents, geographic isolation serves to exacerbate these challenges (Flora & Flora, 2008). Consequently, disparities between rural and urban residents persist, even though the gap has diminished over time (Brown & Swanson, 2003). Of particular concern are high levels of poverty and diminished access to high-quality jobs (Brown & Schafft, 2011; Roscigno & Crowley, 2001), as well as youth outmigration and "brain drain" (Sherman & Sage, 2011; Corbett, 2007). As the United States makes a shift toward alternative energy and food production, rural areas "will be ground zero for the rolling out of the green economy and sustainable agriculture" (Carr & Kefalas 2009, p. viii). Therefore, the wellbeing and prosperity of rural communities is inextricably linked to the prosperity of urban areas and the nation as a whole (Carr & Kefalas, 2009; Moore, 1999). Rural communities are poised to be the places where the green economy will thrive. Therefore it will be imperative to meet the educational demands of these industries and to ensure that rural residents are not excluded from this prosperity. To better understand how rural populations can participate in these new industries, it will be crucial to study what academic majors rural students choose, and how they come to that decision. With a current deficit of science, technology, engineering, and math majors and practitioners, it is possible that rural students can help meet some of this demand. Additionally, the critical role rural communities are poised to play in emerging industries should also serve as the impetus to conduct large-scale, robust studies on the post-collegiate paths of rural students by studying employment patterns, career choices, and whether they returned to their home community after graduation.

Theoretical Framework

Laura Perna's (2006) Conceptual Model of Student College Choice contains many elements that are relevant and useful in the present study. This model asserts that there are multiple layers of influence that shape a student's postsecondary plans, as can be seen in Figure 1. The first layer addresses traits specific to the individual student such as cultural capital and demographic traits. The second layer of influence includes school and community factors, particularly as they relate to resource availability. The third layer is the higher education context, which includes institutional characteristics, geographic location, and marketing activities. The final layer of influence is the social, economic, and policy context that contains larger-scale economic and demographic characteristics as well as public policy.

In addition to layers affecting the final choice decision, Perna's (2006) Conceptual Model of Student College Choice reflects the cumulative influence each layer has upon the lower-order layers. The arrows on the left of the diagram indicate that the social, economic, and policy factors can influence the choice decision indirectly through the higher education, school, community, and individual contexts. This is an important point that none of these layers operate in isolation, but rather represent multiple levels of influence.

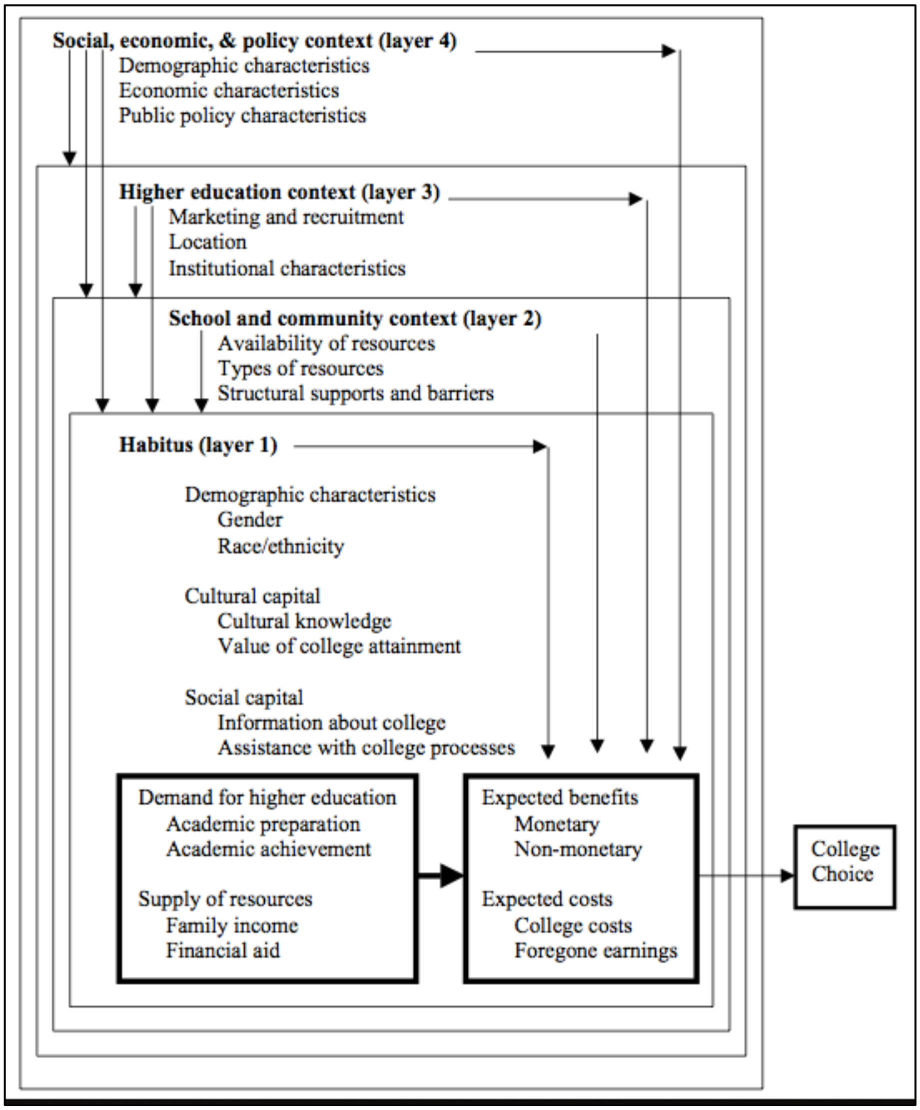

Figure 1 –Perna's (2006) Conceptual Model of Student College Choice

Data and Method

Data Sources.

