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Why We Get Around:

A Mixed Methods Study of College Student Enrollment Mobility

Chelsea Guillermo-Wann, Ph.D.*

Sylvia Hurtado, Ph.D.

Cynthia Lua Alvarez, M.A.

University of California, Los Angeles

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Abstract

College student enrollment mobility complicates institutional efforts to increase retention rates under external pressures. This mixed-methods study identifies factors measuring reasons for college students' enrollment mobility from 13 institutions corroborated with student focus group data from seven site visits. We use confirmatory factor analysis to test the cohesiveness of quantitative survey measures regarding reasons for multi-institution enrollment and stop-out, and then examine differences in their relative importance across mobility patterns. Students' reasons for multi-institution enrollment include Cost/Convenience and Academic Opportunities; for stop-out are Life Circumstances, Career Considerations, and Perceived Mismatch. The qualitative findings also show Lack of Support as an additional reason for mobility. The study emphasizes that students normatively utilize higher education as one system that leads to degree attainment, requiring institutions to collaborate to develop effective ways to educate, retain, and graduate mobile students within regional higher education systems.

Introduction

Understanding college student enrollment mobility is critical to the national college completion agenda because it poses challenges to degree attainment (Adelman, 2006; DesJardins, Ahlburg, & McCall, 2002, 2006; McCormick, 2003) as well as the quality and coherence of undergraduate education (AAC&U, 2002; Kearney, Townsend, & Kearney, 1995). In the established age of mass higher education, American college students have been increasingly able to take courses anywhere as needed through the transferability of the credit hour for various hypothesized reasons (McCormick, 2003). However, many reasons for mobility have yet to be confirmed, and not all forms of multi-institution enrollment contribute to degree attainment (Adelman, 2006; DesJardins, et al., 2002, 2006; McCormick, 2003). Considering that almost 60 percent of undergraduates attend at least two institutions of higher education, and about eight percent appear to be swirling between two- and four-year institutions with little progress towards a degree (Adelman, 2006; Peter & Cataldi, 2005), understanding why students engage in various forms of enrollment mobility demands further attention.

College student enrollment mobility continues to perplex many institutions as they face external pressures to improve student retention and degree completion rates. The U.S. has focused on the challenge to increase degree attainment nationally. President Obama plans for the U.S. to once again become the country with the highest number of college graduates by 2020 through the Health Care and Education Reconciliation Act, which will make available increased Pell Grant funding to students, additional funding to minority serving institutions, and competitive grant funding to states (DOE, 2010). Nevertheless, continued decreases in general state funding simultaneously threatens public institutions' ability to meet these demands. When funding issues are coupled with stagnant retention rates and heightened student mobility, such

countering pressures can paralyze institutions. This may be magnified in broad access institutions in particular, as they tend to have lower retention and graduation rates. Broad access institutions, particularly community colleges, also educate higher concentrations of historically underrepresented, low-income, and first generation students (Cohen & Brawer, 2008; Knapp, Kelly-Reid, Ginder, & Miller, 2008). These students, due to socioeconomic challenges and family responsibilities (Goldrick-Rab, 2006), are more likely to attend in ways that delay and even evade graduation (Adelman, 2006; DesJardins, et al., 2002, 2006; McCormick, 2003). High attrition amongst this population and at broad access institutions is problematic because these students comprise a sector of the American population critical for future national and economic stability (Hurtado, Milem, Clayton-Pedersen, & Allen, 1999; Orefield, Horn, & Flores, 2006). Educators and policy makers must address factors related to college student enrollment across multiple institutions if the nation is to meet national goals to increase degree attainment within the next decade (DOE, 2010; Lumina Foundation, 2011).

Therefore, the purpose of this study is to identify factors measuring reasons for college students' enrollment mobility that are corroborated with student focus group data in diverse learning environments. This study uses confirmatory factor analysis to test the cohesiveness of quantitative measures regarding reasons for multi-institution enrollment and stop-out, and then examines differences in their relative importance across mobility patterns. Qualitative methods simultaneously bring to life the experiences informing students' mobility. This study was conducted during a difficult economic climate at the same time that institutions faced renewed pressure nationally and within state systems to increase retention and degree attainment, making the findings regarding student mobility all the more compelling.

College Student Enrollment Mobility Widens Educational Gaps

Students attend college in a multitude of pathways; however, literature on student enrollment mobility composes a rather simple picture regarding educational disparities when we come to it with the purpose of creating tangible interventions to support students' educational progress and degree attainment. The expanse of research on college pathways includes multiple forms of directional transfer between two- and four-year institutions, stop-out, demographic and academic characteristics of these groups, and differential effects of patterns on time-to-degree as well as attainment (e.g. Adelman, 1999, 2005, 2006; Carroll, 1989; DesJardins, et al. 2002, 2006; Goldrick-Rab, 2006; McCormick, 2003; Peter & Cataldi, 2005). However, regardless of the direction of transfer, students' demographic, financial, and academic factors have consistently been the most prominent aspects driving their mobility across institutions (Adelman, 2006; Goldrick-Rab, 2006; Kearney et al., 1995; Peter & Cataldi, 2005). It is important to keep in mind that for all students who attend more than one institution, non-transferable units such as remedial, vocational, and courses with low grades can make up a large proportion of credits lost in the process (Bach et al., 2000), delaying time to degree. While beyond the scope of this study, it is also important to distinguish between elapsed time and enrolled time in informing institutional, system-wide, and inter-systemic policy and practice to improve timely college graduation (Adelman, 2006; DesJardins et al., 2002). Although the eminence of demographic, financial, and academic factors in college student enrollment mobility research may be a function of data limited to such measures, student profiles within patterns differ; these distinctions are crucial to acknowledge because they illuminate in part *how* educational gaps accumulate between groups over time. That is, as historically underrepresented students access college in increasing numbers, the inequity in enrollment mobility along socioeconomic lines raises concerns about growing achievement gaps and social mobility (Goldrick-Rab, 2006).

Socioeconomic and Academic Backgrounds Differ Across Mobility Patterns

Enrollment patterns at the extremes of the spectrum are largely predictable, as students tend to be stratified across patterns by socioeconomic class and academic performance (Goldrick-Rab, 2006; Hearn, 1992; McCormick, 2003). In general, students from lower socioeconomic backgrounds and those with lower academic performance engage more in what is called *single-institution stop-out* (Goldrick-Rab, 2006; DesJardins et al., 2002, 2006), *multi-institution stop-out* (Goldrick-Rab, 2006), and *reverse transfer* from a four-year to a two-year institution (Goldrick-Rab & Pfeffer, 2009; see also Adelman, 2005; McCormick & Carroll, 1997; Peter & Cataldi, 2005; Quinley & Quinley, 1999; Townsend, 1999, 2001; Yang, 2006). Respectively, these discontinuous and/or directional enrollment patterns decrease likelihood of degree completion (DesJardins et al., 2002) and increase time-to-degree for those who return (DesJardins et al., 2006).

