

ACADEMIC OUTCOMES IN RURAL STUDENTS

RESEARCH BRIEF

ANALYTICS & DECISION SUPPORT
OFFICE OF PLANNING, ANALYTICS & INSTITUTIONAL RESEARCH



Project Summary

This study explored outcomes in students coming from metropolitan vs. rural areas. For the purposes of this study, rural areas are rural areas as defined by the US Census Bureau. First time first year students admitted in fall terms of 2018-2022 were included in the analysis. Rural students are less likely to be retained after one year, especially those who are Pell recipients and first-generation students. Metropolitan designation, Pell status, and first-generation status do not significantly impact cumulative GPA. Number of rural students, and the non-metropolitan, Pell recipient first-generation subgroup are quite small, limiting practical applications of these findings.

Purpose

The purpose of this study was to explore outcomes in students coming from metropolitan vs. rural areas. Additionally, interactions between rural residence, Pell status and first-generation status were explored. Outcomes explored included one year retention, one year progression (i.e., progressed to sophomore status after Year 1) and cumulative GPA.

Key Findings

- Students from areas designated as rural were less likely to be retained after one year. There was a significant interaction between rural area, Pell status and first-generation status; students from rural areas who were Pell recipients and first-generation students were 66% *less likely* to be retained compared to metropolitan, non-Pell recipients, non-first-generation students.
- Rural students were significantly more likely to progress to sophomore status after Year 1 compared to students from metropolitan areas. There were no significant interactions between metropolitan designation, Pell status and first-generation status.
- Metropolitan designation, Pell status and first-generation status did not have a substantial effect on cumulative GPA.
- *One-year retention rates are lower for rural students, particularly those with Pell funding and who are first-generation students; however, progression and cumulative GPA do not vary substantially between these groups.*

Limitations

There are other factors related to student beliefs, perceptions and behaviors influencing the study outcomes that were not measured and could change our findings if the data were available. Additionally, JMU's student population is overwhelmingly students from metropolitan areas leading to a highly imbalanced sample.

Methods

First time first year students admitted in fall terms of 2018-2022 were included in the analysis. Data were obtained from PeopleSoft. Census data were used to determine if a student was retained, based on whether they were enrolled as of census the following fall. Progression was determined based on a student's level the fall after their initial enrollment. Students of sophomore standing or greater were considered to have progressed.

Metropolitan and rural designation was determined using [Rural Urban Commuting Area \(RUCA\)](#) codes from the Economic Research Service of the US Department of Agriculture. There are ten RUCA code designations from the USDA. RUCA codes were combined to create a binary variable identifying whether a student's zip code was in an area with metropolitan RUCA codes (population $\geq 50,000$) or non-metropolitan (population $< 50,000$), which was considered "rural" for the purposes of this study.

Three different regression models were run with retention, progression and cumulative GPA as the respective dependent variables. The model included first-generation status, Pell status, gender, race and college.

Detailed Findings

There were 22,941 students included in the analysis; 948 (4.1%) were from areas with a rural RUCA designation.

A logistic regression model with metropolitan designation, first-generation status, Pell status, gender, race, and college as independent variables explained 12.7% of variation in one-year retention. Rural students (OR = 0.74, 95% CI, 0.56, 0.98), Pell recipients (OR = 0.78, 95% CI, 0.65, 0.94) and first-generation students (OR = 0.80, 95% CI, 0.69, 0.93) were all less likely than their counterparts to be retained after one year. There was a significant interaction between metropolitan designation, Pell status and first-generation status; students from rural areas who were first-generation, and Pell recipients were 66% less likely to be retained than students from metropolitan areas who were not Pell recipients and were continuing generation students.

One Year Retention Rates



One Year Progression Rates



A logistic regression model with metropolitan designation, first-generation status, Pell status, gender, race, and college as independent variables explained 34.1% of the variation in one-year progression. Rural students were more likely to have progressed to sophomore status than students from metropolitan area (OR = 1.51, 95% CI, 1.11, 2.09). First-generation status and Pell status were not significantly associated with progression. Further interactions between these variables were not explored.

A linear regression model with rural designation, first-generation status, Pell status, gender, race, and college as independent variables explained less than 10% of variation in cumulative GPA. Metropolitan designation was not a significant predictor of GPA. Further analyses were not explored given the minimal contribution of these variables in explaining variations in cumulative GPA.

Average Cumulative GPA

