

# **Rural/Non-Rural Differences Among Pennsylvania FAFSA Applicants Pursuing the Same Type of Postsecondary Degree**

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*To support rural postsecondary students' college access and completion, researchers, policy makers, and educators need a more comprehensive understanding of their demographic characteristics and financial needs, especially compared to nonrural students. Previous rural-nonrural analyses have not disaggregated students by degree type (bachelor's, associate's, or certificate/diploma). Accordingly, this article analyzes the demographic, financial, and educational characteristics of Pennsylvania postsecondary students; identifies rural-nonrural differences among students pursuing the same type of degree; and examines the distinctive needs and challenges of rural postsecondary students. The primary data source is the 2010-11 Free Application for Federal Student Aid (FAFSA, n = 610,925 Pennsylvania applicants), supplemented by interviews with two policy experts and six financial aid administrators at rural postsecondary institutions in Pennsylvania. Students from rural counties were underrepresented among FAFSA applicants. Salient geographic differences included the type of institution students planned to attend, type of secondary diploma, marital status, age, adult learner status, parental education, dislocated worker status, family income, poverty, and expected family contribution. The findings suggest that in Pennsylvania, geographic location structures who pursues higher education and applies for the FAFSA, their financial circumstances, and the types of institutions they select.*

Geographic location is an overlooked river of inequality in college access and completion (McDonough, Gildersleeve, & Jarsky, 2010). For decades, rural communities have trailed cities and suburbs in postsecondary attendance and attainment (Brown & Schafft, 2011; Byun, Irvin, & Meece, 2012; Byun, Meece, & Irvin, 2012; Demi, Coleman-Jensen, & Snyder, 2010; Hu, 2003; Smith, Beaulieu, & Seraphine,

1995), and this gap is growing. From 2000 to 2014 the share of college-educated rural adults increased from 15% to 19%, yet the rural-urban gap widened from 11% to 13% (USDA Economic Research Service [ERS], 2015). Despite these entrenched disparities, most of the research and policy debates on college students either do not consider geography or focus on urban settings.

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This study addresses several gaps in the literature about rural college students. First, we need to understand the demographic characteristics and educational status of rural students compared to nonrural peers, including their degree programs and the institutions they attend. This information will help policy makers and educators more accurately identify student needs and underserved groups. Second, there is scant post-recession data on rural and nonrural students' financial needs and characteristics, information that can inform financial aid policies and practices. Third, previous rural-nonrural analyses have not differentiated students pursuing a bachelor's degree, associate degree, or certificate/diploma. Since these degrees signal divergent aspirations, students in each category are likely to differ in their socioeconomic status (SES), academic preparation, and other traits. These degrees also confer unequal advantages in income and occupational status, with bachelor's degrees

providing greater rewards (Pascarella, Terenzini, & Feldman, 2005). To compare similar students, researchers need to account for geographic differences *within* the same degree type. Together, these analyses can help policy makers and educators understand geographic differences in students' characteristics and financial needs.

The purpose of the study was to describe the demographic, financial, and educational characteristics of Pennsylvania postsecondary students<sup>1</sup> and to identify rural-nonrural differences among students pursuing the same degree. Students' county of residence was considered rural if its population density was at or below the state median of 284 people per square mile (Center for Rural Pennsylvania [CRP], 2017a). The study analyzed data from the 2010-11 Free Application for Federal Student Aid (FAFSA,  $n = 610,925$ ), supplemented by interviews with higher education finance policy experts and financial aid administrators at rural postsecondary institutions. Previous analyses of rural-nonrural student differences have used surveys such as the National Education Longitudinal Study (NELS), which last surveyed respondents in 2000. Our analysis is timely given the post-recession spike in poverty and unemployment (USDA ERS, 2015). In addition, we analyzed FAFSA records, which include more current, fine-grained information about student financial characteristics than other datasets. Since the FAFSA is used to determine financial need, FAFSA financial data are likely to be more accurate and precise than surveys using income ranges. By highlighting geographic disparities among FAFSA applicants, this study can inform efforts to increase college access and persistence, especially for rural students. To our knowledge this is the first study to analyze rural-nonrural differences among all FAFSA applicants in one state and to provide post-recession financial data on rural students.

### Literature Review

Rural adults in every age group trail their nonrural peers in college attendance. In 2015, 29% of rural 18- to 24-year-olds were attending college, compared to 41% to 48% of young adults in towns, suburbs, or cities (National Center for Education Statistics [NCES], 2017). Since 2004, the rural-nonrural college enrollment gap for this age group has nearly doubled, from 9.5 percentage points (Provasnik et al., 2007) to 18.4 percentage points (NCES, 2017). For rural 25- to 29-year-olds, the 2015 enrollment rate was 7.5% vs. 9.0% to 10.7% in nonrural areas, similar to the 2004 figures (Provasnik et al., 2007). Gibbs (1998) found that at age 25, only 56% of high school graduates who had lived in a rural community at age 14 attended college, compared

to 65% of their urban peers. Thus, we concur that "rural college access has been ignored as a substantive policy issue" (McDonough et al., 2010, p. 191).

Rural underrepresentation in college attendance stems from community conditions and material and cultural resources such as nearby colleges, aggregate education levels, school quality, labor markets, family income and socioeconomic status, academic preparation, and educational and occupational aspirations—and the meanings of these constructs for rural residents (Gibbs, 1998; McDonough et al., 2010; Sherman & Sage, 2011). Many rural youth are strongly attached to place (Howley, 2006) and feel torn between staying in their community or moving—often permanently—for college and employment (Hektner, 1995; see also Demi et al., 2010; Sherman & Sage, 2011). This circumstance is what McDonough and colleagues (2010) call the "golden cage" of rural college access.

Since "lower college attendance is the single most important component of lower rural college completion rates" (Gibbs, 1998, p. 78), suppressed rural educational attainment is not surprising. Nearly one in five rural, working-age adults in the United States has a bachelor's degree or higher, compared to about one in three nonrural adults (USDA ERS, 2015). Although rural students tend to benefit from social and cultural capital such as close ties to families, schools, and churches (Byun, Meece, & Irvin, 2012; McDonough et al., 2010), they still have lower college enrollment and degree attainment than their urban peers, primarily because of their lower socioeconomic status (family income and parental education; Byun, Meece, & Irvin, 2012).

Institutional type matters because institutions vary in their selectivity and their geographic distribution. Rural students are more likely than nonrural students to attend institutions that are rural (Gibbs, 1998), public (Byun, Irvin, & Meece, 2012; Gibbs, 1998; Hu, 2003), and less selective (Byun, Irvin, & Meece, 2012, 2015; Kim & Schneider, 2005). They are less likely to attend private four-year colleges (Hu, 2003) and selective institutions, "even after controlling for SES, curriculum intensity, and other demographic and high school achievement variables" (Byun et al., 2015, p. 275). The latter finding is concerning because attending a selective institution is related to higher graduation rates (Alon & Tienda, 2005) and future earnings (Pascarella et al., 2005). By contrast, NELS analyses showed that compared to suburban high school students, rural and urban students were more likely to enroll in a four-year, rather than two-year, college (Kim & Schneider, 2005, p. 1191), although rural students also attended less selective colleges than suburban students.