Data to conduct this analysis are taken from two large-scale data sets. The first is the restricted-use file of the Education Longitudinal Study of 2002 ("ELS:2002") produced by the National Center for Education Statistics ("NCES"). This study surveyed students who were high school sophomores in 2002, and follow-up surveys were conducted with these students in 2004, 2006, and 2012. These subsequent surveys collected responses regarding high school completion, postsecondary plans, actual postsecondary choices, and employment/social outcomes. ELS:2002 data is appropriate in the present study, as the objective is to understand how living in a rural community influences eventual postsecondary pathways. This data set was developed using a stratified sampling of schools and students, and the first follow-up survey also included a "freshening" of the sample to account for non-respondents from the base year, for a total of 16,200 overall respondents. A design-based strategy is used in this study to accommodate the nested data structure, and sampling weights provided by NCES allow generalizability to respondents in the base year. This study uses the weight, *f2bywt*, so that the results from the second follow-up are generalizable to the base-year cohort. In the present study, ELS:2002 provides data for the independent variables representing sex, race, socioeconomic status, and past academic achievement, as well as the dependent variables representing postsecondary attendance and the selectivity of the first postsecondary institution attended. This data set also provides the institution code that is used to merge records with the second data set.

The other data employed in this study comes from the 2004 survey of the Integrated Postsecondary Education Data System ("IPEDS"). Also administered by NCES, IPEDS surveys every postsecondary institution eligible to receive federal student financial aid and collects data on a variety of institutional characteristics including enrollment, degree types, academic majors, student body composition, tuition, and admissions. Although produced annually, the 2004 IPEDS data is used as this aligns with the same year in which students in the ELS:2002 cohort were in their senior year of high school and finalizing their initial postsecondary plans. Using a common institutional code, ELS:2002 student records are merged with IPEDS institutional data to allow for examinations of institutional choice. The independent variables representing institutional level, control, and Carnegie Classification are taken from the IPEDS data set.

Missing records were handled using case-wise deletion, and as a result, 4,180 records were deleted, leaving a final sample of 12,020 respondents. Although this may seem like a large number or records, this approach did not have a significant effect on the distributions of key dependent or independent variables. To verify this, distribution comparisons were done on several key variables to understand if and how the variable distributions changed between the original ELS:2002 data and the final sample used in this study. Nne of the distributions changed significantly due to the deletion of incomplete records. This would suggest that the missing data occurred at random rather than being concentrated among any specific sub-population(s). Table 1 presents preliminary distributions of individual independent variables in this study.

Table 1

Descriptive Statistics for Individual Independent Variables (Full Sample, Weighted, N=12,020)

Variable	**Mean**
Non-Metro	0.199
Female	0.502
White	0.621
African American	0.136
Hispanic	0.149
Asian	0.037
Native Peoples	0.011
More than 1 race	0.046
(M) No high school diploma	0.127
(M) High school diploma	0.284
(M) Attended 2-year college, no degree	0.130
(M) 2-year degree	0.110
(M) Attended 4-year college, no degree	0.100
(M) 4-year degree	0.169
(M) Graduate degree	0.079
(F) No high school diploma	0.133
(F) High school diploma	0.300
(F) Attended 2-year college, no degree	0.101
(F) 2-year degree	0.084
(F) Attended 4-year college, no degree	0.091
(F) 4-year degree	0.170
(F) Graduate degree	0.120
(M) Occupational status	8.267
	(0.207)
(F) Occupational status	7.617
	(0.038)
Family Income	9.114
	(0.082)
High school GPA	2.784
	(0.006)
Took the SAT	0.646
Highest SAT Score	1001
	(5.431)

(M) and (F) denote Mother and Father, respectively
Standard deviations in parentheses
Source: ELS:2002

As was mentioned earlier, the delineations between rural and urban are nuanced. Further, Coladarci (2007) notes that an endless combination of variables can be used to develop a scheme for describing rural places. In the present study, rurality is defined using the metropolitan/non-metropolitan classification for counties contained in the USDA-ERS typologies. This definition is based on that of the federal Office of Management and Budget, and although it employs several complicated aspects, the base principle is that if a county has at least one urban center of more than 50,000 residents, it is classified as metropolitan. In this study, the terminology pairs "rural/non-rural" and "non-metro/metro" are both used. The non-metro/metro terms are used in this section and the results section for analytical and interpretive purposes given the technical nature of the term. However, in the remaining sections of the paper, "rural/non-rural" is used as these terms are more general and are used more often in practice and colloquial use. This is done to preserve the technical definitions of the counties analyzed in this study, while also making the study accessible to readers less familiar with the rural context. Table 2 contains the distributions of respondents based on an urban-suburban-rural scheme, as well as that for metropolitan/non-metropolitan. The distributions of respondents were similar for the rural and non-metropolitan categories, and while these classifications are not wholly congruous in definitional terms, the similar distributions offer some support for using both terms in the present study.