A closer look at single-institution stop-out, multi-institution stop-out, and reverse transfer provides more detail on the socioeconomic and academic backgrounds of students engaging in these mobility patterns that are detrimental to degree progress. First, not surprisingly, factors related to single-institution stop-out include having a shorter duration of enrollment, lower college GPA, part-time attendance, and living near the institution (Johnson, 2006). Furthermore, lower academic performance in high school and college are also the primary indicators why males stop-out from college more than females (Ewert, 2010). Second, multi-institution stop-out, is more likely to occur amongst students in the lowest income brackets, lowest and middle high school GPA levels, and those whose high school curriculum was moderate in rigor regardless of their GPA (Goldrick-Rab, 2006). Third, low-income students are prevalent amongst reverse transfers (McCormick & Carroll, 1997 in Yang, 2006). But even so, some

interventions may counter these trends. For example, students who stop-out from four-year institutions do so primarily in order to work (Li, 2010). However, changing loans to scholarships, as well as front-loading aid may help prevent stop-out, particularly by increasing the initial spell of enrollment (DesJardins et al., 2002). Financial interventions notwithstanding, the literature clearly indicates that students with lower socioeconomic and academic backgrounds are overrepresented in these mobility patterns that impede degree attainment.

On the other hand, more academically prepared students from comparatively privileged socioeconomic backgrounds tend to enroll in multiple institutions in ways that may buoy their degree progress. They tend to *transfer laterally* between four-year institutions (Goldrick-Rab & Pfeffer, 2009; see also Bahr, 2009; Li, 2010), and enroll more continuously across multiple institutions (Goldrick-Rab, 2006; McCormick, 2003), the latter of which can speed up elapsed time-to-degree. In considering continuous multi-institution enrollment, related factors include being from a middle income household, female, placing in the 2nd lowest quartile for high school achievement, earning a middle-range high school GPA, and indicating aspirations to earn a bachelor's degree or higher (Goldrick-Rab, 2006). Despite their relative affluence and higher academic performance, these average students appear to move away from private, selective colleges towards cost-saving public institutions with more academic options (Kearney et al., 1995). For example, although middle-income students who are rooted in a four-year institution without financial aid also engage in reverse transfer to two-year colleges, it tends to be temporary, which appears to be a strategic money-saving strategy (McCormick & Carroll, 1997 in Yang, 2006). Similarly, financially independent students are also more likely to enroll in multiple institutions (Peter & Cataldi, 2005). Thus, continuous multi-institution enrollment may actually retain middle class students whose backgrounds may still be less privileged than

students able to maintain continuous single-institution enrollment. For these mobile middle class students with average high school academic performance and college degree aspirations, their savvy understanding of navigating between colleges may enable them to strategically utilize multiple institutions on their way towards a degree, and their manageable socioeconomic status and satisfactory high school preparation may allow them to do so without having to stop-out. Even in a study that examined multiple spells of enrollment and stop-out at a single university in the Midwest, amongst students who stop-out, even those with longer durations of enrollment often shared these comparatively advantaged socioeconomic and academic characteristics (Johnson, 2006). As Goldrick-Rab (2006) notes, research attests to the inequity along socioeconomic lines in students' continuity and discontinuity of enrollment at single or multiple institutions of higher education.

Pursuing Academic Opportunities a Primary Reason for Enrollment Mobility

Once students enroll in college, pursuing perceived academic opportunities is the other major component related to why students attend multiple institutions, and also seems to be stratified across mobility patterns regarding socioeconomic and academic backgrounds. In a national study that asked students to choose amongst reasons for taking classes at multiple institutions, the primary items selected were quality of academic programs and variety of courses, again regardless of enrollment pattern (Kearney et al., 1995). Interestingly, liberal arts majors comprised 64 percent of the mobile students in that study and 76 percent had sophomore or junior standing. This suggests that student retention, attrition, and mobility after the first and second years may have to do with student transitions into the major, especially in non-technical fields.

Identifying a specific academic program at a receiving institution appears to be a major factor in enrollment mobility pathways that support degree progress. Selecting a course of study helps prevent additional enrollment across four-year institutions for students preparing to transfer vertically from a two- to a four-year institution (Peter & Cataldi, 2005), and when coupled with additional supports, can prevent reverse transfer (Deil-Amen & Goldrick-Rab, 2009). However, without an identified academic plan, these students may find themselves in *serial transfer* between multiple institutions en route to a final destination (McCormick, 2003). Similarly, some reverse transfers rooted in a four-year institution who take classes at a two-year, indicate they do so for a specific program, a convenient schedule or location, for financial reasons (Adelman, 2005; Peter & Cataldi, 2005), or to complete a degree (Quinley & Quinley, 1999). They appear to be highly focused on completing academic requirements for their primary institution, and are likely to be what Adelman (2005) calls high achieving *four-year-drop-ins*, although for many their aspirations do not exceed a bachelor's degree (McCormick & Carroll, 1997). Students with clear academic plans might also evidence what McCormick (2003) calls *supplemental enrollment* to enroll at a second institution for a term or two to speed up degree progress, augment an academic program, reduce costs, or perhaps take an easier version of a course at a different institution. Given their relative focus on completing academic requirements, both vertical transfers and four-year-drop-ins might also be likely to engage in *concurrent enrollment* in two or more institutions at the same time to have more variety in courses or to improve scheduling (McCormick, 2003).

In stark contrast to vertical transfers and four-year-drop-ins, *semi-permanent reverse transfer* students may perceive or experience relatively fewer academic opportunities compared to their higher achieving counterparts. They may lack academic and social integration at their

institutions, demonstrate low academic achievement, experience poor interaction with faculty, feel unprepared for a four-year college, and have a low use of student services (Yang, 2006). Thus, semi-permanent reverse transfers are most likely to be those who are swirling between multiple institutions with minimal limited persistence (Kearney et al., 1995) or progress towards a degree (Adelman, 2006; Bach et al., 2000; McCormick, 2003). Similarly, students preparing for vertical transfer that only have general aspirations for a bachelor's degree, rather than an identified academic program, may result in additional multi-institution enrollment once students reach the four-year level (Peter & Cataldi, 2005). Recent research has begun to identify four "risk-minimizing supports" that when none were missing, low-income, first-generation, academically underprepared African American and Latino college students in the Chicago area who began in a four-year institution persisted, whereas those for whom at least one support was missing, found themselves in reverse transfer (Deil-Amen & Goldrick-Rab, 2009). The risk-minimizing supports were "(a) guidance in the construction of college plans, and (b) development of a motivating goal, … (c) academic and/or financial support, and (d) the presence of advocates to promote and strategize bachelor's degree completion" (p. 13). Semi-permanent reverse transfers and students preparing for vertical transfer without an identified degree program might find themselves in *rebounding enrollment* between two or more institutions (McCormick, 2003) and swirling without direction unless institutions implement recently identified supports.