Prior analyses of rural-nonrural differences in student financial characteristics are either outdated or include only community college students. The median family income

<sup>1</sup>We refer to all FAFSA applicants as students, even though some may not have been enrolled in high school or college upon submitting the FAFSA.

for rural postsecondary students in the 1991 National Longitudinal Study of Youth (NLSY) was \$30,045, compared to \$34,500 for urban students (Gibbs, 1998; \$53,999 and \$62,005, respectively, in 2017 dollars). In 2007-08, 33% of all U.S. community college students were rural, yet they received 39% of all Pell grants and about two-thirds of institutional aid awards, indicating high levels of need (Katsinas & Hardy, 2012). In addition, a greater share of rural community college students (26%) incurred debt than their urban (14%) or suburban (14%) peers at two-year colleges—and this gap had increased since 2000-01 (Katsinas & Hardy, pp. 500-501). According to the 1991 NLSY, rural postsecondary students were significantly more likely to receive loans and grants than urban students, leading Gibbs (1998) to conclude that “their decision to attend is more sensitive to loan and grant availability, as well as to the geographic availability of affordable colleges” (p. 67). We could not locate any data on rural and nonrural postsecondary students’ poverty rates or expected family contribution (EFC).

**Postsecondary Education in Pennsylvania**

Pennsylvania has lower college attendance than many other states. Nearly 756,000 Pennsylvanians were enrolled in college in fall 2010 (Pennsylvania Department of Education, 2013), the year of our study. About two-fifths (38%) of all 18- to 24-year-olds and 4% of 25- to 49-year-olds were attending college, compared to 44% and 9%, respectively, in states with the highest enrollment (National

Center for Public Policy and Higher Education [NCPPE], 2008).

The proportion of Pennsylvania students attending community colleges (22%) is one-half the national average (NCPPE, 2008), chiefly because these colleges are located near Philadelphia and Pittsburgh, “leaving the ‘T’ area (mostly rural counties) devoid of community college opportunities. When students in these areas manage to get to community college, either through distance learning or distance driving, they face higher costs than ‘in-county’ students” (Pathways PA, 2009, p. 2; see also Education Policy Leadership Center [EPLC], 2006, p. 29). The dearth of rural colleges matters because proximity increases the odds of applying to college, especially a four-year institution (Turley, 2009), and because community colleges are the main gateway to higher education for lower-income, rural residents (Garza & Eller, 1998; Katsinas & Hardy, 2012).

In 2010, 27% of Pennsylvania residents—nearly 3.5 million people—lived in the state’s 48 rural counties (CRP, 2017a). In all, there are 79 postsecondary institutions and campuses in these counties (authors’ calculations; the 19 urban counties were excluded).<sup>2</sup> Just over one-half (51%) of

<sup>2</sup>This figure includes satellite campuses, regardless of whether the main campus is located in a rural or urban county. For example, Penn State’s main campus and six of its commonwealth campuses are in rural counties, as is Penn College of Technology, a “special mission affiliate” of Penn State. All seven campuses were counted in the tally. By contrast, Harrisburg Area Community College’s main campus is in an urban county, but one of its satellite campuses is rural. Only the latter campus was included in the tally.

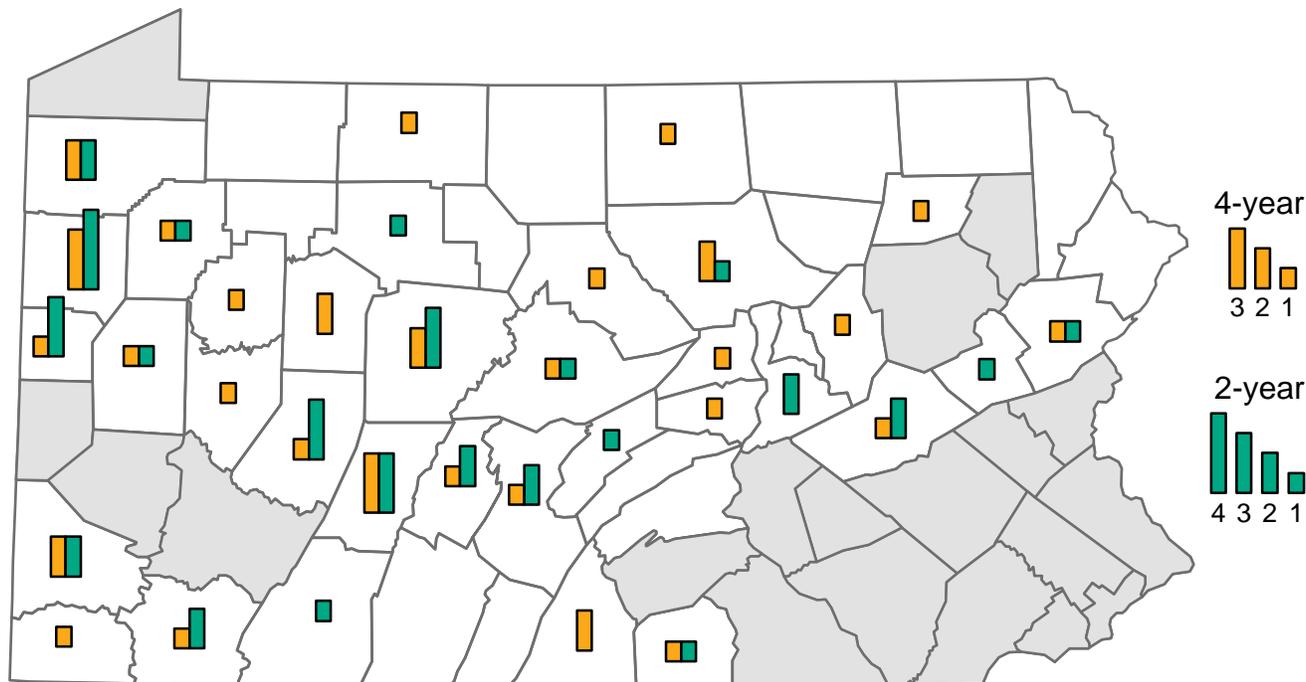


Figure 1. Distribution of two- and four-year institutions across rural counties in Pennsylvania

postsecondary institutions are two-year, and 49% are four-year. The most common institutional type is for-profit two-year (37%), followed by public four-year (30%), private four-year (19%), and public two-year (14%). Figure 1 shows how two- and four-year institutions are distributed across rural counties. Fourteen rural counties (29%) have no higher education institutions. Of the 34 counties with a postsecondary institution, only 11 (33%) have a community college. And in seven rural counties (21%), a public four-year college is the *only* postsecondary option. These figures highlight the scarcity of community colleges and the importance of public four-year colleges in shaping access to higher education.

Rural Pennsylvanians' limited access to postsecondary institutions contributes to lower educational attainment (EPLC, 2006). Only 20% of rural Pennsylvanians aged 25 or older have a college degree or higher, compared with almost one in three urban Pennsylvanians (CRP, 2017c). Rural Pennsylvanians who are male, have low incomes, or have a General Educational Development (GED) diploma are less likely to enroll in college; however, financial aid significantly improves rural students' college persistence (Yan, 2002).

The net price of college (after financial aid) constitutes a large proportion of Pennsylvanians' family income—on average, 29% for community college and 41% for public four-year institutions, well above the national average (NCPPE, 2008, p. 7). Affordability is even worse for Pennsylvania families in the bottom income quintile: a public four-year college and a community college require 87% and 65% of family income, respectively (NCPPE, 2008). In 2015, Pennsylvania ranked 49<sup>th</sup> in state fiscal support for higher education (Center for the Study of Education Policy, 2015).