Table 2

Comparison of Urbanicity Distribution Before and After Data Sanitization (Unweighted)

Urbanicity (ELS:2002)	Original ELS:2002 N=16,200	Final Sample N=12,020
Urban	33.87%	32.93%
Suburban	47.93%	48.72%
Rural	18.19%	18.35%
Metro Indicator (USDA-ERS)		
Metro	82.32%	81.46%
Non-metro	17.68%	18.54%

Sources: ELS:2002, USDA-ERS 2004 County Typologies

Descriptive Statistics.

Because the central aim of this study is to uncover effects for non-metro youth and understand how they compare to the effects for metropolitan youth, a comparison of descriptive statistics across urbanicity is appropriate. Coladarci (2007) emphasizes the importance of studying rural populations in comparison to other groups. Therefore, before looking at county variables, differences between metropolitan and non-metropolitan students are examined. Table 3 compares the descriptive statistics between metropolitan and non-metropolitan respondents. In general, there are not many gaps larger than a few percentage points, but there are a few differences worth noting. The proportion of White respondents was nearly 20 percentage points higher in non-metro counties versus metropolitan ones. In non-metropolitan counties, more parents had a high school diploma, which had an advantage regarding attending and completing postsecondary education. Finally, it is interesting that the average high school grade-point average was higher for non-metro students, but metropolitan students had higher average SAT scores.

Table 3

Comparison of Descriptive Statistics for Individual Characteristics by Urbanicity (Weighted)

	Metro N = 9,800	Non-Metro N = 2,230
Variable	**Mean**	**Mean**
Female	0.504	0.493
White	0.584	0.769
African American	0.144	0.105
Hispanic	0.173	0.053
Asian	0.044	0.010
Native Peoples	0.009	0.020
More than 1 race	0.047	0.042
(M) No high school diploma	0.129	0.121
(M) High school diploma	0.263	0.372
(M) Attended 2-year college, no degree	0.131	0.126
(M) 2-year degree	0.109	0.117
(M) Attended 4-year college, no degree	0.103	0.089
(M) 4-year degree	0.180	0.125
(M) Graduate degree	0.087	0.049
(F) No high school diploma	0.134	0.131
(F) High school diploma	0.275	0.402
(F) Attended 2-year college, no degree	0.099	0.109
(F) 2-year degree	0.084	0.086
(F) Attended 4-year college, no degree	0.096	0.071
(F) 4-year degree	0.181	0.126
(F) Graduate degree	0.132	0.075
(M) Occupational status	8.246	8.349
	(0.005)	(0.093)
(F) Occupational status	7.741	7.118
	(0.036)	(0.018)
Family Income	9.102	8.577
	(0.083)	(0.040)
High school GPA	2.690	2.793
	(0.003)	(0.029)
Took the SAT	0.591	0.596
Highest SAT Score	1008	973
	(7.937)	(4.022)

Sources: ELS:2002
(M) and (F) denote mother and father, respectively
Standard deviation in parentheses

Looking next at postsecondary attendance, the share of students who attended some form of postsecondary education within two years of high school was about 5 points higher for metropolitan students. These same students attended two-year colleges at a rate about 9 points lower than non-metropolitan students, which indicates that attenders from remote places seem less likely to choose a four-year institution compared to those from more-populous areas. Students from metro counties attended highly selective colleges and universities at a rate that was nearly twice that of non-metro students. That said, postsecondary attenders from non-metropolitan counties did outpace metropolitan students with regard to attending moderately selective, four-year institutions. The potential disadvantage faced by non-metro students continued when looking at Carnegie Classification of the first postsecondary institution attended. More than half of the non-metropolitan students in this sample attended an associate's college compared to 42.3 percent of those from non-rural counties. Additionally students from metropolitan areas had an advantage of almost 7 points regarding attendance at a doctoral/research university. Table 4 contains the comparison of dependent variables across urbanicity categories. Although the descriptive statistics presented in the sections above indicate potential patterns of struggle for students from non-metro areas, it is difficult to be certain because this study does not control for students' aspirations. The regression analysis outlined below allows for a more-robust analysis of the sample and the effects that community factors have on postsecondary pathways.

Table 4

Comparison of Descriptive Statistics for Dependent Variables by Urbanicity (Weighted)

Variable	Metro County N = 9,800 Mean	Non-Metro County N = 2,230 Mean
Attended Postsecondary Education	0.694	0.643
	N = 7,310	N = 1,460
2-year institution	0.379	0.468
Private institution	0.223	0.170
Not classified, 2-year	0.372	0.462
Inclusive, 4-year	0.121	0.108
Moderately selective, 4-year	0.285	0.313
Highly selective, 4-year	0.222	0.118
Associate's College	0.423	0.513
Baccalaureate College - General	0.045	0.056
Liberal Arts College	0.041	0.047
Master's Institution	0.215	0.176
Doctoral/Research University	0.276	0.209

Sources: ELS:2002, IPEDS 2004
Reference group for institutional level: Four-year institutions
Reference group for institutional control: Public institutions

Statistical Methods and Models.