Overall, the literature suggests that students' socioeconomic and academic backgrounds stratify their pursuit of perceived academic options at different institutions through mobility patterns with differential benefit for degree progress, with the most affluent and academically prepared students exhibiting no enrollment mobility at all. But the enrollment mobility patterns and subsequent effects on time-to-degree for the majority of American college students pose a

challenge to institutional retention and graduation rates, despite that students may exhibit "system persistence" (Hagedorn, 2005, p. 91) in higher education over the course of several years. For example, 90 percent of first-year students across the nation enroll at some point somewhere in higher education during the following academic year, whether or not at their original institution (Adelman, 2006). So while the savvy accumulation of credits at multiple institutions may benefit relatively privileged students, other enrollment patterns are likely to delay degree attainment for comparatively disadvantaged college students (e.g. first-generation, low-income, underrepresented minority). With few exceptions such as Deil-Amin and Goldrick-Rab's (2009) study, the extant research on college student enrollment mobility is generally limited to students' academic and personal background characteristics, single-item survey data, and to students who begin in four-year institutions. Scant qualitative and mixed-methods studies have been done recently on the topic (e.g. Deil-Amen, R. & Goldrick-Rab, 2009), methods which may help contextualize students' educational pathways and identify further areas for intervention. Additionally, cohesive quantitative factors measuring reasons for mobility have yet to be identified. In light of these two gaps in research, the development of more robust quantitative measures corroborated by student focus group data will advance understanding of how students' reasons for mobility may differ across patterns. Furthermore, our focus on diverse students in broad access institutions puts the spotlight on this student population critical for national success. In turn, this study can better inform how colleges, universities, and policymakers may respond to the national imperative to increase timely degree completion, particularly within regional systems, by devising approaches tailored to different types of enrollment mobility.

Conceptual Framework: Continuity in Multi-Institution Enrollment

In studying college student matriculation across multiple institutions, Goldrick-Rab (2006) offers a simple yet comprehensive framework for conceptualizing continuity in multi-institution enrollment. The framework allows educators and policymakers to locate directional enrollment mobility across two- and four-year institutions within each of the patterns, which can thus address national imperatives that focus on degree completion at both two- and four-year institutions. Figure 1 uses our terminology to show Goldrick-Rab's (2006) quadrant-based typology of enrollment mobility patterns that takes into consideration the number of institutions attended and the continuity of enrollment. Accordingly, we use the term *continuous single-institution enrollment* in place of Goldrick-Rab's (2006) term *traditional enrollment*; *single-institution stop-out* rather than *interrupted enrollment*; *continuous multi-institution enrollment* in place of *fluid movement*; and *multi-institution stop-out* for *interrupted movement*. The rationale is that while the patterns are the same, Goldrick-Rab's (2006) terms are opaque to students and institutions, and in presenting findings we found that audiences could not readily distinguish between interrupted enrollment and movement. Instead, we clarify the patterns using more common terms and also provide data from the current study to show elements of our sample.

Figure 1. College Student Enrollment Mobility and Continuity at Single and Multiple Institutions

Continuity of Enrollment	**Number of Institutions Attended**	
	ONE	TWO OR MORE
CONTINUOUS	*Continuous Single-Institution Enrollment* *n* = 2585 (51.6%)	*Continuous Multi-Institution Enrollment* *n* = 991 (19.8%)
DISCONTINUOUS	*Single-Institution Stop-Out* *n* = 388 (7.7%)	*Multi-Institution Stop-Out* *n* = 1040 (20.8%)

Note: Adapted from Goldrick-Rab (2006), using terms and data displayed from the current study.

Figure 1 includes numbers and percentages of students in the current study who exhibit each enrollment pattern. The proportion of students engaging in continuous single-institution enrollment in this sample mirrors those in Goldrick-Rab's (2006) study, but differs for all other patterns, which is likely an artifact of our sample and how mobility patterns were determined, discussed momentarily. Goldrick-Rab (2006) used post-secondary transcript data from the National Education Longitudinal Study (NELS) of 4,628 students who were in eighth grade in 1998 and had attended college by 2000; the data were weighted to nationally reflect high school seniors who enroll in four-year institutions upon graduation and only included students who began at four-year institutions. Summer enrollment was not counted as multi-institution attendance, and stop-out was only counted if its duration was one academic year or longer. In contrast, data for the present study include students of various ages from both community colleges (39.7%, n = 1,985) and four-year institutions (60.3%, n = 3,019), as well as students who entered their current institution as transfers (28.1%, n = 1,405) and re-entries (15.8%, n = 790), precisely because we aimed to study a broad scope of students attending in less traditional ways. Additionally, we included any form of self-reported multi-institution enrollment and any form of self-reported withdrawal from an institution because any duration of either behavior may impact degree progress. In this more diverse sample that begins to reflect the heterogeneity of the American college population, about five percent more exhibit single-institution stop-out. Perhaps more alarming is that about 17 percent less of this sample exhibits continuous multi-institution enrollment compared to Goldrick-Rab's (2006) sample, and approximately 11 percent more are engaged in multi-institution stop-out. Even amongst those in the current study who indicate continuous single-institution enrollment, 61.1 percent (n = 1580) said they have considered some form of mobility, with many considering multiple forms: 50.4 percent (n

=1304) say they have considered taking a course elsewhere, 39.4 percent (*n* =1019) have considered transferring to another institution, and 21.0 percent (*n* = 542) have considered leaving permanently. In time, some of these continuously enrolled students at a single institution may also become mobile.

Differences in pattern proportions between this study and the Goldrick-Rab (2006) study is her use of a single cohort that began in four-year institutions. In reality, we know that mobility may be greater for students at specific time points and our sample provides a picture of the overall mobility across 14 institutions, including three community colleges. The dated information of her study make it impossible to compare with our cross-sectional study, but when viewed cross-sectionally about a decade later, it appears that stop-out may be more prevalent amongst a broader spectrum of college students, extending their time-to-degree. And although students with continuous single-institution enrollment may be relatively secure in maintaining enrollment over time, for some that might be changing. These new insights likely reflect the current sample, and support the notion that a higher proportion of students at broad access institutions stop-out from single or multiple institutions, translating to lower institutional retention and graduation rates in federal reporting. This overall picture suggests much more mobility is occurring at an institution at any time that influences individuals. Oseguera and Rhee (2009) demonstrate that a peer retention climate (intention to transfer among many peers) influences individual students' decisions within any single cohort in terms of remaining at the same institution. Students in our study spoke about these peer norms for student mobility at specific campuses. Therefore, while there are benefits to following a single cohort to determine mobility rates, it is also helpful to look at the institution as a whole when trying to understand student behavior and interventions.

Methodology

This mixed methods study examines factors measuring reasons for college student enrollment mobility, with the objective of developing measures that can assist campuses in moving the needle on retention for degree attainment for diverse students. In the larger mixed methods project from which this study derives, we intentionally identified compositionally diverse, broad-access institutions where mobility is typically higher as well as those concerned with the same issues but somewhat less diverse (Hurtado & Guillermo-Wann, 2013). Multiple forms of inquiry allow researchers to explain relationships between variables and further describe aspects of relationships qualitatively, and allow for triangulation across different forms of data (Creswell, 2003). The research thus follows a multiphase design, which involves concurrent and sequential steps in a process that incorporates collaboration with campuses. Among the key features of multiphase designs are that the approach is more complex than basic mixed methods designs, typically occurs over time, involves a team of researchers, often requires multi-year funding, and "involve[s] collecting multiple quantitative and qualitative databases that build toward an overall objective" (Creswell & Plano Clark, 2011, p. 196). An overall objective of the project was to help institutions improve their retention rates by providing better, more useful information about their students (Hurtado & Guillermo-Wann, 2013). A total of fourteen institutions participated in the study. Thirteen sites administered the survey, and seven sites were visited for case study. Final reports were provided to all campuses involved in the multiphase design, though this particular study focuses only on the information regarding student mobility.