In addition, economic differences structure life opportunities and educational decisions of rural and nonrural FAFSA applicants. Rural Pennsylvanians' average household income in 2007-11 was \$57,826, and 39% had incomes below \$35,000. Rural residents' per capita personal income was \$34,521—nearly \$11,000 less than their urban peers, a gap that has more than doubled since 1970 (Pennsylvania Department of Community and Economic Development, n.d.). The poverty rate in 2011 was nearly 14% for rural and urban counties; in 2014 urban poverty declined to 13.4%, but rural poverty increased to 14.0% (CRP, 2017b). (For other rural-nonrural comparisons, see CRP, 2017c, 2017d.) Our analyses of FAFSA applicants' characteristics and rural-nonrural differences should be interpreted in light of this higher education and economic landscape.

### Research Design and Methods

This article answers two research questions: How do the demographic, educational, and financial characteristics

of rural FAFSA applicants compare to those of nonrural applicants pursuing the same type of degree? According to the FAFSA data and key informants, what are the distinctive needs and challenges of rural postsecondary students? This study used a quantitative-dominant mixed methods design (Johnson, Onwuegbuzie, & Turner, 2007). FAFSA records were used to identify and compare applicants' attributes, whereas interviews with key informants were used to contextualize the quantitative findings and to mine policy experts' and financial aid administrators' knowledge of rural students' needs and characteristics. Quantitative and qualitative analyses were integrated in the interpretation phase (Greene, Caracelli, & Graham, 1989, p. 270).

We selected Pennsylvania because the Pennsylvania Higher Education Assistance Agency (PHEAA), which administers state-based financial aid and houses FAFSA data, had an agreement with the Center for Rural Pennsylvania, our funder, to share the data. Since confidential FAFSA data are seldom available to researchers, the grant provided an ideal opportunity to analyze all Pennsylvania FAFSA records for 2010-11. Comparable data from other states were not available. Pennsylvania is the sixth most populous state and has a large rural population. As such, our findings have implications for rural-nonrural student differences in other states.

### Quantitative Methods

**FAFSA data.** We analyzed student characteristics using data from applicants who completed the FAFSA between June 1, 2010 and June 30, 2011. FAFSA data were provided by PHEAA. FAFSA applicants who were U.S. citizens or nationals, were Pennsylvania residents, planned to have an undergraduate student status in 2010-11, and were pursuing an undergraduate degree (bachelor, associate's, certificate or diploma, teaching credential [non-degree program], or other/undecided) in 2010-11 were included in analyses.

**Measures.** Student ZIP codes were matched with corresponding counties to determine nonrural or rural residence. As noted above, counties were classified as rural if their population density was 284 people or fewer per square mile. Accordingly, 48 of Pennsylvania's 67 counties are considered rural (CRP, 2017a).<sup>3</sup>

<sup>3</sup>There are several reasons we used CRP's population density measure rather than a more fine-grained definition such as the National Center for Education Statistics' (NCES) locale codes. The CRP definition is used in all their funded projects to ensure commonality across studies and was required for our study. This definition was developed and adopted through hearings with policy makers and data users in our state. The CRP has found that density is the main driver of rurality in Pennsylvania, so this definition is appropriate for our study. In addition, applying NCES locale codes to Pennsylvania school districts results in some groups with only a few districts, rendering the resulting analyses unreliable (Mary Kandray Gelenser, personal communication, May 5, 2017). Finally, time and funding constraints did not allow for additional

Socio-demographic characteristics included age, gender, high school completion status (high school diploma, GED certificate, or other), and parents' educational attainment (each parent's highest grade completed). The 2010-11 FAFSA did not ask applicants' race/ethnicity.

According to the federal aid criterion for financial independence, *adult learners* are defined as age 24 years or older (born before January 1, 1987).

*Educational status variables* included (1) the degree or certificate student would pursue in 2010-11 (bachelor's degree, associate's degree—occupational or technical program, associate's degree—general education or transfer program, certificate or diploma program of less than two years, certificate or diploma program of two or more years, and teaching credential [non-degree] or other/undecided); (2) grade level when entering postsecondary school (never attended college and first-year undergraduate, attended college before and first-year undergraduate, second-year undergraduate/sophomore, third-year undergraduate/junior, fourth-year undergraduate/senior, or fifth-year/other undergraduate); (3) whether the applicant would have a bachelor's degree before 2010-11; and (4) the type of institution receiving the FAFSA report (private four-year, public four-year, community college, technical school, or other).<sup>4</sup> Applicants can list up to 10 colleges on the FAFSA and must follow additional procedures to send it to more institutions.

*Financial variables* include (1) Expected Family Contribution (EFC, the amount of money a family or student is expected to contribute to the student's postsecondary education for one year); (2) total adjusted gross income (AGI); (3) total earnings from work, assets, and other taxable and untaxed income during the prior year;<sup>5</sup> (4) poverty status based on total earnings, adjusted for family size (less than or equal to the poverty level [i.e., poverty]; greater than poverty level but less than or equal to 150% of poverty level [i.e., near-poverty]; or greater than 150% of the poverty level); (5) student's financial independence (based on FAFSA criteria); (6) whether either parent (if a dependent student) or the student or spouse (if an independent student) is a dislocated worker; and (7) whether applicant (if independent) has one or more children who receive more than one-half of their support from the applicant. All data on EFC, total AGI, total earnings, and poverty status refer to the applicant's family.

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analyses using a second definition of rural, as requested by an anonymous reviewer.

<sup>4</sup>“Other institutions” include two-year private institutions and Pennsylvania hospital schools of nursing, which offer a three-year program leading to a registered nurse certification but no academic degree.

<sup>5</sup>We did not adjust for cost of living because the federal government does not adjust for this when calculating the EFC from the FAFSA data.

**Data analysis.** Because PHEAA could not release individual-level data due to confidentiality, they conducted all data analyses on individual-level data, as specified by our team, and sent us the results. Regression analyses were not possible because we did not have access to the raw data. Contingency table (crosstabular) analysis using the Chi-square statistic and independent t-tests using the Statistical Analysis System (SAS) were used to determine whether rural and nonrural students within each degree type differed significantly from each other (Ott, 1984). The project team constructed a limited number of contingency tables, based on the aggregated data provided by PHEAA; PASW Statistics (SPSS) was used to calculate significance tests. Given the large number of records, only differences with a p-value less than 0.001 were deemed statistically significant. Selecting a p-value different from 0.001 and closer to the significance level of 0.05 commonly used with smaller sample sizes had little effect on which variables were statistically significant.

### Interviews

We interviewed financial aid administrators (FAAs) and policy experts because they have a birds-eye view of student characteristics, financial aid, and higher education policies and practices at their institution and across the state and nation, respectively. The two policy experts were chosen because of their expertise in higher education finance policy in Pennsylvania.

Before selecting the FAAs, we categorized all postsecondary institutions in the 48 rural counties by *institutional type* (community college; business/technical school; four-year private, non-religious; four-year private, religious; public four-year), *size* (smaller or larger than the median for each institutional type), and *geographic region*. After selecting for maximum variation (Patton, 2002) across these characteristics, we invited the financial aid director to be interviewed. The final sample included FAAs (four women and two men) from a small public university, a large public university, a small religious college, a large private (non-religious) college, a small for-profit business/technical school, and a large community college (see Table 1).