The model outlined below is used with several dependent variables. First, a dichotomous variable represents whether a respondent ever attended any postsecondary education. This includes even brief matriculation, as well as attendance at any institutional level. The choice decision is examined based on characteristics of the first postsecondary institution attended. Multinomial variables representing selectivity and Carnegie Classification, as well as dichotomous representations of institutional level and control, are used, and it should also be noted that tests for the four institutional choice variables include only students who attended some postsecondary education within two years of high school graduation. When interpreting the results, effects for the dichotomous dependent variables are presented as odds ratios, and the effects for the multinomial dependent variables are presented as relative risk ratios.

To assess the ways in which non-metropolitan residence can adversely impact postsecondary decisions, a model is used that includes independent variables representing individual characteristics plus a non-metro county indicator. By regressing these variables against each of the dependent variables for attendance and institutional choice, it is possible to examine how non-metropolitan residence generally affects each of these outcomes. Further, by regressing individual traits separately for metro and non-metro sub-groups, the differing effects of sex, race, SES, and past academic achievement across space can be studied. This allows for a meaningful comparison and interpretation of results for each student group. Model 1 presents the statistical model used for this analysis; it should be noted that for the sub-group comparison, the non-metro indicator is omitted from the regression, as it is used to create the groups.

M1. $$Y = \beta_0 + \beta_1 bysex + \beta_2 byrace + \beta_3 bysesq + \beta_4 f1hsgpa + \beta_5 satyes + \beta_6 sathigh + \beta_7 nonmetro + \varepsilon$$

Results

Full Sample

The preliminary results of this study confirm some past findings, but also produce some unexpected findings. With regard to individual background traits, females have a 34.5-point advantage (*$p < 0.001$*) over males in the full sample. This is consistent with previous research, however, sex was generally not statistically significant in the analyses of institutional choice. Socioeconomic status had a positive and significant impact on the chances of attending any postsecondary education. Higher socioeconomic status decreased the odds of attending a two-year college, as well as increased the chances of attending increasingly selective four-year institutions over non-selective, two-year colleges. Whereas most of the demographic variables produced expected effects, the race variables revealed some unexpected outcomes. In particular African American and Hispanic students tended to experience increased odds of postsecondary attendance compared to White students, which contradicts most existing research on the relationship between race and postsecondary access. However, the ELS: 2002 data set is still relatively new—with the final wave of data released in 2014—and researchers have not yet studied this cohort exhaustively, so it is difficult to conclude if these results are abnormal.

When considering the non-metro indicator, previous research is once again confirmed. Students from non-metropolitan counties had odds of attendance that were only 84.7 percent ($p < 0.05$) of those for metropolitan respondents. These students were also more likely to choose a two-year college versus a four-year institution, and consequently, were less likely to choose selective institutions and institutions other than associate's colleges. Although the results of the non-metro indicator provide some insight, the effects for students from each type of county must be examined separately and compared. Table 5 shows the comparison between rural and non-rural students for the attendance analysis. Regarding attendance, the differences between these two sub-populations bears little practical significance, however, a few interesting results are present. African American respondents in metropolitan counties were less likely to attend any postsecondary education by a gap of nearly 60 percentage points. Conversely, Hispanic and Asian students in metro counties experienced greater odds of attending postsecondary institutions compared to their non-metro counterparts.

Regarding institutional selectivity, Table 5 reveals that non-metropolitan students have decreased chances of choosing selective, four-year institutions over non-selective, two-year colleges, and the disparity is greatest when considering the most-selective institutions, which non-metro students were only 32 percent ($p < 0.001$) as likely to choose over a two-year college relative metro students. Lastly, when considering the Carnegie Classification of the first institution attended, there were no significant differences between metropolitan and non-metropolitan students when considering general baccalaureate and liberal arts colleges. However, when considering master's and doctoral institutions, non-metro students were 55 percent ($p < 0.001$) as likely to choose these institutions over an associate's college relative to their metropolitan counterparts. In combination, these results show that non-metro students are not only less likely to attend any postsecondary education within two years of completing high school, but they are also less likely to attend four-year institutions, private colleges, more-selective institutions, and those that confer graduate degrees and are involved in knowledge creation. The corollary to this, of course, is that non-metro students are more likely to attend two-year institutions, public colleges, inclusive institutions, and those that focus primarily on sub-baccalaureate credentials. As a result, these students, by virtue of the community in which they were raised, are less likely to achieve the same level of academic achievement—and corresponding economic prosperity—as those who come from metropolitan counties.

Table 5

Odds Ratios and Relative Risk Ratios of Postsecondary Outcomes for the Non-Metro Indicator (Full Sample, Weighted)

Postsecondary Outcome	**Non-Metro**	**S.E.**	**Pseudo R^2**	**N =**
Attendance	0.800**	0.061	0.356	12,020
Two-year College	1.632***	0.136	0.263	8,780
Private College	0.757**	0.066	0.057	8,780
Inclusive	0.697**	0.082	0.230	8,780
Moderately Selective	0.669***	0.632	0.230	
Highly Selective	0.320***	0.045	0.230	
Baccalaureate College - General	0.847	0.131	0.179	8,780
Liberal Arts College	0.825	0.146	0.179	
Master's Institutions	0.550***	0.054	0.179	
Doctoral/Research University	0.552***	0.062	0.179	

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Sources: ESL:2002, USDA-ERS (2004), IPEDS (2004)
Metro/non-metro groups from USDA-ERS 2004 County Typologies
Reference groups for DVs: Non-attendance, Four-year institutions, Public institutions, Two-year (Not classified), Associate's Colleges

Metro/Non-metro Comparison

The general effects of non-metro residence should be discussed to understand how living in these places impacts postsecondary pathways. This helps to frame the later discussion of cross-urbanicity differences for individual traits. Table 5 shows a pattern of potential disadvantage regarding postsecondary outcomes. To better explore these gaps, the analysis in Tables 6 through 8 now turns to the examination of differences in the effects of individual demographic, socioeconomic, and academic traits between metropolitan and non-metropolitan students.