The sequential part of the study involved the design of an initial instrument based on the literature and subsequently testing the instrument using student focus groups on three of the broad access campuses, including one of the large community colleges. Economic questions

were also added to reflect the contemporary context and survey items were revised to reflect student feedback. Subsequent visits to seven of the campuses involved student and practitioner focus groups, paralleling questions regarding retention and mobility to understand students' normative behavior on these campuses and the meaning attached to different reasons given for attending multiple campuses. Once the survey was ready to launch, another set of seven institutions were invited to be part of the project based on their keen interests in furthering diversity and student success on their campuses. This approach for study was chosen because the depth and specificity in each form of data vary around the topic of mobility, and the quantitative data provides explicit measures, whereas the qualitative data provides contextual data for students' lived experiences.

The quantitative methods will be presented first, followed by the qualitative process for clarity; however, the analyses were conducted simultaneously in a convergent phase of the project, informing one another at each step and is thus reflected in the findings. The analytical phase was convergent because extensive analyses of the quantitative data were not possible before we were scheduled to visit sites. The convergent analysis was aided by data displays of qualitative themes that emerged and were also analyzed in relation to patterns of reasons that emerged from the quantitative data. In determining mixed methods studies, Creswell & Plano Clark (2011) suggest that not only intentional data collection strategies reflect mixing, but that the analysis and results sections are important sections for "mixing" to achieve greater understanding. The site visits conducted in 2009 and 2010 provided more information about the diverse contexts that students experience in the current era influenced by a completion agenda and also economic difficulties in many states.

Quantitative Methods

Data source and sample. The student survey was administered between December 2009 and May 2010 at three community colleges, six public four-year institutions, and five private four-year institutions across the United States. Community colleges targeted students who had earned twenty-four units or more, and four-year institutions focused on students in their second and third years, including transfer students; first and fourth-or-more year students were also surveyed at some institutions. The target sample aimed to identify students who would be most familiar with the campus climate for diversity (due to the overall focus of the project) and who were potentially at critical transitions in their education.

Important for this study, the sample reflects a diverse group of students. The final sample size was 5,004 and was comprised of 9.4 percent freshmen (n = 469), 31.8 percent sophomores (n = 1,589), 28.4 percent juniors (n = 1,423), 20.8 percent seniors (n = 1,040), and 9.7 percent other or unreported standings (n = 483). Regarding age, 33.4 percent (n =1,673) were 25 and older. A majority of the sample earned a high school GPA of 3.25 or higher (57.2%, n = 2,862), with just under a fifth having earned a high school GPA below 2.75 (18.3%, n = 899). Students clustered around higher and lower income ranges with 43.9 percent (n = 2,168) having an estimated annual family income under $40,000, and only 42.6 percent (n = 2130) had a parent with a college degree. The racial and ethnic composition of the final sample was 0.7 percent Arab American/Arab (n = 36), 14.6 percent Asian American/Pacific Islander/Asian (n = 732), 4.3 percent black (n = 217), 19.2 percent Latina/o (n = 959), 0.7 percent Native American/American Indian/Alaska Native (n = 35), 41.1 percent white/Caucasian (n = 2055), and 18.2 percent students who indicated two or more racial backgrounds (n = 910). As intended, the sample includes diverse students in many regards.

Survey items measuring reasons for mobility were specified *a priori* during the instrument development, with all reasons having origins in the literature, previous national surveys (Higher Education Research Institute, 1989), and an NCES report on enrollment patterns (Peter & Cataldi, 2005). Importantly, the items measuring reasons for stop-out appeared only to participants who indicated through specific survey questions that they had stopped-out or considered doing so. Likewise, the items measuring reasons for multi-institution enrollment were only posed to students who indicated they had taken at least one course elsewhere or considered doing so. Therefore, the study includes non-mobile students; this was intentional so that we could also capture students considering mobility behaviors.

Measuring multi-institution enrollment. The four enrollment patterns examined in this study - continuous single-institution enrollment, single-institution stop-out, continuous multi-institution enrollment, and multi-institution stop-out (based upon Goldrick-Rab, 2006) - were constructed as mutually exclusive composite variables from several items on the survey. The stem question for each item comprising the measures was, "Since entering this institution, have you done the following? (Mark yes or no for each item)." The composite variables were each constructed in three steps, and shared the first two steps. First, students who had any type of multi-institution enrollment were identified if they marked "yes" to at least one of these items: "Taken a course from another institution while taking classes here," "Taken a summer course at another institution," "Taken an online course from another institution," or "Taken a course from another institution while not taking classes here". Conversely, students who responded "no" to all of these items were identified as having single-institution enrollment. Second, participants who marked "no" to both types of stop-out ("Taken a leave of absence from this college temporarily" and "Taken a course from another institution while not taking classes here") were

identified as having continuous enrollment, and those who marked "yes" to either form of stop-out were marked as having stopped-out. The four enrollment patterns were then created from those steps. Of the students with single-institution enrollment, those who also indicated continuous enrollment were identified as exhibiting continuous single-institution enrollment, and those that indicated they stopped-out at any point were marked as having single-institution stop-out. Of the students who indicated any type of multi-institution enrollment, those who marked "no" to all forms of stop-out were identified as having continuous multi-institution enrollment, and those who marked "yes" to any type of stop-out were identified as having multi-institution stop-out.

Measuring mobility reasons, student characteristics across patterns, and differences in their importance between patterns. Crosstabs of student demographic and academic characteristics were conducted to examine differences across each of the enrollment mobility patterns. Then, factor analysis was conducted in three stages to identify mobility reasons that make a cohesive construct. First, Pearson correlations were conducted in SPSS for items measuring students' self-reported reasons for why they took classes at additional institutions or left their institution to identify potential relationships amongst variables that may reflect a factor structure. Second, exploratory factor analysis (EFA) of these same items was run in SPSS using principal axis factoring with varimax rotation. Because factors regarding reasons for mobility had not been established in previous studies, the EFA allowed for comparison with concepts in the retention and college pathways literature. Once plausible factors were identified, confirmatory factor analysis (CFA) then tested the measurement model to see if the hypothesized latent factor models fit the data; robust maximum likelihood (ML) estimation corrected for non-normal distributions when non-normality was present (Yuan & Bentler, 2007). Model fit

indices' cutoffs were .95 or above for the comparative fit index (CFI), a root mean square of error approximation (RMSEA) of .06 or below, and a normed fit index (NFI) of .95 or above (Bentler & Bonnett, 1980; Hu & Bentler, 1999). Modifications were made to each model per statistical recommendations with theoretical justification.