All FAAs, except for those at the two private colleges, gave permission to disclose their names and institutional identities. For these institutions, we rounded figures and provided ranges in Table 1. The community college, business/technical school, and small public university primarily serve students in surrounding rural areas. Although located in rural counties, the large public university and two private colleges include a mix of rural and nonrural students.

Interview questions for policy experts focused on state and national trends in postsecondary financial aid policy, financial needs and characteristics of Pennsylvania college students, and policy analysis and recommendations. Questions for FAAs focused on students' financial needs and

Table 1

*Institutional Profiles (2011-12)*

Characteristics	Public four-year		Private four-year		Two-year	
	Large Public (Penn State)	Small Public (Mansfield)	Non- Religious	Religious	Community College (Harrisburg Area CC—Gettysburg)	For-Profit Business/ Technical (Penn Commercial)
Undergraduate enrollment	38,954	2,876	>1,800	<1,800	~2,325	392
Mean net price: <i>all</i> students & <i>low-income</i> students <sup>a</sup>	\$22,560	\$14,824	\$25,000	\$20,000	\$10,202	\$24,200
	\$18,115	\$12,531	\$15,000	\$17,000	\$8,927	\$25,521

<sup>a</sup> Source: National Center for Education Statistics (NCES) College Navigator. NCES data are for *full-time beginning* undergraduate students in 2011-12 who paid *in-state tuition* and *were awarded grant or scholarship aid from federal, state, or local governments, or the institution*. Low-income = family income of \$30,000 or less. Average net price = total cost of attendance minus average federal, state/local government, or institutional grant or scholarship aid.

characteristics, financial aid trends and practices, FAFSA completion, and policy recommendations. We inquired about the distinctive needs of three student groups: adult learners, low-income or first-generation students, and rural students. For this article, we analyzed the interview data only on rural students. Thus, the interview data presented here are intended to be illustrative, not exhaustive; key informants' comments are meant to supplement FAFSA records by elucidating the particular needs and challenges of rural college students.

The interview questions about rural students either focused specifically on this group or elicited a comparison of rural vs. urban students. The FAAs' responses typically centered only on rural students, but the comparison to urban students was often implied. For example, when asked, "What are the main differences that you see [regarding] financial need for students from rural communities versus urban communities?" the FAA responded, "For rural students, first of all, we probably have a larger number of them who are first-generation college students." Interview excerpts, therefore, reflect the FAAs' perceptions of the distinctive situations and characteristics of rural students.

Two interviews were conducted face-to-face and six by phone. Lasting 30 minutes to two hours, interviews were audio-recorded with permission and transcribed verbatim. We used thematic analysis (Patton, 2002) to code the transcripts in NVivo software. For this article, all statements about students from rural areas were reviewed to identify relevant findings. Similar statements were grouped and labeled (e.g., less access to higher education, transportation challenges) until all statements were coded.

### Limitations

The findings must be interpreted in light of several limitations. First, due to PHEAA confidentiality restrictions we did not have access to the primary data and could not conduct regression analyses. However, the alternative was not to access any FAFSA data. Although the data

are descriptive, they still elucidate the characteristics of, and disparities between, rural and nonrural students in Pennsylvania. The results should be interpreted as tentative and exploratory, providing a baseline for comparisons with other states and indicating fruitful areas for future research and initiatives to increase rural residents' postsecondary access and persistence. Second, we do not know whether applicants attended college in 2010-11 (only that they intended to) or how much or what kinds of financial aid they received. Third, we could not analyze racial differences because the FAFSA does not ask about race/ethnicity. Fourth, we do not know how the characteristics of FAFSA applicants compare to non-applicants, who may differ in age, income, enrollment patterns, program of study, or other ways. Finally, the county is a rough geographic measure of rurality, since many urban counties include rural municipalities. Despite these limitations, the study offers an in-depth analysis of all FAFSA applicants in one state.

## Results

### Overview of FAFSA Applicants

Six in 10 (59%) FAFSA applicants were women. The mean age was 24, the federal threshold for being considered an adult learner. More than 40% of applicants had incomes at or below 150% of the poverty level. In 2011, Pennsylvania's adult poverty rate was 12.1%, suggesting that FAFSA applicants had a much higher poverty rate (Pennsylvania State Data Center, 2012). Rural and nonrural students pursued comparable degrees: about 60% bachelor's (BA/BS), 27% to 28% associate's degree, and 12% to 14% certificate, diploma, teaching credential, or other degree of less than two years.

Rural residents were underrepresented among FAFSA applicants. One-fifth of the FAFSA applicants (20.3%;  $n = 123,890$ ) were from rural counties and 79.7% ( $n = 487,035$ ) were from nonrural counties. By comparison, 27.5% of Pennsylvanians aged 18 or older with at least a high

school diploma live in rural counties (U.S. Census Bureau, 2011). About 2,900 Pennsylvania FAFSA applicants came from the average rural county, compared to 25,000 from the average nonrural county. The median values were somewhat lower than the mean values, indicating that some counties had an unusually large number of applications. The average rural county only had four FAFSA applicants for every 100 residents (range = .01 to .05) compared to five for the average nonrural county (range = .04 to .06). The rural-nonrural county difference in the number of FAFSA applicants per capita (0.0379 vs. 0.0495) is statistically significant ( $p < 0.05$ ).

### Rural-Nonrural Differences by Degree Type

This section presents rural-nonrural differences between FAFSA applicants by the degree they planned to pursue (see Table 2). Given the large number of cases, rural and nonrural applicants differed significantly on most of the variables. This article focuses on the variables that the literature suggests are most relevant to students' educational trajectories and that have larger rural-nonrural differences (three or more percentage points).<sup>6</sup>

**Type of postsecondary institution.** Across all degree types, rural students disproportionately planned to attend four-year institutions and nonrural students to attend community colleges, a pattern that we partially attributed to the uneven geographic distribution of two- and four-year postsecondary institutions (see interview data below). First, rural BA/BS students were more likely to plan to attend a four-year *public* institution than their nonrural counterparts (54% vs. 41%). Conversely, nonrural BA/BS students were more likely than rural BA/BS applicants to plan on attending a four-year *private* college (29% vs. 23%) or a community college (9% vs. 4%).

Among associate degree students, about the same percentage of rural and nonrural applicants planned to attend a four-year *private* college (5% to 6%). Nonrural associate's degree students were more likely than their rural peers to attend a community college (54% vs. 30%). By contrast, rural associate degree students were more likely to attend a public four-year university (14%) or some other type of non-technical school (31%) than nonrural students. Only 4% of nonrural associate degree students planned to attend a private four-year college, and 19% indicated some other type of non-technical institution. Rural associate degree

<sup>6</sup>For instance, these variables were analyzed in the final report to the funder (Prins et al., 2014), but not in this article: veteran status; applicants' beginning or continuing student status; years in postsecondary school; full- vs. part-time enrollment status; housing plans for postsecondary school; whether applicant had ever been in legal guardianship, homeless, or an emancipated minor; whether since age 13 applicant had been in foster care, a dependent or ward of the court, or both parents died; legal Pennsylvania resident status and length of residence; household size; number of people in household planning to attend college; and parents' marital status.

students were somewhat more likely to attend a technical school than nonrural associate degree students (20% vs. 17%).

Given the scarcity of rural community colleges, we hypothesize that the 14% of rural associate degree students who planned to attend a public four-year college do so because it is the only accessible postsecondary institution (see Figure 1) and/or because it is more affordable than a private for-profit institution (as illustrated by the tuition and net price in Table 1). However, further research is needed to verify this hypothesis.

