Challenging Both Rural Advantage and Disadvantage Narratives: The Effects of Family Factors on American Student College Expectations in the Early 2010s

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Citation: Li, X. (2019). Challenging both rural advantage and disadvantage narratives: The effects of family factors on American student college expectations in the early 2010s. *Journal of Research in Rural Education, 35*(5), 1-16. Retrieved from https://doi.org/10.26209/jrre3505

Using data from the 2009 High School Longitudinal Study, this article examines how family factors contribute to the rural/non-rural differences in college expectations in the early 2010s. Prior studies have found that rural students have disadvantages in family economic and cultural capital and advantages in social capital when pursuing higher education, formulating the rural disadvantage narrative and the rural advantage narrative. However, it is unclear how these rural disadvantages and advantages in family factors joined to influence student college expectations in the early 2010s. Using logistic regression models and interaction terms, this article contributes to prior studies by showing that in general, in the early 2010s, rural students were as likely as non-rural students to expect four-year college education. They were, however, less likely than suburban students to have college expectations and slightly more likely than town students to expect college, suggesting that the rural/non-rural differences in college expectations are more complex than previously thought. Rural students had similar family income levels as non-rural students, partially challenging the rural disadvantage narrative. Although rural students had advantages in social capital, the rural advantage narrative was partially challenged because the low parental educational expectations limited rural students' college expectations.

College expectations (i.e., the desire of youth to attend college), tempered by the constraining effects of their social environment, are one of the most crucial predictors of youth educational and occupational outcomes (Schmitt-Wilson, 2013; Sewell, Haller, & Portes, 1969). Prior studies have found that college expectations mediate the effects of family background on youth educational outcomes, occupational expectations, and occupational outcomes (Agger, Meece, & Byun, 2018; Byun, Meece, & Irvin, 2012; Schmitt-Wilson, 2013; Sewell et al., 1969). College expectations are also significantly associated with youth migration decisions and other life course outcomes that affect individual long-term well-being (Carr & Kefalas, 2009; Hitlin & Johnson, 2015; Petrin, Schafft, & Meece, 2014).

Given the importance of college expectations stated above, it is essential to explore the rural/non-rural differences in college expectations with more recent data to further clarify whether there are rural/non-rural differences in youth status attainment and other life course outcomes in recent decades. Although the United States has been highly urbanized, in the early 2010s, nearly 17% of Americans under age 20 lived in rural areas (United Nations, 2014), and more than 20% of public K-12 students were enrolled in rural schools (Brown & Schafft, 2011). The well-being of nearly one in five American youth should not be ignored.

Understanding of rural/non-rural differences in college expectations is also essential to the sustainability and development of rural communities. For rural youths, pursuing a college education is associated with leaving their hometowns (Carr & Kefalas, 2009; Corbett, 2007). College expectations play an important role in the migration decisions of rural youths, decisions that contribute to "rural brain drain" through which rural communities lose talent, and community sustainability is challenged (Corbett, 2007; Petrin et al., 2014; Sherman & Sage, 2011).

Previous studies on college expectations and documented increases in college attendance rates of rural students relative to non-rural students between 2006-2011 suggest relative changes in rural students' college expectations. Previous studies have found that, through the 1990s, rural students were less likely than non-rural students to expect a four-year college education (Haller & Virkler, 1993; Hu, 2003), although in the early 21st century they have been equally likely to expect a four-year college education (Howley, 2006). Rural students are, however, still less likely to expect postgraduate education than are non-rural students (Howley, 2006). Although prior studies

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The *Journal of Research in Rural Education* is published by the Center on Rural Education and Communities, College of Education, The Pennsylvania State University, University Park, PA 16802. ISSN 1551-0670

used different datasets and definitions of *rurality*, they may suggest that the rural/non-rural gap in educational expectations has been narrowing over time.

Data from the National Center for Education Statistics (NCES) show that 2006-2007 rural high graduates were more likely to attend college than non-rural high school graduates in the same period, while 2010-2011 rural high school graduates were more likely to attend college than urban and town high school graduates (Snyder & Dillow, 2015, p. 393). This evidence suggests a change in rural/non-rural differences in college expectations that fueled changes in college attendance. However, a review of literature shows a paucity of research on the rural/non-rural differences in college expectations in the early 2010s.

While family factors have been studied as contributory to college attainment of both rural and non-rural students, there has been no recent examination of how those factors contribute to the college expectations of rural and non-rural students. To explain how family factors contribute to the increase in the college attainment of rural students relative to that of non-rural students, studies have developed a *rural advantage narrative*, which highlights the higher proportion of two-parent families, the closer parent-child relationships, and the stronger social capital in rural places than in non-rural places (Byun, Meece, Irvin, & Hutchins, 2012; Coleman, 1988; Demi, Coleman-Jensen, & Snyder, 2010; Nelson, 2016). However, historically, scholars have emphasized a *rural disadvantage narrative*, which highlights the lower socioeconomic status (SES), the lower levels of parental educational expectations, and the greater paucity of school resources in rural areas than in non-rural places as factors that shaped the lower college attainment of rural students (Byun, Meece, & Irvin, 2012; Roscigno & Crowle, 2009).

The two narratives, which seem contradictory to each other, are compelling as lenses to understand college expectations of rural and non-rural youth because they shed light on the complicated and perhaps changing mechanisms through which different family characteristics across rural and non-rural places influence youth educational outcomes. Nevertheless, prior studies have not explained whether the rural disadvantages in family economic and cultural capital had changed in the early 2010s. Nor have they explained whether and how the potential rural advantages and disadvantages in family factors coexist and join to shape rural/non-rural differences in student college expectations. Therefore, this study aims to examine the two narratives to explain the process through which family factors impact the rural/non-rural differences in youth college expectations in the early 2010s.

Literature Review

College Expectations

What college expectation is. College expectation refers to the desire of students to attend college, tempered by the constraining effects of their social environment. Prior studies have also used the construct of college aspirations to express students' desire for their educational futures (Agger et al., 2018; Howley, 2006; Hu, 2003; Sewell et al., 1969). However, there are analytical differences between college expectations and college aspirations (MacLeod, 2009). As MacLeod (2009) explained, "aspirations are one's preferences relatively unsullied by anticipated constraints; expectations take these constraints squarely into account" (p. 62). Since the possible constraints of family factors that affect one's educational preferences are part of the current study's focus, it is more precise to use the language of expectations rather than aspirations.