Once factors were confirmed, further analyses examined differences in reasons for multi-institution enrollment and stop-out across enrollment patterns. Standardized factors were computed in SPSS, and five one-way ANOVA's tested for mean differences in each factor across enrollment pattern groups. The Games-Howell post-hoc test indicated the pathway groups that differed significantly from each other regarding the importance of reasons for mobility, taking into account unequal sample size and unequal variance (Games & Howell, 1976; Toothaker, 1993). Participants who had not actually stopped out or enrolled elsewhere were included in the analyses of mean differences given that 61.1 percent of non-mobile students in this study were considering at least one form of mobility at the time of the assessment.

Qualitative Methods

The qualitative data analyzed for this study was gathered from students at seven broad-access higher education institutions across various regions of the United States, six of which participated in the survey. These particular institutions were chosen for having low retention rates and racially diverse student populations. With the recruitment efforts of staff at each respective campus, 151 undergraduate students participated in a total of twenty-five focus groups organized by racial/ethnic groups[1], with the purpose of understanding racial/ethnic differences in their student experience (if any), given that a major component of the larger project focused on

[1] Due to unforeseen circumstances, a few of the participating institutions had difficulty scheduling student focus groups based on racial/ethnic membership, and therefore created focus groups of students with varied racial/ethnic identification. A total of three focus groups were therefore labeled as "multicultural" for record-keeping purposes.

the campus climate for diversity. The student focus groups ran for approximately an hour and a half and were conducted by one or two members of the research team, all either doctoral students, post-doctoral scholars, or the principal investigator. Audio recordings retrieved from all focus groups were then transcribed. The analysis of the qualitative data was a two-part process. First, inductive coding began to identify possible themes in students' reasons for multi-institution enrollment and stop-out. These themes were reviewed in light of the quantitative analysis and extant literature. Then deductive coding was used to reclassify some of the data in a way that best matched the factors identified in the quantitative analysis, where a total of five thematic patterns were found to parallel the quantitative findings. The transcripts were then inductively coded to identify additional thematic patterns around student enrollment mobility, including students' reasons for engaging in any particular type of mobility (Strauss & Corbin, 1990); one theme emerged from the data in the final phase of analysis that had not been captured by the quantitative data.

Limitations

For a study on college student enrollment mobility, there are several limitations to the data, its collection, and methods. First, it is important to note that the quantitative measures used to identify types of mobility are based on student's self-reports of particular behaviors. Ideally, transcript data would be used to specify their patterns, and would then be linked with survey data measuring their college experiences; though all campuses can subsequently use these transcript measures, it is a limitation of the study that we were unable to incorporate transcript data. Second, the survey was administered only online, a factor that is less ideal than having a captive audience to take a paper version of the survey. This may have resulted in not reaching student populations with less access to internet outside the college campus, including some low-income

students, or students whose email addresses were not current. Third, the administration was also limited to community college students who had earned 24 units or more; considering this, enrollment mobility may be higher in the actual population. A fourth limitation is that all data is cross-sectional in nature, and that reasons for mobility are retrospective. Finally, the qualitative protocol probed students about individual experiences and perceived campus norms around retention and mobility; however, specificity regarding various types of stop-out or multi-institution enrollment was difficult to ascertain at times. Many of the themes emerging from the qualitative data are clearly linked to retention, attrition, and forms of permanent and temporary transfer as theory suggests, and reflect the related factors identified in the quantitative data. In addition, the students participating in this study were all enrolled at the moment of data collection, therefore any data retrieved from the transcripts are from students who have partaken in mobility patterns and remain in higher education as a system, or who are familiar with peers' enrollment behaviors. We recommend that campuses use these three sources of data in the future (transcripts, surveys, and focus groups) to better understand enrollment mobility, student reasons, and campus peer norms.

Findings

This section first discusses the presence of a normative culture of enrollment mobility. Next, six reported reasons why students engage in enrollment mobility at the macro-levels of multi-institution enrollment and stop-out are described; five are quantitative factors corroborated with focus group data, and the sixth emerges in the qualitative data. Student background and academic characteristics are then examined in their distributions across mobility patterns, confirming and expanding the evidence for social stratification across enrollment pathways. Last, mean differences in each of the factors begin to show differences in their importance across

the four enrollment patterns examined in this study. Together, the findings illustrate a highly mobile college student population, confirming a variety of reasons why this is so at 14 institutions.

A Normative Culture of Enrollment Mobility

Enrollment mobility is a normal aspect of the college experience for students in this study; this was evident in both the quantitative and qualitative data. The quantitative data shed light on the numbers of students who have stopped-out and/or enrolled in multiple institutions, with 48.3 percent of participants (n = 2419) indicating they had already done so. As mentioned earlier, of the 51.6 percent (n = 2585) of students indicating continuous single-institution enrollment, 61.1 percent (n = 1580) of them say they have considered some form of enrollment mobility. With nearly half the students in the quantitative data exhibiting some form of enrollment mobility, and at least a quarter more considering it, the qualitative data give shape to students' lived experiences of this normative culture at broad access institutions in particular.

Engaging in mobility patterns that do not include traditional, linear enrollment has become an accepted part of college culture by these participants, and seems to help maintain momentum towards degree progress in some cases rather than leaving higher education permanently. Emergent in the qualitative data is a vibrant culture of mobility present in the participating institutions, which also becomes apparent in the discussion of the five factors that follow. Across institutions, students consistently share their own stories and anecdotes of friends who have engaged in multi-institution enrollment and stop-out, and who have subsequently re-enrolled. For example, one student states nonchalantly, "I've actually left UNIV 1 twice. I feel like a lot of people leave UNIV 1. I don't know if it's just UNIV 1 specifically, but I've been to two different schools" (UNIV 1, Latino student). Other students describe enrollment across up

to three different institutions (UNIV 1, white student; UNIV 2, Latino student; UNIV 1 Latino student; CC 1, Asian American student). Every student focus group reports instances of peers stopping-out from institutions or enrolling in multiple institutions, often conveniently taking courses either online or at a nearby institution, or in search of an environment conducive to their learning. It is crucial to note that many are students who are currently enrolled and are making progress towards a degree. The focus group data provide a real sense of how students engage in and accept mobility as a common practice and as normative behavior.

Why Students are Mobile in Their College Enrollment

The quantitative analysis confirms five factors regarding self-reported reasons for enrollment mobility, two for why students engage in multi-institution enrollment, and three for why they stopped-out from their current institution at some point based upon how the stem questions were worded, although analysis shows they are applicable to all mobility patterns. Table 1 displays survey items, factor loadings, reliability, and fit indices from the CFA procedures. The interview data supports these factors, and reveals an additional reason for mobility that was not anticipated a priori.

- Insert Table 1 About Here -

Multi-institution enrollment reason: Cost/convenience. This factor suggests that in taking courses at multiple institutions, students are highly cognizant of trying to complete their degrees quickly and affordably, which is good news to institutions given the current policy push to increase timely degree attainment. In a pervasive economic downturn, it is especially important to note that completing one's degree more quickly is being attempted through lowering costs and obtaining education at convenient locations, which may accommodate other life demands for students juggling additional responsibilities. Single survey items within the

factor shed light on the tension students feel regarding the financial viability of degree completion (see Table 1), and are evident in the qualitative data.