Compared to associate and BA/BS students, rural and nonrural certificate/diploma students were more likely to attend a technical school. However, nonrural students were more likely to do so than rural applicants (56% vs. 49.5%). Nonrural certificate/diploma students were more likely to attend a community college than their rural counterparts (17% vs. 14%). On the other hand, rural certificate/diploma students were more likely than their nonrural peers to plan on attending a public four-year institution (7% vs. 2%) or some other type of college (27% vs. 22%). About 3% of both rural and nonrural certificate/diploma students planned to attend a private four-year college.

**Socio-demographic characteristics.** The most notable geographic differences were marital status among associate and certificate/diploma (ACD) students and lower parental educational attainment (particularly for fathers) among rural students, particularly for fathers. Other notable differences included a greater propensity for rural certificate/diploma students to have completed a high school diploma and for their nonrural counterparts to be adult learners.

Among certificate/diploma students, rural applicants were more likely to receive a high school diploma than their nonrural peers by 2010-11 (85% vs. 80%) and somewhat less likely to have a GED diploma (13% vs. 16%). The pattern was similar for associate degree students, although with smaller rural-nonrural differences. The percentage of rural and nonrural BA/BS students with a GED vs. high school degree did not differ substantively: about 3% would receive a GED diploma and 96% a high school diploma by 2010-11.

The gender distribution was similar for rural and nonrural students within each degree type: women comprised 56% of BA/BS students, 63% of associate's degree students, and 67% to 68% of certificate/diploma students. Rural ACD applicants were less likely to be single than their nonrural counterparts. Among associate degree students, 77.5% of nonrural and 68% of rural students were single; among certificate/diploma students, these figures were 77% for nonrural applicants and 64.5% for rural ones. The difference between rural and nonrural BA/BS students was much smaller (88% and 90.5%, respectively).

Across all degree types, rural applicants were less likely to be adult learners than nonrural applicants, with the largest differences among ACD students. For associate degree

Table 2  
 Characteristics of Rural and Nonrural FAFSA Applicants by Degree Type

	BA/BS				Associate				Certificate/Diploma								
	Rural		Nonrural		Rural		Nonrural		Rural		Nonrural		Rural				
	N	% or Mean	N	% or Mean	N	% or Mean	N	% or Mean	N	% or Mean	N	% or Mean	N	% or Mean			
<b>Type of Postsecondary School Receiving FAFSA – Total</b>																	
Private Four-year	73,036	276,110	276,110	29.3%	34,391	124,249	124,249	6.4%	8,812	44,998	44,998	3.2%	8,812	44,998	44,998	3.2%	$\chi^2=711.570$ ; df=4; p<0.001
Public Four-year	16,725	22.9%	80,976	29.3%	1,782	5.2%	7,930	6.4%	295	3.3%	1,424	3.2%	295	3.3%	1,424	3.2%	
Community College	39,762	54.4%	113,229	41.0%	4,862	14.1%	5,376	4.3%	602	6.8%	972	2.2%	602	6.8%	972	2.2%	
Other	2,746	3.8%	24,023	8.7%	10,371	30.2%	66,779	53.7%	1,206	13.7%	7,499	16.7%	1,206	13.7%	7,499	16.7%	
Technical School	13,505	18.4%	56,630	20.5%	10,550	30.7%	23,252	18.7%	2,347	26.6%	9,953	22.1%	2,347	26.6%	9,953	22.1%	
	298	0.4%	1,252	0.4%	6,826	19.8%	20,912	16.8%	4,362	49.5%	25,150	55.9%	4,362	49.5%	25,150	55.9%	
<b>Socio-Demographic Characteristics</b>																	
High School Completion Status by 2010-11	73,032	276,102	276,102	95.5%	34,386	124,243	124,243	83.6%	8,810	44,977	44,977	80.0%	8,810	44,977	44,977	80.0%	$\chi^2=140.447$ ; df=2; p<0.001
High School Diploma	70,019	95.9%	263,687	95.5%	29,651	86.2%	103,850	83.6%	7,461	84.7%	36,001	80.0%	7,461	84.7%	36,001	80.0%	
GED Certificate	2,141	2.9%	8,791	3.2%	4,292	12.5%	18,464	14.9%	1,176	13.3%	7,120	15.8%	1,176	13.3%	7,120	15.8%	
Other	872	1.2%	3,624	1.3%	443	1.3%	1,929	1.6%	173	2.0%	1,856	4.1%	173	2.0%	1,856	4.1%	
Gender – Total	71,297	268,479	268,479	55.9%	33,691	121,119	121,119	63.2%	8,650	44,215	44,215	68.4%	8,650	44,215	44,215	68.4%	$\chi^2=4.625$ ; df=1; p=0.032
Female	40,096	56.2%	150,007	55.9%	21,169	62.8%	76,497	63.2%	5,810	67.2%	30,219	68.4%	5,810	67.2%	30,219	68.4%	
Male	31,201	43.8%	118,472	44.1%	12,522	37.2%	44,622	36.8%	2,840	32.8%	13,996	31.6%	2,840	32.8%	13,996	31.6%	
Marital Status – Total	73,036	276,110	276,110	90.5%	34,391	124,249	124,249	77.5%	8,812	44,998	44,998	77.4%	8,812	44,998	44,998	77.4%	$\chi^2=660.757$ ; df=1; p<0.001
Single	64,347	88.1%	249,890	90.5%	23,461	68.2%	96,333	77.5%	5,681	64.5%	40,504	77.4%	5,681	64.5%	40,504	77.4%	
Other	8,689	11.9%	26,220	9.5%	10,930	31.8%	27,916	22.5%	3,131	35.5%	13,306	22.6%	3,131	35.5%	13,306	22.6%	
Age (mean) <sup>b</sup>	73,036	22.2	276,110	22.5	34,391	26.9	124,249	27.3	8,812	28.1	44,998	28.0	8,812	28.1	44,998	28.0	$t=-0.87$ ; p=0.384
Born Before January 1, 1987 (Adult Learner)	73,036	276,109	276,109	23.5%	34,391	124,249	124,249	55.4%	8,812	44,998	44,998	58.9%	8,812	44,998	44,998	58.9%	$\chi^2=242.538$ ; df=1; p<0.001
Yes	15,348	21.1%	64,979	23.5%	17,447	50.7%	68,905	55.4%	4,810	54.6%	26,508	58.9%	4,810	54.6%	26,508	58.9%	
No	57,688	79.0%	211,130	76.5%	16,944	49.3%	55,344	44.5%	4,002	45.4%	18,490	41.1%	4,002	45.4%	18,490	41.1%	
Father's Educational Attainment – Total	72,733	274,362	274,362	43.0%	33,820	122,014	122,014	19.2%	8,348	43,446	43,446	16.3%	8,348	43,446	43,446	16.3%	$\chi^2=509.711$ ; df=3; p<0.001
Middle School/Jr. High	3,316	4.6%	12,269	4.5%	3,615	10.7%	11,705	9.6%	947	11.3%	4,117	9.5%	947	11.3%	4,117	9.5%	
High School	39,392	54.2%	118,103	43.0%	20,296	60.0%	63,001	51.6%	4,979	59.6%	22,044	50.7%	4,979	59.6%	22,044	50.7%	
College or Beyond	25,606	35.2%	117,906	43.0%	5,882	17.4%	23,453	19.2%	1,365	16.4%	7,074	16.3%	1,365	16.4%	7,074	16.3%	