Shaping college expectations. Family background factors play an essential role in shaping student college expectations (Andrew & Hauser, 2011; Morgan, 2005; Sewell et al., 1969). According to the Wisconsin model of status attainment, family SES and significant others[1] both influence youth college expectations (Sewell et al., 1969).

Family SES, referring to the economic and social positions of an individual in society, is one of the most significant family factors (Howley, 2014; McDonough, 1997; Sewell et al., 1969). Indices that measure SES as well as separate measures of family income and parental education have both shown significantly positive effects on students' educational expectations (Byun, Meece, & Irvin, 2012; McDonough, 1997; Roscigno, Tomaskovic-Devey, & Crowley, 2006; Roscigno & Crowle, 2009; Sewell et al., 1969; Smith, Beaulieu, & Seraphine, 1995). The current study uses two separate measures, family income and parental education, which represent family economic capital and cultural capital relatively, to explore the effects of family SES on college expectations.

The effects of significant others (i.e., parents, peers, and teachers) on students can be regarded as social capital, which refers to supports from social relationships and networks (Coleman 1988), because significant others exert their effects on students through their "significant" social relationships with students. According to Coleman (1988), the expectations of significant others are one form of social capital. Within families, parents as significant others can influence the educational expectations of children through

[1]Although significant others usually refer to romantic partners, this article follows the Wisconsin model of status attainment to define significant others of students as parents, peers, and teachers, who have significant relationships with students.

their own expectations for students' educational attainment. Empirical studies have found that if parents expect their children to attend college, students will be more likely to have a college plan (Agger et al., 2018; Hossler, Schmit, & Vesper, 1999; Schmitt-Wilson, 2013; Sewell et al., 1969). Underlying the parental expectations are different values and attitudes of parents toward education. For example, parents may understand education in different ways, with parents from more affluent backgrounds seeing education as a positive end in itself while parents from working-class backgrounds treating education as a tool to expand employment opportunity (Francis, 1992; Howley, 2014). These values and attitudes represent a student's family cultural capital, defined as the cultural codes, practices, and dispositions of a family (Lareau, 1987; Bourdieu and Passeron, 1977). Parents can convey these values to students through their expectations for children's educational destinations. In this way, parental educational expectation, as one form of family social capital (Coleman 1988), acts as a bridge for students to access the cultural capital of their families.

According to Coleman (1988), family structure (single-parent vs. two-parent families) is also an indicator that measures social capital because family structure impacts parent-child relationships. Prior studies have found that students from two-parent families are more likely to attend college than students from single-parent families (Byun, Meece, & Irvin, 2012). The heavy work-family burden of single parents may limit the energy and time that parents put into building beneficial relationships with their children (Coleman, 1988). Hence, students from single-parent families may be more disadvantaged in terms of family social capital compared with students from two-parent families. In addition, family social capital is also influenced by how much attention children get from their parents (Coleman, 1988), which indicates the quality of parent-child relationships. Students may benefit from the attention given by their parents when making education-related decisions.

Outside of family, peers and teachers function as significant others by providing information, encouragement, and other forms of social capital to students. Although the effect of friends is relatively smaller than that of other types of significant others, students who have peers who are planning to attend college are more likely to expect to obtain a college education themselves (Hossler et al., 1999). Schools, as one important socialization institution, may also increase the probability of students having college expectations through the encouragement and support of teachers and school counselors (Byun, Meece, Irvin, & Hutchins, 2012; Hossler et al., 1999).

Finally, the social relationships between families, schools, and communities serve as social capital for students to develop educational goals. The interactions between families and communities can serve as information channels to provide social capital to facilitate student college expectations. The higher level of involvement of family members in student educational attainment also shows more interactions and tighter emotional bonds between parents and students, which support students to make education-related decisions.

The Rural Disadvantage Narrative and the Rural Advantage Narrative: Rural/Non-Rural Differences in Family Factors

Economic capital and cultural capital. Previous studies found evidence to support the rural disadvantage narrative. Using data from the 1980s to the 1990s, studies showed that rural students had relatively lower levels of family socioeconomic status (SES), lower family income, and higher poverty rates than non-rural students did (Byun, Irvin, & Meece, 2015; McDonough, 1997; Roscigno & Crowle, 2009). These disadvantages in economic and cultural capital, these studies argued, limit rural students' educational expectations and support.

However, studies using data from the 1990s and 2000s also showed evidence against a purely rural disadvantage in family income. Roscigno et al. (2006) found that in the early 1990s, the average income of students from inner cities was even lower than that of rural students. Churilla (2008) also found that urban and rural children experienced similar rates of poverty in 2006. These findings were based on the various definitions of *rurality*. However, they may suggest changes in rural/non-rural differences in family economic capital over time and raise questions regarding the rural disadvantage narrative. Hence, it is necessary to explore more recent rural/non-rural differences in family economic capital and how those differences may contribute to differences in student college expectations.

Findings regarding parental education levels, which represent family cultural capital, are more consistent. Prior studies across time found that rural parents had relatively lower educational levels than did non-rural parents (Byun et al., 2015; Roscigno et al., 2006; Roscigno & Crowle, 2009; Smith et al., 1995). These findings indicate a rural disadvantage in family cultural capital. However, whether the rural/non-rural difference in parental education may have changed in the early 2010s has not been clarified.

Social relationships and social capital. Evidence supporting the rural advantage narrative has also been found in previous studies. Rural students have closer social relationships both among family members and between family and community (Byun, Meece, & Irvin, 2012; Coleman, 1988; Nelson, 2016). For rural students, the closer social relationships between family and school constitute supportive social capital to develop college expectations by

serving as information channels, providing general support, and shaping a pro-college climate (Nelson, 2016). Hence, more frequent family-school communications in rural areas may support rural students in having college expectations.

In terms of family structure, another indicator of family social capital (Coleman, 1988), rural communities have fewer single-parent families and more two-parent families than non-rural communities (Byun, Meece, & Irvin, 2012; O'Hare, Manning, Porter, & Lyons, 2009). If students from two-parent families are more likely to expect college than students from single-parent families, rural students may have an advantage in developing their college expectations.