Whereas the results for the non-metro indicator revealed large differences, the effect of individual characteristics did not vary dramatically between the metro and non-metro contexts. It should be noted that, in the analysis of individual traits, socioeconomic status is represented by a categorical quartile variable derived from a composite SES score. This decision was made for the sake of parsimony in the study of individual effects, as a detailed analysis of mother and father's education, mothers and father's occupational status, and family income separately would be cumbersome.[1]

For starters, metro and non-metro females had an attendance advantage relative to males, and the differences were roughly similar across urbanicity groups. That said, attendance was the only analysis in which female effects were statistically significant for both groups of respondents. There is also relatively little cross-urbanicity variation in effect size across outcomes for high school GPA and highest SAT score. When looking at the race variables, there are few noteworthy comparisons to be made, however, the results for African Americans are conducive to some of this discussion. In general these students had an advantage compared to White students across outcomes and urbanicity when controlling for other background traits such as SES. The positive effects for attendance were larger in non-metropolitan communities, as were the relative chances of choosing moderately selective institutions over two-year colleges and master's institutions over associate's colleges.

With the exception of institutional control, the results for socioeconomic status allowed for some interesting metro/non-metro comparison for each of the dependent variables. Regardless of urbanicity, higher-SES students have advantages across the board with greater chances of attending and choosing four-year institutions of increased selectivity as well as institutions focusing on graduate education. Surprisingly, when looking at effect sizes, non-metropolitan students seem to be less affected by low SES than metropolitan students; in fact across all outcomes, this advantage emerged, regardless of statistical significance. This can imply a couple of things: that mid-quartile, non-metro students may be defying well-documented

[1] In order to verify the accuracy of the results for the SES quartiles, specification checks were executed by executing the same regressions with the continuous SES composite score from which the quartiles are derived. Across these tests, the effects of the continuous composite score were consistent with the results for the quartile variables.

socioeconomic trends by performing significantly better than expected or that, in non-metro counties, the benefits afforded to more-affluent students in past research is muted.

Table 6

Comparison of Odds Ratios of Postsecondary Outcomes for Individual Characteristics by Urbanicity (Weighted)

	Attendance		**Two-Year College**		**Private College**	
	Non-Metro	Metro	Non-Metro	Metro	Non-Metro	Metro
Female	1.367*	1.326***	1.148	1.004	0.768+	1.036
	(0.178)	(0.096)	(0.167)	(0.078)	(0.123)	(0.077)
African American	2.460***	1.208+	0.399***	0.319***	0.879	1.491***
	(0.484)	(0.121)	(0.092)	(0.038)	(0.300)	(0.178)
Asian	7.600***	2.097***	0.726	1.048	1.273	0.683***
	(4.505)	(0.291)	(0.294)	(0.123)	(0.520)	(0.078)
Hispanic	1.212	1.342**	1.064	1.063	1.397	0.971
	(0.310)	(0.134)	(0.363)	(0.127)	(0.506)	(0.121)
Native Peoples	1.577	0.793	0.401+	0.863	.	2.419*
	(0.676)	(0.288)	(0.193)	(0.350)	.	(0.968)
Multiracial	0.824	0.741+	0.632	0.576**	0.599	1.666**
	(0.237)	(0.125)	(0.244)	(0.121)	(0.276)	(0.313)
Lowest SES Quartile	0.374***	0.241***	1.543*	2.084***	1.181	0.690**
	(0.086)	(0.029)	(0.327)	(0.251)	(0.303)	(0.087)
2nd SES Quartile	0.619*	0.360***	1.374	2.212***	1.078	0.709**
	(0.147)	(0.042)	(0.280)	(0.229)	(0.246)	(0.076)
3rd SES Quartile	0.769	0.495***	1.085	1.797***	1.007	0.736***
	(0.189)	(0.061)	(0.221)	(0.174)	(0.221)	(0.065)
High School GPA	2.465***	2.314***	0.526***	0.410***	1.120	1.105
	(0.307)	(0.131)	(0.077)	(0.031)	(0.198)	(0.079)
Took SAT	0.633	0.699	7.914***	9.856***	0.065***	0.188***
	(0.355)	(0.226)	(4.250)	(2.829)	(0.039)	(0.051)
Highest SAT Score	1.003***	1.003***	0.996***	0.996***	1.003***	1.002***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Observations	2230	9800	1460	7310	1450	7310
Pseudo R^2	0.354	0.358	0.215	0.272	0.066	0.056

Exponentiated coefficients; Standard errors in parentheses
+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Sources: ESL:2002, USDA-ERS (2004), IPEDS (2004)
Metro/non-metro groups from USDA-ERS 2004 County Typologies
Reference groups for IVs: Male, White, Highest SES Quartile
Reference groups for DVs: Non-attendance, Four-year institutions, Public institutions

Table 7

Comparison of Relative Risk Ratios of Four-Year Institutional Selectivity for Individual Characteristics by Urbanicity (Weighted)