Table 2  
 Characteristics of Rural and Nonrural FAFSA Applicants by Degree Type (continued)

	BA/BS				Associate				Certificate/Diploma			
	Rural		Nonrural		Rural		Nonrural		Rural		Nonrural	
	N	% or Mean	N	% or Mean	N	% or Mean	N	% or Mean	N	% or Mean	N	% or Mean
Other/Unknown	4,419	6.1%	26,084	9.5%	4,027	11.9%	23,855	19.6%	1,057	12.7%	10,211	23.5%
Mother's Educational Attainment – Total	72,873		275,293		33,871		122,278		8,359		43,501	
Middle School/Jr. High	2,287	3.1%	9,665	3.5%	2,676	7.9%	10,598	8.7%	692	8.3%	4,089	9.4%
High School	35,585	48.8%	119,575	43.4%	19,863	58.6%	64,783	53.0%	4,979	59.6%	23,302	53.6%
College or Beyond	31,346	43.0%	129,960	47.2%	8,714	25.7%	32,855	26.9%	1,965	23.5%	9,861	22.7%
Other/Unknown	3,655	5.0%	16,093	5.8%	2,618	7.7%	14,042	11.5%	723	8.6%	6,249	14.4%
<b>Financial Characteristics</b>												
EFC (mean) <sup>c</sup>	67,549	\$10,061	247,912	\$12,825	29,654	\$4,925	101,884	\$4,214	7,234	\$5,088	34,509	\$3,481
Total AGI (mean) <sup>d</sup>	73,036	\$65,391	276,110	\$74,553	34,391	\$38,314	124,249	\$32,943	8,812	\$37,447	44,998	\$26,300
Total Earnings (mean) <sup>e</sup>	73,036	\$62,931	276,110	\$72,439	34,391	\$36,352	124,249	\$31,444	8,812	\$34,569	44,998	\$24,784
Poverty Level Based on Total Earnings – Total	73,036		276,110		34,391		124,249		8,812		44,998	
≤ Poverty Level	14,346	19.6%	56,015	20.3%	12,800	37.2%	55,298	44.5%	3,393	38.5%	24,631	54.7%
> Poverty Level but ≤ 150% of Poverty Level	7,500	10.3%	26,255	9.5%	5,050	14.7%	18,196	14.6%	1,266	14.4%	6,009	13.4%
> 150% of Poverty Level	51,190	70.1%	193,840	70.2%	16,541	48.1%	50,755	40.8%	4,153	47.1%	14,358	31.9%
Applicant, Spouse, or Parent Is Dislocated Worker	69,948		262,381		31,304		110,140		7,843		38,968	
Yes	6,503	9.3%	26,302	10.0%	5,947	19.0%	18,559	16.9%	1,869	23.8%	8,412	21.6%
No	63,445	90.7%	236,079	90.0%	25,357	81.0%	91,581	83.1%	5,974	76.2%	30,556	78.4%
Applicant is Financially Independent of Parents	73,036		276,110		34,391		124,249		8,812		44,998	
Yes, With Child Dependents	8,546	11.7%	32,635	11.8%	11,741	34.1%	44,411	35.7%	3,292	37.4%	18,628	41.4%
Yes, Without Child Dependents	8,393	11.5%	38,648	14.0%	7,354	21.4%	31,999	25.8%	2,041	23.2%	12,197	27.1%
No	56,097	76.8%	204,827	74.2%	15,296	44.5%	47,839	38.5%	3,479	39.5%	14,173	31.5%

$\chi^2=228.377$ ;  $df=3$ ;  $p<0.001$

$\chi^2=538.649$ ;  $df=3$ ;  $p<0.001$

$\chi^2=688.457$ ;  $df=3$ ;  $p<0.001$

$\chi^2=46.535$ ;  $df=2$ ;  $p<0.001$

$\chi^2=32.848$ ;  $df=1$ ;  $p<0.001$

$\chi^2=323.071$ ;  $df=2$ ;  $p<0.001$

$\chi^2=874.739$ ;  $df=2$ ;  $p<0.001$

$\chi^2=19.169$ ;  $df=1$ ;  $p<0.001$

$\chi^2=216.001$ ;  $df=2$ ;  $p<0.001$

students, 51% of rural and 55% of nonrural applicants were adult learners. For certificate/diploma students, these figures were 55% (rural) and 59% (nonrural). Among BA/BS students, 21% of rural students were adult learners compared to 23.5% of nonrural students. At the same time, the rural-nonrural difference in mean age, although statistically significant, was minor. The mean age of BA/BS students was about 22 years; for associate degree students it was 27 years, and for certificate/diploma students it was 28 years.

Parents' educational attainment differed among rural and nonrural students for each degree type. And for each degree type, rural-nonrural differences in parents' educational attainment were more pronounced for fathers than for mothers. Consistent with prior research, rural students, particularly BA/BS students, had parents with less schooling. Among BA/BS students, rural applicants were more likely than their nonrural peers to have a father whose highest level of education was high school (54% rural vs. 43% nonrural), and less likely to be college or beyond (35% rural vs. 43% nonrural). Geographic differences among BA/BS students in mother's educational attainment were smaller: 49% of rural and 43% of nonrural students had a high school-educated mother, whereas 43% of rural and 47% of nonrural applicants had a mother with at least a college education.

Discrepancies between rural and nonrural students were also apparent in father's educational attainment among associate degree students, although differences were considerably smaller than among BA/BS students. Differences were not as consistent among certificate/diploma students. Rural ACD students were more likely than their nonrural peers to have a high-school educated father (60% vs. 51% to 52%). However, the percentages of rural and nonrural associate's degree students whose fathers completed college or beyond were low (17% and 19%, respectively) and differed by only two percentage points; the percentage was similar for rural and nonrural certificate/diploma students (16%). Rural ACD students were more likely than comparable nonrural students to have a high school-educated mother (59% to 60% vs. 53% to 54%). Differences in the percentage of rural and nonrural ACD students with a mother who completed college or beyond were minor (26% to 27% of the mothers of associate's degree students completed college or beyond; the percentage was about 23% for certificate/diploma students).

Notably, parents' (especially fathers') educational attainment was classified as "other/unknown" for a high percentage of ACD students. This percentage is consistently greater for nonrural students than rural students across all degree types. This category is frequently considered "missing" in other statistical analyses, and is thus excluded. The results here show that father's educational attainment is unknown for about one-fifth (20% to 23.5%) of nonrural

ACD students. On the other hand, parents' educational status was "other/unknown" for less than one-tenth of rural and nonrural BA/BS students. We surmise that these students may have been raised by single mothers, but further research is needed to explore this phenomenon.

**Financial characteristics.** Salient findings discussed in this section include economic vulnerability among all FAFSA applicants—especially ACD students—and opposing geographic patterns of economic disadvantage depending on degree type. First, rural-nonrural differences in adjusted gross income (AGI) and earnings varied by degree type: among BA/BS applicants, rural students had lower AGI and earnings than their nonrural peers, whereas the opposite was true for ACD applicants. The mean AGI and mean total earnings for rural BA/BS students (\$65,391 and \$62,931, respectively) were lower than for nonrural BA/BS students (\$74,553 and \$72,439, respectively). ACD applicants displayed the opposite pattern: Rural associate degree students had a higher mean AGI and mean total earnings (\$38,314 and \$36,352, respectively) than their nonrural counterparts (\$32,943 and \$31,444, respectively). For rural certificate/diploma students, the mean AGI and mean total earnings were \$37,447 and \$34,569, compared to \$26,300 and \$24,784 for nonrural associate degree students.