Regarding parental educational expectations, however, close social relationships may also limit the college expectations of students. Studies have found that rural people have a strong attachment to land and community, and the choice to go to college creates strains for students and parents since attending college is closely associated with rural students' leaving their communities (Howley, 2006; Ulrich-Schad, Henly, & Safford, 2013). Strong local attachment may limit parents' educational expectations for their children. Rural parents have been found to be less likely to expect their children to attend college than non-rural parents; their lower parental educational expectation further limits the probability of rural students' having college expectations (Byun et al., 2015; Roscigno et al., 2006; Roscigno & Crowle, 2009; Schmitt-Wilson, 2013; Smith et al., 1995; Sherman & Sage, 2011).

The Rural Disadvantage Narrative and the Rural Advantage Narrative: Rural/Non-rural Differences in the Effects of Family Factors

Family factors may have different effects on the college expectations of students across different locales. First, the effect of family SES factors on college expectations may differ for rural students and non-rural students. Through closer family relationships, rural students are more likely to get access to the economic and cultural capital of their parents. Hence, for rural students, the effect of disadvantages in family income and parental education on college expectations may be amplified by their closer family relationships. However, prior research has also found that family SES has a weaker effect on the high school dropout rates of rural students compared with their non-rural counterparts (Howley, 2014, p. 109). Compared with non-rural students, whether family SES factors have a stronger or weaker effect on college expectations for rural students need to be further clarified.

Second, parental educational expectations may also influence rural and non-rural students differently. Close relationships between parents and children in rural areas may also enhance the impact of parental educational expectations on children's own expectations (Sherman & Sage, 2011). Parental educational expectations may have a stronger effect on the college expectations of rural students because rural students have closer parent-child relationships than do non-rural students.

Third, previous research also found that when controlling other family factors, family structure has stronger effects on the college enrollment rates of rural students (Byun, Meece, & Irvin, 2012). Because rural residents have more traditional attitudes toward family and marriage (Snyder, 2011), there may be a stronger stigma attached to single-parent families in rural settings. The stronger stigma may limit the social capital available to rural students from single-parent families and enhance the negative effect of being from single-parent families on those students' college expectations. Closer social relationships in rural places may also magnify the positive effects of two-parent families on the college expectations of rural students.

In sum, the rural disadvantage narrative emphasizes that the rural disadvantages in family economic capital and cultural capital lower the college expectation rate of rural students. However, the rural advantage narrative emphasizes that rural families support students in expecting college by the closer and more supportive social relationships among family members and between family and communities. The closeness of social relationships may also influence the degree to which family factors affect college expectations, thereby leading to different effects of family factors across places. To clarify how the two narratives joined to shape the rural/non-rural differences in student college expectations in the early 2010s, this study tested the following hypotheses.

- **Basic hypothesis:** Rural high school students were equally or more likely to expect four-year college education than non-rural students in the early 2010s.
- **SES hypotheses:** Rural students have (1) a lower family income level and (2) a lower parental educational level compared with non-rural students, characteristics that reduce their probability of having college expectations in the early 2010s.
- **Social capital hypotheses: (**1) Rural parents are less likely to expect their children to attend college, a characteristic that reduces the probability of having college expectations for rural students. (2) Rural students are less likely to live in single-parent families, and (3) they are more likely to have more frequent family-school communication, characteristics that increase their probability of having college expectations.
- **Interaction hypotheses:** (1) Family income, (2) parental education, (3) parental educational expectations, and (4) family structure have stronger ef-

fects on the college expectations of rural students compared with non-rural students.

Data and Methods

Data

This study used data from the High School Longitudinal Study (HSLS:09), collected by the National Center for Educational Statistics. The base-year (2009) data provides a nationally representative sample of more than 23,000 ninth-graders from 944 high schools across the United States, with an average of 25 students per school. Students were first followed up with in 2012 when most of them were in grade 11. The dataset comprises rich information about students, their parents, peers, and teachers, as well as about counselors and administrators in high schools. High school locales are also included, which allowed for rural/non-rural comparisons. Data in HSLS:09 were collected through five questionnaires—student, teacher, school administrator, counselor, and parent.

Methods

The sample of this study was limited to students who responded to the student questionnaire and whose parents responded the parent questionnaire. Due to attrition between 2009 and 2012, as well as the survey design, the Student Home-Life Contextual weights (W2W1PAR) were used in all analyses. After weighting, cases lacking either the responses of students or the responses of their parents in either 2009 or 2012 were deleted, reducing the total sample size to 6,371. To address missing data, I estimated models using the multiply-imputed (MI) dataset with the number of imputations as 10. In addition, due to the sample design of the survey, the sample may have the clustering effects that lead to biased standard errors and non-constant variance (heteroscedasticity) (Abadie, Athey, Imbens, & Wooldridge, 2017; Cameron & Miller, 2010, 2015; Longford, 1996). Using robust estimations of standard errors is one way to correct standard errors for clustering and potential heteroscedasticity when modeling the clustering effects is not of specific interests (Abadie et al., 2017; Cameron & Miller, 2010, 2015; Longford, 1996). Therefore, this study used robust estimations of standard errors for all the analyses to deal with the potential clustering effects.

In an ideal situation, spatial analysis, the method that examines the effects of spatial proximity and scales, could be applied to analyzing the spatial differences in student college expectation and the effects of family factors on college expectations. However, due to data limitations, this study was not able to incorporate spatial analysis. Instead, I used descriptive analysis, logistic regression models, and interaction terms to examine the effects of family factors on the college expectations for rural, urban, suburban, and town students.

First, the rural/non-rural and non-metro/metro differences in college expectations and family background were described using cross-tabulations and mean tests.

Second, a series of six logistic regression models were estimated to examine the rural disadvantage narrative and the rural advantage narrative. Basic models that only included the locales of high schools and control variables were estimated to test the basic hypothesis. The rural disadvantage-related family factors (family income and parental education) and the rural advantage-related family factors (social capital-related variables) were then added step by step to examine the SES hypotheses and the social capital hypotheses. By combining both sets of family factors, comprehensive models were estimated to observe how the two sets of family factors work together to shape the rural/non-rural gaps in college expectations.

Finally, with the comprehensive model, I also built interaction terms with each family factor and high school locale to test the interactional hypotheses—whether the effects of family factors differ for rural students and non-rural students.

Variables

Dependent variable. The dependent variable was a dichotomous variable, measuring whether students in grade 11 expected a four-year college education or higher. The value of the dependent variable was one if a student expected to attend a four-year college or higher; if not, the value was zero.