	Non-Metro			**Metro**		
	Inclusive	Moderately Selective	Highly Selective	Inclusive	Moderately Selective	Highly Selective
Female	0.700+	1.061	0.629*	0.940	1.075	1.041
	(0.146)	(0.174)	(0.146)	(0.098)	(0.095)	(0.113)
African American	2.040*	2.326**	2.597	4.456***	1.960***	2.492***
	(0.654)	(0.615)	(1.540)	(0.642)	(0.263)	(0.511)
Asian	0.199+	1.769	1.935	1.152	0.709*	1.725***
	(0.164)	(0.822)	(1.183)	(0.199)	(0.101)	(0.281)
Hispanic	0.601	0.893	1.907	1.755***	0.671**	0.939
	(0.318)	(0.385)	(1.013)	(0.257)	(0.096)	(0.174)
Native Peoples	0.000***	4.501**	5.893+	1.719	0.825	1.374
	(0.000)	(2.362)	(6.085)	(0.982)	(0.401)	(0.709)
Multiracial	1.711	1.926	1.112	2.829***	1.224	1.651+
	(0.802)	(0.872)	(0.717)	(0.694)	(0.280)	(0.470)
Lowest SES Quartile	1.065	0.665+	0.258***	0.704*	0.486***	0.239***
	(0.379)	(0.159)	(0.103)	(0.111)	(0.068)	(0.047)
2nd SES Quartile	1.094	0.706	0.441**	0.740*	0.460***	0.240***
	(0.363)	(0.165)	(0.138)	(0.109)	(0.055)	(0.036)
3rd SES Quartile	1.455	0.956	0.538*	0.731*	0.589***	0.379***
	(0.484)	(0.218)	(0.163)	(0.102)	(0.065)	(0.050)
High School GPA	1.312	2.158***	4.023***	1.489***	2.564***	5.802***
	(0.273)	(0.367)	(1.223)	(0.148)	(0.220)	(0.654)
Took SAT	0.622	0.129***	0.174	1.000	0.164***	0.001***
	(0.493)	(0.079)	(0.192)	(0.367)	(0.057)	(0.000)
Highest SAT Score	1.001	1.004***	1.006***	1.001**	1.004***	1.009***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Observations	1460			7310		
Pseudo R^2	0.176			0.242		

Exponentiated coefficients; Standard errors in parentheses
+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Sources: ESL:2002, USDA-ERS (2004), IPEDS (2004)
Metro/non-metro groups from USDA-ERS 2004 County Typologies
Reference groups for IVs: Male, White, Highest SES Quartile
Reference group for DV: Two-year (Not classified)

Table 8

Comparison of Relative Risk Ratios of Institutional Carnegie Classification for Individual Characteristics by Urbanicity (Weighted)

	Non-Metro				Metro			
	Bacc. – General	Liberal Arts	Master's Inst.	Doctoral/ Research	Bacc. – General	Liberal Arts	Master's Inst.	Doctoral/ Research
Female	1.153	0.744	0.859	0.979	1.182	1.285	1.075	0.989
	(0.308)	(0.231)	(0.159)	(0.178)	(0.178)	(0.208)	(0.095)	(0.091)
African American	2.598*	1.863	3.031***	2.900**	2.480***	5.862***	2.459***	4.112***
	(1.212)	(1.358)	(0.882)	(0.975)	(0.515)	(1.616)	(0.332)	(0.617)
Asian	0.000***	3.095+	1.835	1.938	0.210***	0.439**	0.772+	1.771***
	(0.000)	(1.966)	(0.830)	(1.028)	(0.075)	(0.137)	(0.113)	(0.243)
Hispanic	1.782	1.763	0.997	1.302	0.505**	0.764	0.856	0.950
	(1.065)	(1.571)	(0.488)	(0.660)	(0.128)	(0.260)	(0.117)	(0.149)
Native Peoples	0.000***	0.000***	4.542*	6.182*	0.913	1.032	0.456	1.055
	(0.000)	(0.000)	(2.886)	(4.530)	(0.647)	(0.684)	(0.284)	(0.463)
Multiracial	2.830	4.220*	0.905	1.684	0.734	0.995	0.821	1.517+
	(1.799)	(2.702)	(0.493)	(0.767)	(0.269)	(0.424)	(0.172)	(0.344)
Lowest SES	0.865	0.862	0.798	0.433**	0.975	0.328**	0.624***	0.339***
Quartile	(0.393)	(0.399)	(0.222)	(0.121)	(0.221)	(0.118)	(0.088)	(0.053)
2nd SES Quartile	0.930	0.994	0.824	0.477**	0.907	0.272***	0.587***	0.362***
	(0.354)	(0.402)	(0.218)	(0.124)	(0.181)	(0.072)	(0.072)	(0.046)
3rd SES Quartile	1.320	0.942	1.163	0.693	1.033	0.444***	0.732**	0.458***
	(0.474)	(0.386)	(0.297)	(0.168)	(0.191)	(0.086)	(0.081)	(0.051)
High School GPA	1.117	2.287*	2.445***	2.145***	1.195	3.853***	2.158***	3.982***
	(0.281)	(0.735)	(0.483)	(0.445)	(0.181)	(0.681)	(0.190)	(0.376)
Took SAT	0.188	0.636	0.475	0.181*	0.872	0.005***	0.480*	0.020***
	(0.198)	(0.900)	(0.335)	(0.132)	(0.468)	(0.003)	(0.149)	(0.007)
Highest SAT	1.004***	1.005***	1.002***	1.004***	1.002***	1.007***	1.003***	1.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Observations	1460				7310			
Pseudo R^2	0.143				0.190			