A substantial rural-nonrural gap in the percentage of applicants' families at or below the poverty level was evident for ACD students, while the difference was minor for BA/BS students. Despite the lower mean income of rural BA/BS students compared to nonrural peers, the percentage of students whose families were in poverty, near-poverty, and greater than 150% of the poverty level did not differ substantively. For both rural and nonrural BA/BS students, 30% were in or near poverty and 70% were above 150% of the poverty level.

Consistent with the data on AGI and earnings, rural ACD students were less likely than nonrural students to be in poor households. Nearly two-fifths of rural ACD students (37% and 38.5%, respectively) were poor, compared to 44.5% and 55% of nonrural ACD students, respectively. Similarly, rural ACD students were more likely than their nonrural peers to have a household income above 150% of the poverty level. Nearly one-half of rural ACD students (47% to 48%) had family earnings above this level, compared to 41% and 32% of nonrural ACD students, respectively.

In sum, nonrural certificate/diploma applicants had the fewest economic resources, on average, of any student sub-group, and nonrural BA/BS students had the most resources. Together, these financial characteristics suggest that economic inequality between BA/BS students and ACD students appears to be greater in nonrural counties.

Consistent with their lower AGI and earnings, the expected family contribution (EFC) for rural BA/BS students was, on average, less than that of their nonrural counterparts

(\$10,061 vs. \$12,825). Again, the opposite was true for ACD students: the mean EFC for rural ACD applicants was about \$5,000, compared to \$4,200 for nonrural associate degree and \$3,500 for nonrural certificate/diploma students.

Overall, 13.2% of rural applicants reported dislocated worker status for themselves, their spouse, or parent, compared to 13.0% of nonrural applicants. However, these figures obscure the economic vulnerability of ACD students. Among certificate/diploma students, 24% of rural applicants and 22% of nonrural applicants had a dislocated worker in the family. For associate degree students, 19% of rural and 17% of nonrural applicants had a dislocated worker in the family. For ACD students, the differences between rural and nonrural students are small but consistent, with rural students being more likely to have a dislocated worker in the family than nonrural students. On the other hand, the percentage of BA/BS students with a dislocated worker in the family was considerably smaller, albeit statistically significant (9% to 10%).

Consistent with their younger age (based on adult learner status), rural BA/BS and ACD students were more likely than their nonrural peers to be financial dependents, with greater differences for ACD students. Among BA/BS students, 77% of rural and 74% of nonrural students were financially dependent on parents; 44.5% of rural and 38.5% of nonrural associate degree students and 39.5% of rural and 31.5% of nonrural certificate/diploma students were financial dependents. Nonrural BA/BS students were more likely to be financially independent (with no child dependents) than rural students (14% and 11.5%, respectively). About the same percentage of rural and nonrural BA/BS students were financially independent with at least one child dependent (12%).

Among certificate/diploma students, nonrural students were more likely to be *independent with at least one child dependent* than their rural counterparts (41% and 37%, respectively), indicating a higher proportion of parents among these students. The responsibility to support one or more children compounds nonrural certificate/diploma students' high level of financial need. The difference for associate degree students was smaller: 36% of nonrural students compared to 34% for rural students.

### Interview Data on Rural Students

Interviews with financial aid administrators and policy experts helped explain several of the quantitative findings, particularly stunted educational access and attainment in rural communities. Financial aid administrators observed that compared to their nonrural counterparts, rural students have less access to postsecondary institutions and higher transportation and/or relocation costs. They are also more likely to be first-generation students and to perceive college as "out of reach." First, a policy expert described how

colleges' and universities' locations hinder access for rural Pennsylvanians:

To complicate matters, Pennsylvania's distribution of institutions is not flat. You have your private institutions that have money concentrated in your urban areas. You have your four state-related institutions located ... where very few rural students would have access [three are located in urban counties]. So they're [rural students] denied that. The PASSHE schools [14 universities in the Pennsylvania System of State Higher Education] tend to be located more in rural areas, but unless you can actually get to those somewhat isolated communities, your access issues are less affordability than geographic.<sup>7</sup> Community colleges are located on the periphery of the state [i.e., near Pittsburgh and Philadelphia], and therefore the low-cost option really doesn't exist. The best example is right here in Centre County. The entire Centre region, it kind of looks like an hourglass that starts off on the northern tier counties, comes together at University Park [Penn State's main campus], and then spreads out on the southern-tiered counties. There's almost no access to a community college.

Other policy analyses (EPLC, 2006, p. 29; Pathways PA, 2009, p. 2) have documented the dearth of community colleges in rural Pennsylvania. This scarcity helps to explain why, within each degree type, rural FAFSA applicants were more likely than their urban peers to apply to public four-year universities, and nonrural students to community colleges. In addition, our geographic analysis showed that 14 of the 48 rural counties (29%) had no higher education institution (Figure 1).

Key informants related that rural students have higher costs for commuting or relocation, which the FAFSA data on EFC, income, and poverty rates do not take into account. A policy expert explained:

A rural student, unless they happen to live in a community with immediate access, [is] going to have either substantial travel costs, or they're going to have to temporarily relocate [and] bear the burden of relocation costs, which most people do not take into account.... So, on the whole, they probably would be economically disadvantaged compared to urban students, on that basis.

<sup>7</sup>Eight of 14 PASSHE universities are located in rural counties (<http://www.passhe.edu/Pages/map.aspx>), per CRP's definition of rural.

The burden of transportation was echoed by FAAs from the community college and the small public university. The former remarked that transportation can affect rural students' financial aid:

They have a longer drive to get here [than urban students]. They don't have access to public transportation. If the student is receiving financial aid and they're driving in a long way to class and their car breaks down and they miss class for a while, they could end up withdrawing or failing from the class and lose their financial aid because they haven't maintained satisfactory academic progress. I've personally seen that in [financial aid] appeals, where transportation quite frequently can be a problem.... We're a totally commuter school here, and more students who may miss class because of bad weather, because they have a long drive to get here.

In addition, rural students may miss class because they have to "take a family member to therapy or to the doctor," trips that involve considerable time and expense. Similarly, "just having gas money [and] having reliable transportation to get here" are challenges:

We have students who come in who just can't get out of the parking lot, because they don't have money for gas. And that usually is a problem for us, because we don't always have emergency funds that students can tap into.

Similarly, the public university FAA contrasted rural and urban students' "overhead" costs:

The urban students will come to a campus, and their overhead will consist of staying on campus, in the dorms, and the meal plan, and all those things connected that way. For the rural students ... they may or may not stay on campus, but most of them don't. And they'll drive back and forth. So their overhead comes in through gasoline, car maintenance, and that type of issue. And ... if they're here all day, they will have meals on campus.

Thus, geographic distance from campus is a substantial yet hidden cost of college attendance for rural students.

Echoing the quantitative data on lower rural parental educational attainment, three FAAs described rural students' access to postsecondary education and knowledge of financial aid. The small public university FAA observed that for rural students

it's not odd for the parents not to have finished junior high school.... College is not available to most of the people in the area, even though the institution is right here. They could walk [to campus] if they wanted to. They just feel like it's out of reach.... So I think more education ... for the community [is needed], because that would ... get folks to understand that higher education is something that's accessible for them and their family. [They don't think it's accessible because] they have put themselves in categories that it's above them, or beyond them. It's not even a matter of being affordable or not affordable: it's just out of their reach.