Independent variables. The independent variables of the rural advantage models included family structure (single-guardian family, step-parent family, two-parent family); whether students talked about college plans with parents; family-school communication (whether any family member had talked with school faculty about postsecondary admission requirements); and parental educational expectation (whether parents expect their children to attend college). The four independent variables were measured in 2009 to precede the dependent variable.

The rural disadvantage models included family income and parental education as independent variables. Due to the potential effect of the 2008 recession, family income was measured in 2012 instead of 2009 while parental education was measured in 2009. Family income included four categories: under the poverty line (100% census poverty threshold in 2009[2]); above the poverty line but less than

[2]The U.S. Census calculates the poverty thresholds based on the size of family units. For example, in 2009 the average poverty threshold for families with two people is $14,657. The threshold for families with three people is

$75,000 (median); from $75,000 to $175,000 (90%); and above $175,000. Parental education was a dummy variable measuring whether parents have a college education or not.

Control variables. Control variables include students' gender (1=female; 0=male); race and ethnicity (including White, Asian, Hispanic, African American, and other); enrollment status (whether in 2012 students were enrolled in the same high schools as they were in 2009); whether students had close friends who expected to enroll in a four-year college; whether students talked about options after high school with school counselors; students' sense of school belonging; and math scores. The sense of school belonging is a standardized scale of the degree to which students perceive they belong to their high schools, with a higher value representing a greater sense of school belonging. The variable was created by HSLS:09 through factor analysis based on the degree to which students agree they (1) feel safe at school; (2) feel proud of being part of this school; (3) have teachers or other adults in schools to talk to when encountering a problem; (4) believe school is often a waste of time; and (5) believe getting good grades is important in school. The variable was used as a control variable in Plasman's (2018) article. The variable's Cronbach's alpha was 0.65, a number suggesting that the reliability is acceptable. Student math scores referred to standardized T scores of mathematics, which provided information on student achievement relative to their 9th-grade peers in 2009.

Control variables were mainly from the first wave (2009) in addition to the enrollment status and whether students had talked with counselors about future options, which were only provided in 2012.

Locality and rurality. Locales of high schools were measured in 2012 and divided into four locale types—rural, town, suburban, and urban. The HSLS:09 selected schools randomly based on locale variables in the 2005-06 Common Core of Data (CCD) and the 2005-06 Private School Universe Survey (PSS). The four types of locales were defined based on a set of urban-centric locale codes, with *urban areas* as territories within U.S. Census-defined principal cities, *suburban areas* as territories inside Census-defined urbanized areas but outside principal cities, *towns* as inside urban clusters but outside urbanized areas, and *rural places* as all other territories (Smith & Tickamyer, 2011, pp. 124–126)[3]. For more details, see Table 1.

However, most prior studies used a three-category framework (urban, suburban, and rural) to compare student educational outcomes (Byun, Meece, & Irvin, 2012; Byun et al., 2015). Relatively fewer studies adopted a four-category framework (city, suburban, town, and rural), with the study by Smith and colleagues (1995) being one of the few.[4]

It is crucial to clarify how towns should be classified within a three-category framework. Based on the census standards, towns should be classified as non-rural due to the population size and density. For example, the nationally representative dataset, Educational Longitudinal Study 2002, classifies towns as suburban areas. Prior studies also treat small towns as rural areas due to their similar social and cultural characteristics. For example, based on the metropolitan-centric classification system, which defines *rural* as non-metropolitan, towns outside of metropolitan areas can be classified as rural areas.

To better observe the difference between rural places and towns, this study treated towns as a separate non-rural category and reported the four-category comparison results (rural vs. urban, suburban, and town). However, to dialogue with prior studies, I combined rural and town areas to compare students from the broader rural or non-metro areas with urban and suburban students. I also combined towns with suburban areas and compared rural students with urban students and students from the broader suburban areas. The three-category comparison results are available on request.

Results

Descriptive Analyses

Table 2 shows the observed percentage of college expectations based on different high school locales, along with family factors of interest. Overall, 71.95% of 11th graders expected a four-year college education or higher. The percentage of rural students who had college expectations was 70.40%, lower than the percentage of urban (72.54%) and suburban students (76.24%) but higher than the percentage of town students (64.39%). The rural-urban difference in college expectation is not statistically significant, but both the rural-suburban and rural-town differences are significant. In general, rural students were equally likely to expect four-year college compared with non-rural students as a whole. This result supports the basic hypothesis.[5]

$17,916. The number of related children under 18 years old also influences the poverty thresholds.

[3]The locale assignment standards from the National Center for Education Statistics (NCES) are based on U.S. Census definitions, by which a *principal city* is defined as the main core city in a metropolitan area; *an urbanized area* is defined as a place with 50,000 or more people, while an *urban cluster* is defined as having at least 2,500 and fewer than 50,000 people. *Rural* encompasses all population, housing, and territory not included within an urban area. See also table 1.

[4]Smith et. al (1995) defined city, suburban, town, and rural based on the rural-urban continuum codes, also called the Beale Codes, which divide metropolitan and non-metropolitan areas into nine subgroups based on census-defined urban population size and adjacency to metropolitan areas (U.S. Department of Agriculture, 2013).

[5]However, when combining town students with rural

Table 1

Classification of Urban, Suburban, Rural, and Town

	Definition	Population Size
Urban	Territory inside an urbanized area and inside a principal city[1]	>50,000
Suburban	Territory outside a principal city and inside an urbanized area	>50,000
Town	Territory inside an urban cluster	2,500-49,999
Rural	Territory defined as rural by the Census Bureau	<=2,500

Source: Definitions and data are from Geverdt (2017).
Note: [1]Principal cities refer to the largest incorporated place in each metropolitan or micropolitan area (Geverdt, 2017).

Regarding family income, rural students reported a significantly smaller proportion of families in poverty than did urban students; a significantly larger proportion of families with income levels between $75,000 (median) and $175,000 (90%) than did urban and town students; and a smaller proportion of families with incomes higher than $175,000 than did urban and suburban students. The results showed that rural students were less likely to report the highest (>$175,000) and the lowest (below poverty line) levels of family income, but more likely to report a median level of family income. Taken together, rural students did not report a significantly different level of family income compared with non-rural students as a whole. Hence, in the early 2010s, rural students did not have an obvious disadvantage in family income.

Regarding parental education levels, rural students were significantly less likely to have college-educated parents than were suburban students, while the rural-urban and rural-town differences in parental educational levels were not significant. Hence, rural students did have a disadvantage in parental educational levels.