Exponentiated coefficients; Standard errors in parentheses
+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Sources: ESL:2002, USDA-ERS (2004), IPEDS (2004)
Metro/non-metro groups from USDA-ERS 2004 County Typologies
Reference group for IVs: Male, White, Highest SES Quartile,
Reference group for DV: Associate's Colleges

Discussion and Conclusion

The preliminary results of this study confirm that rural students face a disadvantage regarding postsecondary attendance, and have decreased chances of attending highly selective institutions and those that conduct research and confer graduate degrees. It has been clearly illustrate stark inequalities between metropolitan and non-metropolitan counties with regard to postsecondary attendance and choice. Non-metro places experience greater disadvantages regarding child poverty, and these detrimental effects largely disappear for metropolitan residents. The prevalence of manufacturing and mining adversely affects students regardless of urbanicity group. Allowing these disparities to persist and hurt future generations is simply not a viable option for the success of the United States as a whole. In a similar vein, Bowen, Chingos, and McPherson (2009) suggest that there will simply be too few of the students best represented in higher education to meet future demand for educated labor. The best way to solve these problems is to use a holistic approach that seeks to improve schools, communities, and social services for students and families. Solving even basic extra-scholastic problems for youth can lead to notable gains in educational outcomes (Bowen, 2006).

Although the disadvantage of rural students has been documented in a number of other works using NCES data (see Adelman, 2002), few existing studies focusing on rural populations utilize the newer ELS:2002 data. Further, this study represents an important contribution to studying the postsecondary pathways of rural and urban students, as the college choice decision is examined through four separate lenses for students from all urbanicity groups.

One of the main drivers of conducting this study was to provide a robust analysis that can be used to begin new discussions among educators, administrators, and especially, policymakers. Quality educational research is critical to shaping policies that will eliminate the persistent environmental and systemic situations that impact social and cognitive growth. Such research can also be used to identify ways to achieve greater efficiency and success regarding higher education (Hossler et al., 1999). It is with this in mind that the following discussion is presented that outlines policy options for the federal government, state governments, and postsecondary institutions.

Federal and State Policies

The federal government has had a concerted involvement in higher education for more than 150 years. As far back as 1862 with the Morrill Land Grant Act, the federal government has sought ways to increase access to postsecondary education. There is also a long-standing belief among policymakers and the public that the government can improve equality of educational opportunities for the socially and economically disadvantaged (Parsons, 1997), and this would certainly include rural populations. One example of a potentially revolutionary policy mechanism is known as "Promise Neighborhoods."

Beginning in 2010, the U.S. Department of Education, under the charge of President Obama's Neighborhood Revitalization Initiative, began awarding one-year grants to non-profit organizations, higher education institutions, and Native American tribes to enact broad community reforms with the goal of improving "the educational and developmental outcomes of children and youth in our most distressed communities" (United States Department of Education, 2013, p. 1). Grant recipients are tasked with developing cradle-to-career solutions that include educational programs, family wellness programs, and a focus on high-quality schools. Other key elements of this program include the encouragement to collaborate and break-through institutional barriers, as well as developing the infrastructure and resources necessary to sustain and expand activities beyond the initial community (United States Department of Education, 2013).

The Promise Neighborhood Initiative is based on the features of an urban improvement program known as the "Harlem Children's Zone" (Devarics, 2011). The Harlem Children's

Zone, started in 1970, is a 97-block area in Harlem, New York, that utilizes a complex network of reform-oriented charter schools, community service agencies, and non-profits to ensure that the neighborhood in which students are growing-up are safe, healthy, and conducive of learning. Supports include family counseling, health and wellness programs, foster care prevention, and a college success office. The ultimate goal is to provide positive support to children and their families from birth through college graduation (Dobbie & Fryer, 2009). Organizations have sprung-up countrywide in an effort to develop similar programs in cities such as Atlanta, Boston, Miami, and Pittsburgh. Recently, these programs have also begun targeting more rural areas, such as the East Lubbock Promise Neighborhood administered through Texas Tech University.

State governments have a number of policy options available to help combat issues related to college access and choice for rural students. As the recipients of federal block grants, state governments are often responsible for determining which communities, schools, and populations are to be the recipients of the granted money (Warner, 2003). State policy can be used to influence postsecondary decisions by using innovative funding sources to increase allocations to students and institutions, as well as through curricular alignment with K-12 institutions and the implementation or expansion of dual enrollment/dual credit programs. However, before states can truly make informed policy decisions, they must have access to accurate and reliable data.

Postsecondary Institutions

Although policy discussions may not always consider institutional policies, higher education institutions and their various administrative policies influence many facets of students' lives and experiences. Accordingly, it is incumbent upon colleges and universities to seek ways of improving opportunity for rural youth (McDonough, Gildersleeve, & Jarsky, 2010). The earlier discussion on dual enrollment and dual credit programs has very clear implications for postsecondary institutions. In order to successfully implement such programs, institutions must look to refine, standardize, and publish credit-transfer policies. Another way to support these programs is to subsidize academic materials when not already done so by the state or school district. Finally, postsecondary institutions should look for ways to develop dual enrollment courses to be delivered via distance education modes as well. This would help alleviate the proximity issues associated with rural residence and might equalize access to dual enrollment programs (Adelman, 2002). As was noted above, these programs offer a number of potential benefits to students, especially low-income and first-generation students, and accordingly, college and universities should seek ways to facilitate such partnerships if leadership is not taken on a state level.