The focus group data support that some students enroll in multiple institutions to take advantage of less expensive tuition. For example, one student reports her friends moving on from her public broad access four-year institution to a different four-year institution for that reason. She says,

> They're mainly coming to this school just…and treating it like community college basically and just coming here for the two years and then transferring out because this was cheaper than most of the other schools we got into. (UNIV 3, African American student)

Reverse transfers from four-year institutions currently enrolled in community colleges also state they changed institutions to "reduce tuition" costs (CC 1, Asian American student).

The qualitative data additionally bear out a relationship between strategy and the factor item "Courses that I need to graduate are easer at another institution;" one student describes the difficulty of math courses at her institution, which led her friends to take those required classes at a different institution where they perceived they were easier to pass for credit:

> Over here is—it's—you have to study this … you have to study math, like most of my friends have studied math. They saw some college it's easy to get a good grade in math, but here everything had to be—you had to … understand. It's not—like, the homework is done exactly the same, but over here, it's [required to understand] everything in order to pass the class, so it's very challenging to pass. It's hard for them. So I don't know what is the other college [sic], they have lenient, something there or here. It's different. So one or two of my friends that know me, they changed to other colleges because they

> say it's easier over there. For the student over here is hard. I took a class; I had to try my best to pass the class. It's not like—I never took the other college, but most of my friends say this is [harder here]. (CC 2, Asian American student)

That students take requirements they perceive to be easier elsewhere indicates an awareness of specific courses required for an identified degree and the transferability of such courses, which allows students to be strategic in their movement to make degree progress.

Multi-institution enrollment reason: Academic opportunities. This factor measures a set of reasons that coalesce around the notion of taking courses elsewhere because they are not offered at the students' current institution, mirroring the literature. It includes accessing a broader curriculum and specific programs, exploring interests, and increasing academic challenge (see Table 1). Regarding academic programs, one student surprisingly shares about their peers' lack of awareness about what was offered at their originating institution:

> I know a handful of freshmen and their friends who actually left, like, the first semester, after the semester, and then people who are already looking to enroll into [another school nearby] next year because … I guess some majors that weren't offered here, I guess that for whatever reason some people didn't find out until after their first semester that it wasn't offered. And they were like, "OK." (UNIV 1, African American student)

It is also feasible that students may have developed interests they could not pursue at that institution and were not aware of limited offerings upon initial enrollment. Additionally, students may enroll in other institutions to take courses to help them understand the material at their initial institution, such as remedial courses that represent a broader curriculum. Another student shares that peers were struggling academically:

> I know some students in the chemistry department starting out, they weren't up to par to start out in college chemistry, they needed a little bit more math background or basic science background, so they would stop going to school here but not stop going to school altogether. (UNIV 1, Native American student)

Multi-institution enrollment in order to access academic opportunities is a prominent theme in the data, with the qualitative data additionally highlighting that it can be for remedial purposes. For example, to better prepare for introductory chemistry, students might seek institutions that offer introductory chemistry, algebra, or pre-calculus in order to improve their performance in introductory courses for a desired major at a primary institution.

Stop-out reason: Life circumstances. This factor measures a cluster of life circumstances that may be cyclical and overlapping in nature as they relate to stopping-out from college. Table 1 shows that the strongest loading items on this factor reflect employment opportunities and family responsibilities, with additional items pertaining to low academic performance, financial difficulty, and being close to home. Although these items may seem to represent separate concepts (i.e. family, finances, employment, academics, location), their highly correlated nature suggests that these seemingly different aspects of life operate in concert. That is, family responsibilities typically involve financial responsibility, which requires employment. Time spent on the job by nature reduces time available for academics, which can easily lead to academic probation and poor performance in general. Juggling family, financial, and academic demands logically leads to the desire for school to be closer to home, as well as becoming tired of being a student. In such scenarios, it becomes understandable why these items mathematically and conceptually can be understood as a factor measuring life circumstances. Amongst these

demands, family responsibilities and financial difficulty that preclude enrollment seem to the most prevalent matters affecting continuity of enrollment, also reflected in the interview data.

The need to take time off school in order to work and save money to pay for tuition and schooling expenses plays an important role in students' stopping-out. Students report that their inability to pay tuition makes it increasingly difficult to continue their studies at their institution, and in order to meet those rising costs, students sacrifice timely degree completion to take time off to save money to pay for tuition in the future. One student stopped-out twice from the same institution because of financial reasons, with one of those periods lasting ten years (UNIV 1, Native American student). Another student shares the following:

> […] Most of the kids are down because they can't handle it. They don't have enough - they don't have money. Even my friend was gone last year; he said he has to work because he doesn't have money. He doesn't qualify for fellowships, so he has to put in some work to be able to survive. (So he didn't come to school last year?) No, no, no. He showed up this year. I saw him yesterday, I was like, "Where did you go?" He was like, "Oh, because I have to get a job and work and save money for this year." (CC 2, African American student)

The qualitative data support that students stop-out due to financial reasons, but shed light on the matter that they do so with the goal of saving money for tuition to re-enroll in the future.

Somewhat similarly, the appeal of a steady financial income also proves to be a reason for stop-out. As one student mentions, "I was one who…when I got out of high school I went to college, but the lure of money called me to…set my college goals aside, and so now I'm back in school" (UNIV 2, African American student). Another student reports having found an exciting employment opportunity while in college and stopping out for a period of eight years as he took

advantage of that lucrative job (UNIV 1, Native American student). Yet another student reports what she sees in her industrial engineering department regarding work opportunities and finances, sharing:

> My major specifically deals with lots of internships and I would say that close to fifty percent of the people who go into my major just don't finish because they can be offered a job opportunity at a much earlier stage than they would graduate and they'll just take that instead of getting their diploma and they'll just go with that because it's like…it's more than an internship, they offer them a full-time position and the student's like, "This is more money than I've ever seen, I'm just going to go that way," but later on sometimes students do come back…. (UNIV 3, white student)

The qualitative data reflect that when a financial opportunity presents itself outside of college, and whether or not the student is faced with financial difficulty, it can be enough to pull students away from institutions – at least temporarily if not permanently.

An additional circumstance students face is the need to be close to home in order to manage family responsibilities, which affect students from various economic backgrounds. For example, one student reflects, "So the barriers are working and supporting the family, paying the mortgage, and still taking classes and finding the time and the resources to do that, but it's totally do-able. I've got enough in my favor that I can completely pull it off" (UNIV 3, white student). Another student reflects on how improved life circumstances have helped her to return to college,

> I mean, I have a house, I'm engaged, it's just like so many life…I took eight years off of school just because I couldn't work and I couldn't handle taking care of my grandparents and school, it was just kind of like I couldn't handle all of that and luckily my fiancé, he

> doesn't have the work and school. He got his Master's and went to work and luckily I don't have to, so I can just focus on school. (UNIV 3, white student)

A few students point to illnesses – either personal or a family member – as a reason for why they have to temporarily leave college (CC 1, Asian American student; UNIV 1, Native American student), and one particular student cites spending a couple of years in and out of hospitals due to her health (UNIV 1, white student). So although students have varying economic situations, the relative strain each feels intersects with family life, with some therefore stopping-out from college.