Regarding social capital, rural students reported a significantly lower level of parental educational expectation than did urban and suburban students. Among urban parents, 82.14%, and 82.81% of suburban parents, reported that they expected their children to attend four-year colleges, significantly higher than the percentage of rural parents who did so (75.86%). The result indicates relatively lower social capital for rural students in terms of parental educational expectations.

Table 2 does not show significant rural/non-rural differences in whether students talked about going to college with their parents in 2009. However, a significantly higher percentage (45.74%) of rural students reported that their family members had talked with school faculty about college early in 2009 compared with the percentage of suburban (38.42%) and town students (39.68%). Non-rural students as a whole reported a significantly lower percentage of family-school communication about college than did rural students. The result suggests that rural students relied on the social relationships between families and communities more when pursuing higher education than did non-rural students.

In addition, significantly fewer rural students (20.31%) were from single-guardian families than urban and suburban students (25.79% and 24.92% relatively). The finding of fewer single-guardian families in rural places implies relatively advantaged family structures in terms of social capital for rural students.

In sum, rural students did not report obvious disadvantage in terms of family income, but they reported a disadvantage in parental education. Although rural students reported a relatively disadvantaged situation regarding parental educational expectations, they showed relative advantages in the social capital and social relationships considering the fewer single-guardian families and the higher proportion of family-school communications.

Logistic Regression Models

Basic model. Model 0 of Table 3 used school locales (rural, urban, suburban, or town) to predict college expectations. Consistent with the descriptive analysis, suburban students were significantly (35%) [OR=1.35; (1.35-1)×100%=35%] more likely than rural students to expect college education. Town students were 24% [OR=0.76; (1-0.76)×100%=24%] less likely than rural students to expect college education. There was no significant rural-urban difference in college expectations.

Model 1 shows that after controlling for school factors, the peer factor, and individual characteristics, the

students, non-metropolitan students reported a significantly smaller proportion of college expectations than suburban students, while there are no significant differences in college expectations across different school locales when combining suburban students with town students.

Table 2

Weighted Rural and Non-Rural Differences in College Expectations and Family Factors

Variable Name	Description	Rural	Urban	Suburban	Town
Dependent Variable					
College Expectation (%)	Do you expect 4-year college or higher education?	70.40	72.54	76.24a	64.39abc
Family Factors					
Family Income in 2012 (%)	Poverty (Reference)	14.75	21.37a	15.82b	16.19
	Poverty threshold- $75,000 (median)	44.70	45.21	40.59	49.32c
	$75,000(median)-$175,000(90%)	34.99	25.96a	33.46b	28.59a
	Larger than $175,000	5.56	7.46	10.12ab	5.90c
Parental Education (%)	Do you have at least one parent who has a bachelor's degree in 2009?	36.72	38.90	45.20ab	33.79c
Parents Education Expectation (%)	Do you as parents expect your children (9th grader) to attend a 4-year college	75.86	82.14a	82.81a	73.72bc
Family Structure（%）	Single-guardian family (Reference)	20.31	25.79a	24.92a	19.73c
	Having step parents	16.54	15.05	13.46	18.85c
	Intact/ two-non-step-parent family	63.15	59.16	61.62	61.42
Family School Communication (%)	Family talked with counselor/teacher about postsecondary admission requirements in 2009 (0=No;1=Yes)	45.74	42.56	38.42a	39.68a
Talk College with Parents (%)	Whether students talked going to college with any one of their parents (0=No; 1=Yes)	83.38	81.91	84.58	81.47
Control Variables					
Math Scores (Mean)	Students' Math Standardized T Scores in 2009	50.87	51.86	52.68a	49.76bc
School Belonging (Mean)	The standardized scale score of student's sense of school belonging in 2009	0.05	0.16a	0.10	0.01b
Peer College Plan (%)	Having close friends who plan to attend a 4-year college in 2009	91.42	89.83	93.10	90.66
Enrollment Status (%)	Student Enrollment Status in the spring term of 2012: in base-year school or not	86.60	81.04a	84.29	89.46bc
Talk Options with Counselors (%)	Talked w/ high school counselor about options for after high school in 2009	61.30	60.74	67.56ab	57.49c
Female (%)	Being a female or not	49.23	50.02	49.71	48.50
Race (%)	White (Reference)	63.70	34.55a	52.36ab	67.37bc
	Asian	1.61	5.27a	4.22a	1.17bc
	Hispanics	13.92	33.67a	21.23ab	15.63bc
	Black	12.06	17.54a	13.34	4.95abc
	Others	8.71	8.97	8.85	10.89
N/%		1837/ 28.84	1966/ 30.87	1779/ 27.92	789/ 12.38
Total				6371	

Source: Data from High School Longitudinal Study 2009-2012.

Note. Significance tests are based on robust estimations of standard errors; $p<0.05$. Mean (or percentage) is significantly different from [a] rural students, [b] urban students, [c] suburban students

rural-suburban difference in college expectations remains significant, but the rural-town difference is only significant at a level of α=0.10. Female students were significantly more likely than male students to expect four-year college. White students were less likely than Asian students to have college expectations, but more likely than Hispanic students to expect college education. The use of counselor services for postsecondary education and the sense of school belonging were both significantly and positively associated with college expectations, as was whether having a close friend who expected college.

Rural advantage models. The four social capital-related factors were added into Model 1 step by step to formulate Models 2 to 5. Model 2 shows that being from a two-parent family was positively and significantly associated with college expectations. After controlling for family structure, the rural-suburban difference remained significant and slightly increased, while the rural-town gap turned out to be significant only at the level of α=0.10 and slightly decreased. The results suggest that for rural students, the higher likelihood of being from two-parent families contributed to their relatively higher college expectation rate than that of town students and narrowed the rural-suburban gap in college expectation rates.

In Model 3, family-school communication was controlled, and the result shows that if family members had communicated with school faculty about college in 2009, students were more likely to expect college in 2012. After controlling for family-school communication, the rural-town gap in college expectations became non-significant, while the rural-suburban gap remained significant and slightly increased. The result suggests that the greater proportion of family-school communications of rural students narrowed the rural-suburban gap in college expectations and contributed to rural students' higher college expectation rate compared to that of town students.

Model 4 controlled whether students talked with parents about attending college and shows that talking with parents about going to college is positively and significantly associated with college expectations. After controlling the variable, the significant rural-suburban difference in college expectations increased slightly.