Accordingly, Bowen (2006) urges elite institutions to apply an individualized and holistic approach to college admissions decisions. Specifically, he suggests that low-income students be offered the same additional consideration given to legacy applicants—a break that effectively puts a “thumb on the [admissions] scale” (p. 28). The ultimate goal of such a policy should be to balance the number of legacy and low-income or first-generation applicants, for any SAT score, to better ensure equity of opportunity rather than giving favor solely to those who are already advantaged. In conducting simulations of the effect of such a policy at elite institutions, Bowen (2006) found that providing an admission break to poor students who excelled increases the share of those students on campus by 8 points. He acknowledges that a number of alternative simulation algorithms could be used, and that institutions should select the “thumb” size that best suits their needs and goals. In a later piece, Bowen, Chingos, and McPherson (2009) note that a number of elite schools have implemented such a policy, but the resulting increases in overall access and equity may be modest given the small number of college attendees who matriculate at the most-selective institutions. Even though these policies specifically target low-income students, such policies should also positively impact rural students as well given the income disparities in these communities. Table 9 shows that, in the present sample, students in the lowest SES quartiles were represented in greater proportions in rural communities and that the opposite trend emerges among non-rural respondents.

Table 9

SES Quartile Distribution by Urbanicity

Quartile	**Rural (%)**	**Non-rural (%)**
Lowest	31.81	20.7
2nd	27.05	22.05
3rd	22.88	24.83
Highest	18.26	32.41
N=	2,230	9,800
Pearson's X^2 = 0.000		

Sources: ELS:2002; USDA-ERS 2004 county typologies

A final policy option for postsecondary institutions relates to matters of financial aid and cost of attendance. McPherson and Schapiro (2006) note that money is perhaps the greatest barrier to improving college access for poor students because low-income families simply have fewer resources to dedicate to their children's education early in life, and the lack of such early investments can negatively impact academic preparation later in life. This is compounded by the lack (or perceived lack) of ability pay for postsecondary education on the part of these families and students. Elite colleges and universities, with no shortage of qualified applicants, have room in the market to increase the cost of attendance, although this can have the greatest discouraging effects on low-income or first-generation students (Zumeta, 2004). Therefore institutions should make a concerted effort to increase institutional aid to these target populations in a manner that increases the admissions yield. The increase in aid, especially among institutions with applicants to spare, can be subsidized by having wealthy families pay the "sticker price" of tuition and fees. Additionally, institutions can make shifts between merit- and need-based aid programs, particularly if institutions find that their merit-based aid programs serve more-affluent students in greater numbers, as can often be the case.

Directions for Future Research

This study begins a new line in the examination on postsecondary pathways for rural, as well as urban, students. The county traits and institutional characteristics represent a small portion of the ways in which community effects and postsecondary choice can be operationalized. Accordingly, there are a number of directions for future research that stem from the work presented above. These can be grouped into the following categories: other outcomes, other community factors, cross-cohort analysis, and geographic proximity.

Although this study focused on postsecondary attendance and institutional choice as defined by institutional level, control, selectivity, and Carnegie Classification, there are a number of other outcomes that can be tested with the local industry and economic indicators. For starters, the attendance window can be expanded. In the present study, the ELS:2002 data only allows for studying postsecondary outcomes within two years of high school graduation. Once the final wave of data is available in 2014, it will be possible to study postsecondary choices that occurred within eight years of high school graduation. This extended window will allow for the analysis of students who had intermittent attendance patterns as well as those who began college at a non-traditional age.

Additionally, institutional choice can be examined based on other institutional factors. Even though characteristics such as level, control, selectivity, and Carnegie Classification cover a variety of institutional traits, there are still other ways that institutions can be grouped. It may be illuminating to understand what influences student choices related to size, institutional resources, and graduation rates. Because the path to and through postsecondary education is a complex one, it will be imperative to study this process from a variety of angles.

Conclusion

Considering the question of general rural/non-rural differences, this study revealed clear and consistent diminished odds for non-metropolitan students across postsecondary outcomes. This deficit also emerged for non-metro students when studying county-level economic indicators. The present study has confirmed past research and uncovered additional ways in which rural youth face unequal educational opportunities.

This study is one of the first comprehensive works that examines how one's community impacts educational outcomes and confirms that there are many symptoms that depress educational attainment, particularly for rural populations. In the future, it will be necessary to treat these symptoms as part of comprehensive improvements in higher education access. This includes the role higher education institutions have to play through their admissions policies, financial aid packages, and outreach efforts. True progress will require cooperation across organizations, political parties, and institutional sectors—no easy task. However, a complex problem expectedly requires a complex solution. The challenge will be worth it. Providing a better education to millions of otherwise disenfranchised youth raises the quality of life for entire communities and is more than just the right thing to do. Investing in these youth will pay economic and societal dividends for decades to come, and as the United States shifts to a greener and high-tech economy, improving educational opportunities for rural Americans has the potential to revitalize the national economy right when we need it most.

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