Institutional Location and College Persistence: the Role of Urbanicity

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Extended Abstract
Purpose

An abundant literature exists on the multifaceted determinants of college persistence or departure in the United States. Most literature highlights the important effects of demographic and individual characteristics of students, family background, high school preparation, college experiences, and institutional characteristics on persistence and ultimate degree attainment (Tinto, 2005). However, very little research has focused on the college persistence patterns of students based on location of the institution attended in terms of urbanicity (e.g., urban, suburban, rural). The few national studies that have addressed this issue have focused on issues of whether and where students go to college. These studies have found that urbanicity makes a difference in college access; students in rural areas are less likely to attend college than their urban or suburban peers (Adelman, 2002; Hu, 2003) and less likely to choose highly selective colleges than their urban and suburban counterparts with similarly high levels of academic achievement (Holsapple & Posselt, 2010). Moreover, this research suggests that coming from a rural versus urban location differentially affects the college enrollment patterns of students from different racial/ethnic groups, particularly Hispanics versus Whites (O'Connor, Hammack, & Scott, 2010).

Although existing research indicates that coming from rural areas plays a significant role in affecting college access, and theorists have posited that institutional location (or urbanicity) significantly affects postsecondary persistence (Berger & Milem, 2000), little research has empirically tested whether attending a rural college or university plays a role in persistence *after* students enroll in college. Focusing on persistence as well as initial college enrollment is important because of the shifting domestic policy emphasis toward improving college completion rates (Kelly, Schneider, & Carey, 2010). Moreover, understanding the factors that affect early persistence during the first two years of college is critical, since those are the times when students are most likely to leave college (Berkner, He, & Cataldi, 2002; Tinto, 1993). Accordingly, accountability standards are increasingly focusing on persistence and degree completion, and are becoming more stringent (Tinto, 2005; Titus, 2004). Thus, exploring a range of factors that affect student persistence in different college environments, including different geographical locations, is critical.

This study addresses the question: What are the effects of attending a rural, suburban, or urban institution on college persistence, when controlling for other individual and institutional factors? It also explores the question: Do the correlates of persistence operate in a similar fashion for students enrolled in rural, suburban, and urban institutions, controlling for other individual student and institutional characteristics? Using multilevel modeling techniques, this research provides one of the first quantitative assessments of college student persistence based on institutional location, using nationally representative data.

Theoretical perspectives

This study draws on two theoretical perspectives: Berger and Milem's (2000) framework for understanding the impact of organizational behavior on student outcomes and Titus's (2006a, 2006b) incorporation of the systemic aspect of organizational behavior in that framework. Berger and Milem's (2000) conceptual model postulates that, together, student entry characteristics and organizational characteristics influence an institution's peer group characteristics and student experiences, which, in turn, affect student outcomes (p. 308). Organizational characteristics include two categories: (a) structural demographic features (e.g., size, control, selectivity, Carnegie type, and location, i.e. rural or urban) and (b) organizational behavior (the norms and shared culture of institutional personnel and systems). Organizational behavior can take on one or more of five dimensions: bureaucratic, collegial, political, symbolic, and systemic (see (Berger & Milem, 2000; Birnbaum, 1988). These dimensions, in turn, shape peer group characteristics and student experiences. Peer group characteristics include collective psychological, behavioral, and structural (or demographic) characteristics of students at an institution. Student experiences include individual students' behaviors in the academic, social, and functional (or bureaucratic) realms, as well as students' perceptions of the institutional environment in these realms (Berger & Milem, 2000). Together, these factors are posited to influence a range of student outcomes, including persistence.

When examining the role of location in persistence, therefore, it is also important to account for organizational behavior. Titus's (2006a, 2006b) adaptation of Berger and Milem's (2000) framework emphasizes the systemic dimension of organizational behavior. The systemic dimension focuses on how external forces; such as state and federal law, technology, and market dynamics; influence organizational behavior. Examining systemic organizational behavior, Titus (2006a, 2006b) employed resource dependency theory, which stipulates that, while striving toward organizational autonomy, organizations are also influenced and constrained by external forces, such as limited access to resources (Pfeffer & Salancik, 1978). He found that some organizational behaviors related to resource dependency theory, which he called "institutional financial context" variables, were related to the likelihood of student persistence in a nationally representative sample of institutions and students (Titus). These organizational behaviors were operationalized as institution-level financial activities, including sources of revenue (e.g., state appropriations, tuition, grants and contracts) and patterns of expenditure (e.g., on research and instructional activities). These same measures have also served as useful explanatory indicators of institutions' missions and research orientations (Morphew & Baker, 2004), which could be useful in understanding characteristics of rural land grant institutions. Therefore, we applied these indicators to represent organizational behavior at urban, suburban, and rural institutions on individual student persistence.

Methods

To examine the relationship between individual student-level characteristics, institutional-level characteristics, and individual student persistence, we employed data from two sources: the Beginning Postsecondary Students Longitudinal Study (BPS:04/09), of the U.S. Department of Education, and the Integrated Postsecondary

Data System (IPEDS), sponsored by the National Center for Education Statistics. BPS: 04/09 follows first-time beginning college students in the 2003-2004 academic year and tracks their educational experiences as they interact with the postsecondary education system to document persistence, degree completion, and workforce entry for six years after first enrollment, in 2009 (Cominole, Wheeless, Dudley, Franklin, & Wine, 2007). These data were merged with IPEDS data from corresponding years to incorporate additional measures of institutions' organizational behavior.