In Model 5, parental education expectation was controlled. Parental educational expectation was positively and significantly associated with college expectations of students. Consistent with the descriptive result that rural parents were less likely to expect their children to attend college than did suburban parents, controlling for parental educational expectation narrowed the rural-suburban gap in college expectations.

In sum, the findings support the social capital hypotheses and the rural advantage narrative by showing that the rural advantages in family structure and family-school communication contributed to the relatively higher college expectation rate of rural students than that of town students while also narrowing the rural-suburban gap in college expectations. The lower parental educational expectations of rural students contributed to rural students' lower college expectation rate in comparison to that of suburban students.

Rural disadvantage models. Family SES factors were added into the basic model to build the rural-disadvantage models. Both family income and parental education were positively and significantly associated with college expectations. Model 6 shows that, controlling for family income, the rural-town difference in college expectations turns to be non-significant. The rural-suburban difference remained significant but decreased. Model 7 shows that, controlling for parental education, the rural-suburban difference turns out to be not significant as well. The results suggest that the low family income level in towns significantly contributes to the rural-town gap in college expectations, while the rural disadvantage in parental education explains the rural-suburban gap in college expectations. Hence, the results partially support the SES hypotheses and the rural disadvantage narrative.

Comprehensive models. Social capital-related variables and family SES-related variables were combined in the comprehensive models (Models 8 and 9). After controlling for all family factors, the models do not show significant rural/non-rural differences in college expectations, suggesting that rural students are as likely to expect college as non-rural students when all family factors are comparable.

Adding the social capital-related family factors led to still significant but lower effects of family income and parental education. This result suggests that family SES factors both influence college expectations directly and indirectly through their effects on the social capital-related factors.

When controlling family income and parental education, family-school communication was not significant, suggesting that family-school communication mediates the effects of family SES factors on college expectations and only has indirect effects on college expectations.

The effect of family structure was also not statistically significant when controlling family SES factors. This result implies that, in the early 2010s, the supporting effects of two-parent families were mainly due to their higher level of economic and cultural capital. Hence, when the family SES factors (family income and parental education) are controlled, coming from a two-parent family is not significantly associated with college expectations.

The effects of parental educational expectation and talking about college with parents remain significant but are slightly reduced after controlling for family SES factors. The results show that even when family SES factors

are comparable, the expectation of parents on students' educational destinations and parent-child communication still have significant and direct effects on the shaping of college expectations of students.

The final comprehensive model (Model 9) included math scores to further observe the process through which family factors influence college expectations. Consistent with prior studies, the model shows that math scores are significantly and positively associated with college expectations when family factors are controlled for. The significant math score suggests that college expectations are not a "static mental construct," wholly adopted from students' family background (Morgan, 2005). After controlling math scores, the effects of SES factors, parental educational expectations, and talking about college with parents were all reduced but were still statistically significant. Therefore, these family factors not only have direct effects on college expectations but also affect college expectations indirectly through influencing the math scores of students.

In sum, the comprehensive models show that the rural disadvantage-related factors (SES factors) and the rural advantage-related factors (social capital-related variables), although offsetting the effects of each other, both have essential influences on college expectations.

Interaction effects. The study also explored the interaction effects between family factors and school locales and found that only family income and parental education have different effects on college expectations across different school locales. Table 4 shows that having the highest level of family income (>$175,000) has a significantly greater effect on college expectations for town students than for rural students. Town students are more sensitive to the highest level of family income than are rural students from a similar income level. Having college-educated parents has a significantly smaller effect on college expectations of urban students than rural students. One possible explanation for the smaller effect may be the larger number of colleges in urban places, which support urban students to expect college even when their parents are not college-educated. In addition, both parental educational expectations and family-school communications do not have different effects on college expectations across spaces. Hence, the interaction hypotheses were partially supported.

Discussion

Given the important effects of educational expectations on youth educational and occupational attainment, migration decisions, and other life course outcomes, it is essential to explore rural/non-rural differences in youth college expectations in the early 2010s. This study makes several contributions to research regarding youth educational outcomes across rural and non-rural places. First, it builds on prior studies by showing that in the early 2010s, rural students were not less likely to expect a four-year college education or higher compared with non-rural students. They were, however, less likely than suburban students to have college expectations and slightly more likely than town students to expect college. The results are consistent with the recent findings of NCES that the college enrollment rates of rural students have increased relative to the rates of non-rural students (Nelson, 2016; Snyder & Dillow, 2015, p. 393). They also shed light on the diversity of youth educational outcomes among rural, suburban, urban, and town locations.

Second, the study expands on prior studies by clarifying the rural disadvantage narrative and the rural advantage narrative, narratives that shed light upon the mechanisms through which family factors influenced youth college expectations in the early 2010s. Findings of this study partially challenge the rural disadvantage narrative by showing that rural students did not have more significant economic disadvantages than did urban and town students. The rural disadvantages in family SES are mainly due to the lower educational level of rural parents vs. non-rural parents.

The finding of lower parental educational levels among rural students contributes to prior research on the effects of "rural brain drain" by showing how the lack of college-educated adults may influence youth educational outcomes in rural places. Although the college enrollment rate of rural students has been increasing relative to that of non-rural students (Nelson, 2016; Snyder & Dillow, 2015, p. 393), the rural-urban gap in the proportion of college-educated adults (ages 25-64) has grown over time (U.S. Department of Agriculture, 2016). These seemingly contradictory findings are caused by "rural brain drain." Even though the college enrollment rates of rural students have increased (Nelson, 2016; Snyder & Dillow, 2015, p. 393), because the college-educated rural people are more likely to leave rural places (Corbett, 2007; Carr & Kefalas, 2009), rural places have fewer college-educated adults (U.S. Department of Agriculture, 2016). In turn, rural students are disadvantaged in developing a college expectation because their parents are less likely to be college-educated.