Finally, students also report cases where their peers attend additional institutions because academic probation policy restricted them from maintaining enrollment at their originating institution. Reflecting the quantitative item, "Was placed on academic probation," one student shares that is why his friend has been stopping out over a ten year period. He says,

> It's because…well, he was on academic probation, so he can only…when you're on academic probation, you can only take a certain amount of classes. I think it's two classes and you have to get a C or better and if you don't, then they'll kick you out of school. So he was on that, and so he could only take two classes at a time and trying to get his major, so it's kind of hard…. (UNIV 3, African American student)

In this case, the rules governing probation become a factor that is intertwined with external factors that result in stop-out and extended time to degree. Overall, the qualitative data on this pull factor phenomenon provides evidence that external factors such as family responsibilities, employment opportunities, and financial difficulty, as well as poor academic performance and related policies, lead to stop-out, mirroring the quantitative data. These "life circumstances" are involuntary in nature.

Stop-out reason: Career considerations. As students indicate reasons why they consider or actually withdraw, transfer, or take a leave of absence from their current college, reconsidering career plans clearly emerged as a factor in the quantitative data. The factor also measures rethinking goals and interests, as well as wanting "practical" experience (Table 1). A re-entry student at a community college evidences this in the qualitative data, saying, "I am re-careering. The economy has put [sic] an impact in my life two years ago." Reflecting on his return to college, he shares, "when I first came here, it wasn't with any focus, it was just to get some more information in a field that I was interested in. I was not looking for a degree." (CC 1, white student). Beneficially, his re-entry in community college propelled him to eventually earn certificates and pursue a degree.

Stop-out reason: Perceived mismatch. Lastly, the quantitative data show students leave their current institution due to dissatisfaction with social and academic life but do not directly capture why they return, while the qualitative data show perceptions of match is why students initially enroll, re-enroll, or are continuously retained at an institution; in this way the two forms of data complement each other to demonstrate a more complete picture of this phenomenon. Table 1 shows that the strongest loading item on the factor has to do with feeling like students didn't "fit in" (.811), followed by "[Wanting] to go to a school with a better academic reputation" (.775). The latter is seen as one student illuminates the interconnectedness between stop-out and multi-institution enrollment, saying that students leave to go to "another school [that] has a better certain program, like an engineering program or an art program, which is the number one reason they leave" (UNIV 3, Asian American student). More examples of the phenomenon of match abound and will be discussed in more detail.

Regarding the social aspect of this factor, the focus group data emphasize students leaving an institution because it did not fulfill their social and extra-curricular expectations. For example, students share that a number of their peers leave one institution and transfer to another because the weather or the local community was not what they expected it to be. One student shares her experience, saying,

> I'm a freshman. I'm actually gonna be leaving in a year, this upcoming year, just because I feel like the way that they advertise [UNIV 1] is really different from my personal experience here. For example, the outdoors-y thing, I'm from Anchorage, Alaska, so I figured coming here - I fell in love with [the town] when I first came here. Living on campus in freshman housing was a completely different experience than what I expected. I was in a living [learning] community, I don't know if you guys are familiar with that, but it was like the eco-house community. It was just - I didn't really - I felt kind of really sheltered, like, this hall with all these people who supposedly had the same views as me, but - I don't know how to explain it. That was one of the major shocks coming here. (UNIV 1, white student)

Feeling disconnected and not fitting in with a homogeneous living environment – and leaving the institution because of this – is a common theme throughout the qualitative data. One student shares his particular story, saying,

> I've actually left [UNIV 1] twice…because it's—I lived on campus for three out of my four years here, and living on campus, you almost feel disconnected from the outside world, especially in the residence halls. I was an RA for a while, and you kind of feel as though you're trapped in a really small group of people…. (UNIV 1, Latino student)

A student at that same campus shares it's why a peer left after he realized it was not the "party" campus he thought it would be, but that other aspects of social dynamics brought him back:

> [T]he reason he left was because it's not a big party school, kind of, so that's why he left, 'cause it's like, he's really a party person, so he kind of missed that, so he went back home, but then he missed it, because it's a small campus and people know each other, so he came back. (UNIV 1, Latino student)

When students' perceptions of what their campus experience would be like are not met seems crucial in deciding to leave, although some students also return for reasons regarding social and academic match.

Students' positive reasons for enrolling in a new institution also reflect a better social and academic life, including transferring to a perceptibly more intimate campus, as seen in a students' decision to return to his original institution "because he missed it, because it's a small campus and people know each other" (UNIV 1, Latino student). Students who report such experiences do so for a preferable educational experience. One student shared,

> I transferred; I used to go to [another school]. I really like the intimacy here, [the other school] is just a huge campus, it's a huge party school because there's nothing to do out there but drink and that's it. Here I'm more focused and I thrive more here than I did in the past…. (UNIV 2, Latino student)

From the standpoint of access and retention, another student comments on a positive climate for diversity saying, "what drew me was mainly my cultural traditional ties with the Navajo people and with my family. That's what brought me to [UNIV 1] and to [this town]" (UNIV 1, Native American student). For these students, it appears that the culturally affirming match is what attracts them and keeps them retained, intimate campuses provide the ideal setting in which to

focus on their education and achieve academic excellence, while others will leave because conformity in small environments is too constraining, as in the case of the student from Alaska.

Emergent Theme: Institutional Support

The qualitative data also point to institutional support, or lack thereof, as a sixth reason for various forms of enrollment mobility. It is a common theme across all institutions, and encompasses various types of support, ranging from disabled student services to counseling and navigational guidance, to faculty understanding. One student shares her experience at a previous institution, saying,

> I went to [another institution], and due to lack of accessibility and any sort of support at that school, I did not continue. I […] came out here to [this state] to study at school here, five years later with more direction and more drive. (UNIV 1, white student)

For this specific student, it appears that after experiencing a lack of support in her initial university, she sought another that would provide the facilities and guidance that would lead her to degree completion, despite having to take time off school and transfer altogether to a different institution. Students also articulate lack of support in terms of poor to little course-taking guidance and that lack of course availability together leading to longer time-to-degree. One student shares:

> [Earning a degree quickly] is difficult because so many required courses are not offered every semester. And also, it isn't always clear what you need to—OK, if you're a certain major, it's not really spelled out, you take this, and then next semester you take this and then next semester you take this. It gets confusing, and you end up wasting time and money, especially money, taking classes that you really didn't need, when you should have taken this instead but didn't know that. (CC 1, African American student)

The reduction of classes during this economic period reflects decreases in state funding for higher education, and little or poor navigational support from staff delays degree progress despite students' desire to proceed in a timely manner. Another student reflected on enrollment policy designed to improve degree attainment but also lack of support for individual students:

> They just implemented this big push to get those students [who have been here five or six years] out of the way so they can actually get more people, because apparently it is through enrollment that the institution gets budget. (UNIV 3, Latino student)

In this case, the enrollment policy makes the student feel like they are just cogs in the budget process that drives enrollment and that the institution is threatening to "kick them out."