The FAFSA data showed that on average, rural students have parents with less schooling, which means that many students are first-generation. The community college FAA noted that rural, first-generation students are "unfamiliar" with financial aid and "find it rather daunting to just get through that process." Likewise, the large public university FAA observed that "in an urban setting, students learn more about what to do, what the [financial aid] processes are. They just have more peers around them who have gone through the experience." These comments reinforce the need for education on financial and academic planning for college in rural communities. In addition, the FAA's distinction between cultural vs. physical or financial access supports McDonough and colleagues' (2010) assertion that to understand rural students' college choices, we must consider the "institutionalized signals that indicate to individuals what is possible and logical" (p. 195).

## **Discussion**

This study offers the first comprehensive financial, educational, and demographic comparison of rural vs. nonrural students who applied for federal aid and were pursuing the same type of postsecondary degree. Although the analyses focused on Pennsylvania, many of the findings are consistent with prior research, which suggests that the findings may have implications for policy makers, educators, and researchers in other states, and should prompt further investigation of the issues highlighted here. First, comparable percentages of rural and nonrural FAFSA applicants were pursuing each type of degree, but overall rural students were underrepresented, based on the rural adult population with at least a high school diploma and the average number of applicants per 100 county residents. This reflects the growing rural disadvantage in college attendance (and attainment) in Pennsylvania (Herzenberg & Price, 2008) and nationally (Marré, 2014).

The FAFSA and interview data indicate possible explanations for rural underrepresentation, including lower

parental educational attainment (which shapes students' educational aspirations, knowledge about college, academic preparation, college choice, etc.); geographically-specific costs and obstacles such as commuting and relocation; the sense that college is "out of reach"; and the urban concentration of postsecondary institutions, especially lower-cost community colleges. These explanations are supported by prior research, which identifies additional barriers to college enrollment and completion such as inequitable access to college preparatory classes and the conflict between upward mobility and attachment to place and family, to name a few (Demi et al., 2010; Gibbs, 1998; Hektner, 1995; Marré, 2014; McDonough et al., 2010). Rural FAFSA applicants' underrepresentation underscores the need to close the rural-nonrural gap in postsecondary attendance and completion, which is not a priority for most state or federal policy makers, researchers, or college administrators. In addition, future research should investigate rural-nonrural FAFSA completion patterns, since research shows that marginalized groups such as adult learners are less likely to submit the FAFSA on time, resulting in significantly less state financial aid (Guidos & Dooris, 2008).

Second, the statistical analyses revealed that rural bachelor's and certificate/diploma students were *more likely* than their nonrural peers to plan on attending public four-year institutions, whereas rural associate degree students were *less likely* to attend a community college than their nonrural counterparts. Rural Pennsylvanians therefore face a double burden: limited geographic access to lower-cost community colleges and high tuition at the public universities that they *can* access. (Six of the nation's 12 most expensive institutions for low-income students are located in Pennsylvania; Burd, 2013). Thus, the repercussions of low state investment in higher education are magnified for rural residents through higher tuition and, as the literature review indicated, suppressed enrollment and attainment. Future research should investigate whether our findings—rural FAFSA applicants' underrepresentation and disproportionate reliance on public universities—pertain to states with lower public university tuition, higher per capita state allocation for higher education, and more rural community colleges (see Garza & Eller, 1998, and Katsinas & Hardy, 2012, on the importance of rural community colleges).

Third, applicants' socio-demographic characteristics show that rural-nonrural differences in type of secondary diploma and marital status were larger for students pursuing an associate's degree or certificate/diploma than a bachelor's degree (rural ACD students were less likely to have a GED diploma and to be single). Compared to their nonrural peers, rural students across all degree types were less likely to be adult learners (although over 50% were age 24 or older) and

more likely to be financially dependent on parents. Rural FAFSA applicants tend to attend college at a younger age than their nonrural counterparts. Consequently, rural adults may be an untapped postsecondary audience, one that needs additional types of financial and academic support to attend and complete college (Prins, Kassab, & Campbell, 2015).

Our findings also highlight geographic inequality in parental education (see Smith et al., 1995), mirroring the lower proportion of college-educated adults in rural Pennsylvania and the nation (USDA ERS, 2015). Within each degree type, particularly BA/BS students, rural applicants were more likely than their nonrural counterparts to have high school-educated (rather than college-educated) parents. Over their life course children accrue cumulative socioeconomic advantages from their parents' education. As such, rural BA/BS students in particular were more likely than their nonrural peers to navigate college without the material resources and cultural capital conferred by a college-educated parent (see Bourdieu & Passeron, 1977). These findings highlight the need to design targeted outreach and support services to demystify college for rural, first-generation students.

Finally, FAFSA applicants' economic vulnerability is striking, with poverty or near-poverty rates of 30% to 55% among all students; 9% to 24% reporting dislocated worker status for themselves, a spouse, or parent; and an AGI of less than \$39,000 for rural and nonrural ACD students. This degree of economic insecurity raises concerns about college accessibility, persistence, and outcomes for lower-income students.

Applicants' financial characteristics also demonstrate why we must analyze rural-nonrural differences *within* each degree type. Namely, we found opposing geographic disparities in income, earnings, and poverty for BA/BS and ACD students: Compared to their rural peers, nonrural ACD students had *fewer* financial resources and higher poverty rates, whereas the nonrural BA/BS students had *higher* income/earnings (poverty levels did not differ). Nonrural certificate/diploma students appeared to be the most economically precarious group. For such students, the EFC of about \$3,500 represents more than 10% of the mean family income (\$32,943).

Only rural BA/BS students were at an economic disadvantage compared to nonrural peers. However, rural ACD students were more likely to report dislocated worker status, reflecting the widening rural-nonrural unemployment gap after the 2008 recession in Pennsylvania (Condliffe, 2012) and nationally (USDA ERS, 2015). These findings, along with interview data, suggest that rural students may need additional financial support to pursue a bachelor's degree, to cope with the economic burden of unemployment, or to subsidize transportation or relocation. This suggestion is consistent with Katsinas and Hardy's (2012) argument:

The larger dollar volume of Pell Grants awarded to rural students ... indicates the need for financial aid to assist students with services such as transportation and child care, both of which are more difficult to access in rural America (p. 500).

Policy implications for the Pennsylvania legislature include (a) increasing appropriations for higher education and the state grant program and (b) allowing distance learners to use state grants. Both of these would make postsecondary study more accessible and affordable for rural residents. Additional policy recommendations drawn from the larger study are detailed in the project report (Prins, Kassab, & Campbell, 2014).

In conclusion, the findings show that in Pennsylvania, geographic location structures who pursues higher education and applies for the FAFSA, their financial circumstances, and the types of institutions they select. Future research should investigate how postsecondary institutions are attempting to attract and retain rural students and respond to their needs. We conclude with Garza and Eller's (1998) call for rural colleges and universities to recognize that

their students must cope with geographic distances, poor preparation for college, weak economies, and inadequately trained workforces. Reaching those who face these special barriers to education and employment, therefore, requires colleges to move beyond traditional open-door strategies for increasing access and to provide aggressive outreach and support services to the disadvantaged (pp. 35-36).

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