The rural advantage narrative is also partially challenged because rural students have both disadvantages and advantages in terms of social relationships. The study found that rural students are both advantaged in the greater proportion of family-school communications and disadvantaged in the lower parental education expectations than non-rural students. The rural advantage in family-school communications supports prior findings that closer social relationships contribute to educational attainment of students (Byun, Meece, Irvin, & Hutchins, 2012; Coleman, 1988; Nelson, 2016). However, the finding of the rural disadvantage in parental education expectations is in line with prior studies that suggest the stronger community attachment limits col-

Table 3

Odds Ratios (Robust Standard Errors) from the Logistic Regressions on College Expectations

	Basic Models		Rural Advantages Models				Rural Disadvantage Models		Comprehensive Models	
	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Local										
Urban	1.111	1.238	1.249	1.246	1.262	1.157	1.213	1.150	1.097	1.029
	(0.157)	(0.186)	(0.187)	(0.188)	(0.192)	(0.185)	(0.187)	(0.183)	(0.181)	(0.175)
Suburban	1.349**	1.347*	1.369**	1.404**	1.407**	1.298*	1.283*	1.215	1.190	1.132
	(0.148)	(0.158)	(0.162)	(0.167)	(0.170)	(0.165)	(0.157)	(0.150)	(0.153)	(0.146)
Town	0.760	0.752	0.764	0.780	0.787	0.786	0.788	0.790	0.809	0.858
	(0.109)	(0.115)	(0.117)	(0.120)	(0.123)	(0.126)	(0.118)	(0.117)	(0.126)	(0.136)
Peer College Plan		2.035***	1.961***	1.895***	1.714**	1.413	1.745**	1.538*	1.204	1.121
		(0.386)	(0.369)	(0.361)	(0.334)	(0.308)	(0.329)	(0.296)	(0.256)	(0.254)
School Belonging		1.485***	1.480***	1.482***	1.405***	1.377***	1.442***	1.450***	1.364***	1.357***
		(0.0851)	(0.0871)	(0.0883)	(0.0813)	(0.0844)	(0.0841)	(0.0869)	(0.0842)	(0.0855)
Talk Options with Counselor		1.548***	1.555***	1.515***	1.515***	1.501***	1.508***	1.535***	1.502***	1.529***
		(0.175)	(0.177)	(0.172)	(0.174)	(0.182)	(0.171)	(0.178)	(0.183)	(0.194)
Race										
Asian		3.638***	3.585***	3.872***	3.909***	3.553***	4.076***	3.662***	3.528***	2.821**
		(1.057)	(1.054)	(1.172)	(1.209)	(1.123)	(1.231)	(1.149)	(1.184)	(0.999)
Hispanic		0.602***	0.621***	0.652**	0.665**	0.655**	0.875	0.986	0.960	1.052
		(0.0796)	(0.0825)	(0.0882)	(0.0906)	(0.0952)	(0.127)	(0.146)	(0.150)	(0.169)
Black		0.695	0.824	0.827	0.837	0.860	1.100	1.176	1.210	1.702*
		(0.152)	(0.170)	(0.171)	(0.175)	(0.184)	(0.225)	(0.244)	(0.255)	(0.378)
Others		0.816	0.869	0.879	0.869	0.866	0.995	0.999	0.989	1.034
		(0.115)	(0.125)	(0.125)	(0.123)	(0.123)	(0.154)	(0.161)	(0.155)	(0.174)
Enrollment Status		1.572**	1.467**	1.459*	1.430*	1.345	1.414*	1.398*	1.290	1.224
		(0.222)	(0.214)	(0.215)	(0.213)	(0.206)	(0.206)	(0.209)	(0.201)	(0.203)
Gender		1.493***	1.518***	1.505***	1.459***	1.355**	1.548***	1.562***	1.417**	1.442**
		(0.162)	(0.165)	(0.164)	(0.160)	(0.158)	(0.171)	(0.175)	(0.167)	(0.176)
Family Structure										
Step-Parents			1.293	1.262	1.255	1.327			1.117	1.204
			(0.223)	(0.219)	(0.218)	(0.253)			(0.208)	(0.236)
Two-non-step			1.719***	1.679***	1.686***	1.603***			1.138	1.105
			(0.222)	(0.220)	(0.221)	(0.218)			(0.156)	(0.157)
Family School Communication				1.506***	1.479***	1.400**			1.265	1.225
				(0.170)	(0.167)	(0.171)			(0.158)	(0.157)
Talk College with Parent					1.815***	1.685***			1.570**	1.432*
					(0.236)	(0.230)			(0.222)	(0.218)
Parents Educ. Expectation						3.083***			2.513***	2.096***
						(0.382)			(0.314)	(0.277)
Family Income										
Poverty Threshold-$75,000							1.797***	1.635**	1.558**	1.522*
							(0.288)	(0.263)	(0.258)	(0.261)
$75,000-$175,000							3.817***	2.551***	2.204***	1.977***
							(0.681)	(0.457)	(0.410)	(0.379)
> $175,000							15.53***	8.163***	6.886***	5.814***
							(4.669)	(2.510)	(2.095)	(1.851)
Parental Education								2.788***	2.383***	2.081***
								(0.347)	(0.303)	(0.268)
Math Scores										1.060***
										(0.00691)
F Statistic	5.71***	17.50***	17.64***	17.39***	16.86***	19.01***	21.67***	22.72***	20.86***	21.65***
N	6371	6371	6371	6371	6371	6371	6371	6371	6371	6371

Note: Robust standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Reference categories: Rural, White, Single-Guardian Family, Poverty.

Table 4

The Interactional Effects of Family Factors and School Locales on College Expectations (Regression Coefficients)

	Income			Parental Education
	Poverty Threshold-$75,000	$75,000 – $175,000	> $175,000	
Rural	0.202	0.606	1.074	1.047
Urban	0.740	0.662	1.761	0.336^{+}
Suburban	-0.374	0.289	1.548	0.667
Town	0.571	1.370	4.154*	1.047

Notes. The coefficient results are based on the two interaction models with all other variables of the comprehensive model (Model 9) and the interaction terms. Complete results of the interaction models are available on request. The significant tests are based on robust estimations of standard error.
$^{+}p<0.1$, $*p<0.05$ (coefficient is significantly different from the coefficient for rural students).
Reference Category: Poverty.

lege expectations of students (Howley, 2006; Ulrich-Schad et al., 2013). Given the stronger community attachment, parents may not want their children to leave local communities to attend college, thereby limiting students' probability to expect college.