BPS students were sampled from student participants who were initially selected to participate in the 2003-04 National Postsecondary Student Aid Study (NPSAS:04) base-year study. Eligible postsecondary institutions constituted the sampling frame for the students who participated in NPSAS:04, and 1,670 institutions were included in this sampling frame. BPS collected data including students' enrollment patterns; employment status; financial status; demographic, family and background characteristics; and eventual persistence and attainment outcomes.

Student persistence served as the dependent variable in this analysis. Persistence was measured by whether a student had graduated or was still enrolled through summer 2009, after starting their postsecondary education during the fall 2003 semester. Students who had already graduated or were still enrolled at their institutions were considered persisters, and those not currently enrolled were considered non-persisters.

At the individual level, demographic and background variables included gender, race/ethnicity, age at first enrollment, income, and parental education. Academic preparation variables included high school GPA and whether the student had received at least one AP credit. "Environmental pull" factors (Bean, 1990) were also included to account for factors that might draw students away from their involvement in college (e.g., part-time enrollment, number of hours worked per week, number of hours worked per week off campus). College experiences included: whether or not students lived on campus, academic performance at the end of the first year, and academic and social involvement.

At the institutional level, structural demographic factor included urbanicity (rural, suburban, urban – with urban as a reference category), public or private sector, whether or not the institution was a land grant institution (a category that accounts for several large rural institutions), and enrollment size. Student peer characteristics included selectivity (average SAT score of incoming class), average SES of undergraduates, and racial/ethnic composition (using a diversity index). Organizational behavior characteristics included percentage of revenue at the institution derived from each of the following sources: state appropriations, tuition, and grants and contracts. These variables also included percentage of institutional expenditures on each of the following activities: research, instruction, and administration. The total educational and general expenditures per Full-Time Enrolled (FTE) student were also measured.

First, we estimated bivariate tests based on student race/ethnicity for student-level characteristics and by the location of the institution for institution characteristics. Students were nested within institutions, and the observations were therefore not independent. Since this violated the independence assumption of OLS regression, a hierarchical generalized linear model (HGLM) was developed to help account for the effect of the institution on individual student persistence. HGLM models use a random

effect for each institution to produce standard error estimates, which helps account for the variability between institutions (Raudenbush & Bryk, 2001).

Findings

Preliminary findings from the HGLM analysis found significant variation in individual student persistence across institutions, indicating that institutional factors matter independently of individual factors in persistence. In addition, significant differences were noted based on the location of the institution attended in whether a student persisted. Students in rural institutions were less likely to persist compared to their peers in urban and suburban institutions. At the individual level, statistically significant differences were also noted for several of the demographic characteristics, high school preparation, environmental pull factors, and college experiences. Namely, having a higher income, parental education, and high school GPA were positively associated with persistence. Environmental pull factors of part-time enrollment and increased number of hours per week worked off campus were negatively associated with this outcome. Living on campus, higher first-year academic performance (college GPA), and academic and social involvement were positively related to persistence.

At the institutional level, besides location, one structural demographic factor positively related to persistence was being a student at a land grant institution. Among peer characteristics, higher selectivity and SES were positively related to persistence. In organizational behavior, an institution's percentage of revenue from state appropriations was positively associated with student persistence. An institution's percentage of expenditures on administration was negatively related to student persistence. Conversely, an increased percentage of expenditures on Full Time Equivalent (FTE) students was positively related to persistence. Further analyses indicated that significant factors predicting persistence differed for students depending on whether these students attended rural, urban, and suburban institutions. These findings will be discussed more in the final paper.

Significance of Work

This study confirms Berger and Milem's (2000) assumption that institutional location matters in college persistence. It suggests that urbanicity should be considered in future theories and research regarding studies of college persistence. In terms of other institutional characteristics, the peer group characteristic of having a lower collective SES at an institution was negatively related to persistence, suggesting that this factor should continue to be considered in future research (Titus, 2006a). Being a land grant institution was positively related to persistence; this may relate to land grant institutions' original mission and purpose to serve their local communities, including training the local workforce (Lucas, 2006).

With a large gap in the percentage of college graduates between rural and urban areas in the United States (Adelman, 2002; Gibbs, 2003, 2005), it is imperative to understand what characteristics could influence college persistence once students enroll in geographically diverse postsecondary institutions. This study's findings that expenditures on administration are negatively related to persistence suggests that current

trends toward funding administrative activities on campuses (Titus, 2006b) at the expense of other areas such as teaching and research are inhibiting student persistence. Conversely, more resources devoted to students can make a positive difference in their persistence (Titus, 2006a, 2006b). State policymakers should consider that increased state appropriations can make a positive difference in student persistence. At the same time, the finding that lower institutional SES of a student body is negatively related to student persistence suggests that institutions that serve lower SES student bodies merit more resources to boost their persistence. Yet, oftentimes public institutions that serve more students with risk factors for not persisting (e.g., low-income, first-generation college-going, and working off campus, as noted in this study) are penalized in funding formulas that are based on their lower persistence rates. Rather than penalize these institutions, state policymakers ought to consider how to offer these institutions opportunities to equalize persistence rates with those of other institutions.

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