Third, the findings of this study contribute to prior research by suggesting that the rural disadvantage and advantage narratives should not be studied separately. This study found that rural students have both a disadvantage in family SES and an advantage in social capital at the same time. These rural disadvantages and advantages in family factors offset each other's effects when shaping the rural/non-rural gap in college expectations. As prior studies have claimed, economic and cultural capital can be transferred into social capital (Parcel, Dufur, & Cornell Zito, 2010). It is easier for middle-class families with more economic capital and cultural capital to build beneficial relationships with school faculty, relationships that further benefit students' educational attainment (Lareau, 1987, 2011; Sherman & Sage, 2011). This is illustrated by the finding that the effects of family-school communications turned out to be non-significant when controlling SES factors. Consistent with prior studies, this finding suggests that students from families with higher economic and cultural capital (SES) were more likely to report family-school communications, which further influence their college expectations. Therefore, although rural students have advantages in social capital, their disadvantage in SES limits the supportive effects of social capital.

By comparing rural students with urban, suburban, and town students, this study agrees with prior studies on the importance of avoiding a simple dichotomic rural-urban comparison (Brown & Schafft, 2011; Burdick-Will & Logan, 2017; Lichter & Brown, 2011). The study shows that rural/non-rural differences in college expectations are more complex than previously thought, considering the unequal distribution of resources both within and between non-metropolitan and metropolitan America.

Regarding the rural-urban differences, in the early 2010s, rural students reported significantly higher income than did urban students. However, their family income levels were significantly lower than those of suburban students. The results show the unequal distribution of economic resources in metropolitan areas (between urban and suburban areas) and contribute to prior studies by challenging the rural disadvantage narrative.

Regarding rural-suburban differences, suburban students, although with higher SES levels, reported a lower proportion of family-school communications than rural students did. The finding supports the rural advantage narrative and prior findings that rural students have closer social relationships between families and communities. However, the smaller proportion of family-school communications of suburban students may also be due to the fact that suburban parents are more likely to be college-educated and knowledgeable of basic information about college admission. On the contrary, rural parents, who are less likely to be college-educated, may have to rely on school faculty to get information about college. Hence, the finding suggests that the rural disadvantage in parental education may also contribute to the closer social relationships between families and schools in rural places.

Findings regarding rural-town differences contribute to prior studies by showing an unequal distribution of resources within non-metropolitan America. The descriptive analysis results show that town students were similar to ru-

ral students in terms of family income, parental education, parental educational expectations, and family structure. However, they were similar to suburban students in terms of low levels of family-school communications. The finding suggests that town students were disadvantaged in both family economic and cultural capital and social capital compared with students from other places.

The lower family income levels of town students relative to those of rural students suggest that within non-metropolitan areas, economic resources are not equally distributed. Given the persistence of non-metropolitan poverty (Brown & Schafft, 2011; Tickamyer, Sherman, & Warlick, 2017), the distribution of poor families in the non-metro population, its cause and related effects merit exploring. Simultaneously, surprisingly, town students did not report as high a proportion of family-school communications as rural students did, while traditionally, small towns in non-metropolitan areas are treated as rural (Brown & Schafft, 2011). One possible explanation may be the increasingly diverse racial composition in non-metropolitan America (Lichter, Parisi, & Taquino, 2016). Compared with remote rural areas, new-coming minority migrants may tend to move to towns where the transportation and infrastructure are more convenient. Increased racial diversity may lead to increased community conflicts and decreased social cohesion in small towns (Lichter & Brown, 2011), thereby resulting in less frequent family-school communications that disadvantaged town students in their educational attainment.

In addition, the study also highlights how defining *rurality* matters because results of the two three-category comparisons (non-metro/rural vs. urban and suburban; rural vs. urban and suburban, including town) are different from the results of the four-category comparisons (rural vs. urban, suburban and town). When treating town students as rural/non-metro, non-rural/ metro students as a whole have a significantly higher level of college expectations than rural/non-metro students, which is consistent with prior studies using data collected between the 1980s and the early 1990s (Haller & Virkler, 1993; Hu, 2003). However, when treating town students as suburban, both the rural-urban and rural-suburban differences in college expectations are not significant.

By treating towns as a separate category, the four-category comparisons shed light on the diversity between rural and town students: the diversity hidden in the three-framework comparison results that have significant effects on the comparison results. Therefore, how *rurality* is defined matters given the differences between the four-category comparison and the two three-category comparisons.

Conclusion

In sum, this study found that in the early 2010s, using a four-category comparison (rural vs. urban, suburban, and town), rural students were not less likely to expect college education than non-rural students as a whole. Both the rural disadvantage narrative and rural advantage narrative are partially challenged when examining how family factors contribute to the rural/non-rural differences in college expectations. The rural disadvantage narrative is partially challenged because rural students did not have a disadvantage in family income in the early 2010s. The rural advantage narrative is also challenged because the closer social relationships in rural places had both positive and negative effects on college expectations. Overall, family SES factors and social capital related factors together shaped the complex rural/non-rural differences in college expectations in the early 2010s.

Limitations and Implications for Future Research

First, although this study used more recent data to explore rural/non-rural differences in college expectations, readers should be cautious to conclude that historical changes in rural/non-rural education inequality have occurred because prior studies used different definitions of *rurality*. Future studies should use a consistent definition of *rurality* to observe historical changes in rural/non-rural differences in youth educational outcomes over time.

Second, this study used school locales to compare rural students with non-rural students. However, it is possible that students may live in one community but attend high schools in another community. For example, a student living in a rural place could attend high school in a town or an urban place nearby. The HSLS:09 dataset does not provide residential information of students. Future research should explore how educational attainment may differ across residential locales instead of school locales and how living and studying in different places may influence educational outcomes.

Third, due to the limited information provided by HSLS:09, this study only used whether family members communicated with school counselors regarding postsecondary admission to represent family-school communication. Looking at more diverse types of communication between family members and school faculty can be helpful to improve the understanding of the effects of family-school communications on college expectations.

Fourth, due to the limitation of the data, this study did not use formal spatial analysis. In an ideal situation, such analysis could be used to analyze the spatial differences in student college expectation and the effects of family factors on college expectations by examining the effects of spatial proximity and scales. Future research should apply spatial analysis to examine rural/non-rural inequality in educational attainment to better understand the spatial differences both within and between rural/non-rural boundaries.

Fifth, the distribution of college resources across places may also influence the rural/non-rural inequality in educational attainment. Future research should explore how college information, including tuition, the availability of fellowships, as well as the distance between home and the college to examine the rural/non-rural inequality in educational attainment and the effects of community attachment.

Finally, future research should use more recent data to explore how rural/non-rural college expectations affect rural/non-rural differences in college enrollment, college completion, and college attainment patterns.

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