On the other hand, another student highlights how supportive professors are in the midst of challenging life circumstances:

> I also work two jobs, too, and that's not—I work two jobs and I have classes and the professors here, they're pretty reasonable about it. If you say, "I had a family thing," they'll let you turn in something one day late. The professors here are really aware of family situations and work situations. (UNIV 1, Native American student)

This theme highlights various forms of institutional support that inform student enrollment mobility, including retention as continuous enrollment. This theme of institutional support suggests that survey items in the future may be further revised to reflect this rationale for mobility that likely impacts enrollment patterns.

Differences in Student Characteristics Between Enrollment Mobility Patterns

Crosstabs support and expand previous research (e.g. Goldrick-Rab, 2006), showing that students with certain background and academic characteristics are represented in some enrollment patterns more than others, with more privileged students concentrated in enrollment

patterns that quicken degree progress, such as continuous single-institution enrollment and continuous multi-institution enrollment (Table 2). For example, students from families with an annual income below $60,000 are more concentrated in single-institution stop-out and multi-institution stop-out than students from higher income families. Parent education levels follow a linear trend, in which greater proportions of students whose parents earned a bachelor's degree or higher exhibit continuous single-institution enrollment compared to those with some college and no college. Over half of the white students in the sample indicate continuous single-institution enrollment, whereas less than half of all Students of Color do so. The story is the same with high school GPA, with greater proportions of higher performing students exhibiting no mobility or continuous multi-institution enrollment, and greater proportions of lower performing students indicating single- or multi-institution stop-out. Once students arrive at college, those who attend an orientation are concentrated in continuous enrollment patterns, and those who do not in the stop-out patterns; students who entered their current institution as first-time freshman or as transfer students are similar in their mobility, but contrast with re-entry students, who are starkly overrepresented in both forms of stop-out. Enrollment status also bears out a similar pattern, showing the advantages of full-time enrollment over part-time enrollment in terms of maintaining either type of continuous enrollment. These trends show that students with more privileged backgrounds are generally concentrated in continuous single- and multi-institution enrollment, and students from comparatively disadvantaged backgrounds tend to be overrepresented in single- and multi-institution stop-out, although many students may have identities and backgrounds that span both ends of the spectrum. As research suggests, institutions are wise to focus retention efforts and consider collaborations with neighboring institutions to improve services and pathways for low-income, first-generation, students of color,

older students, less academically prepared students, and re-entry students, keeping in mind that students may be privileged in some areas and less so in others.

- Insert Table 2 About Here -

Differences in Mean Factor Scores Between Enrollment Mobility Patterns

Results show how the mean scores of each factor differ across continuous single-institution enrollment, single-institution stop-out, continuous multi-institution enrollment, and multi-institution stop-out (Table 3). Students from each of the four enrollment patterns indicate varying levels of importance of each factor in their respective enrollment behaviors. These results affirm and expand the literature that shows how educational gaps develop across groups, in part through the different ways students traverse the higher education system.

Multi-institution enrollment reason: Cost/convenience. Overall, this factor is the most common reason for enrollment mobility of any type, showing that students consider or make use of less expensive institutions en route to degree completion elsewhere. In students' reasons for considering or actually taking courses at an additional institution, 74.0 percent (n = 2627) and 73.7 percent (n = 2618) of the entire sample indicate that it is very important or essential "to complete [their] degree quicker" and that "tuition is less expensive" elsewhere, respectively. Table 3 shows that mean differences in the factor's perceived importance emerge across patterns; importantly, students with both types of multi-institution enrollment appear more vested in quick or cheaper degree completion compared to those who have considered taking courses elsewhere but remain continuously enrolled at a single institution. Consistent with the literature, results confirm that cost, convenience, and fulfilling specific degree requirements may be more important to students strategically attending multiple institutions, and highlight that keeping elapsed time to a minimum is an additional consideration.

- Insert Table 3 About Here -

Multi-institution enrollment reason: Academic opportunities. Students with either form of stop-out indicate that Academic Opportunities are more important in their multi-institution enrollment, or consideration of it, compared to students with either form of continuous enrollment (Table 3). It may be that students who exhibit both forms of stop-out are still exploring academic and career options as the literature suggests. In contrast, students engaged in both forms of multi-institution enrollment may be more committed to majors offered at their originating institution, rather than looking for different academic opportunities, and may be considering or strategically taking specific general education or major requirements that transfer back to their home institution.

Stop-out reason: Life circumstances. As expected, challenging Life Circumstances are less important for students with continuous single-institution enrollment (who are considering leaving their institution) than students with all other mobility patterns, and are less important for those with continuous multi-institution enrollment compared to multi-institution stop-out (Table 3). Not surprisingly, demanding Life Circumstances seem to hit hardest those who stop-out at any point in their college trajectory, and are likely a major contributing factor to discontinuous enrollment regardless of the number of institutions attended.

Stop-out reason: Career considerations. The post-hoc results indicate that this factor matters at the extremes; that is, it is a less important mobility reason for students with continuous single-institution enrollment that are considering leaving than for students who already exhibit multi-institution stop-out (Table 3). Even so, it is noteworthy that 51.0 percent (n = 1387) of respondents say that "Want[ing] to reconsider my goals and interests" is a "Very important" or "Essential" reason for stopping-out or considering it. These results stress that students who have

already engaged in multi-institution stop-out may warrant additional attention for academic planning to achieve new career goals, and that half of all students seem uncertain of their goals and interests.

Stop-out reason: Perceived mismatch. Finally, students exhibiting single-institution stop-out seem to have less concern with issues of Perceived Mismatch compared with all other patterns (Table 3). Affirming the qualitative data, the fact that students return to their original institutions without taking courses elsewhere is a sign that originating institutions provide the social and academic opportunity they desire. Results also suggest that students who stay continuously enrolled at one institution do not consider leaving primarily for Perceived Mismatch, which is good news for institutions seeking to at least maintain retention rates.

Implications and Conclusion

Previous research is primarily focused on student characteristics and academic markers in relation to mobility patterns and degree completion (e.g. Adelman, 2006; Goldrick-Rab, 2006), and could only speculate about additional reasons for student mobility (with the exception of Deil-Amen & Goldrick-Rab, 2009) using single item measures that were available on national surveys (e.g. Peter & Cataldi, 2005). Through the mixing of quantitative and qualitative data, this study provides evidence that students and institutions have developed a normative culture of enrollment mobility, documents students' self-reported reasons for this mobility, and begins to show how the reasons vary in importance across mobility patterns. This study identifies key constructs that, when matched with specific enrollment pathways, begin to indicate potential solutions and a deeper understanding of the student norms. Finally, this information further shifts the focus from the student to the institution in several important ways in order to improve student success and increase degree attainment. One student summed it best in depicting

mobility at a particular institution, saying: “What I find is, it is common for people to take time off and end up coming back. Actually, I have a couple of times” (CC 1, African American student). This is the new norm in higher education, which extends time to degree, interrupts the coherence of a general education and major course of study, and raises questions about students’ initial commitments in many cases. Some participating institutions were also responsible for increasing student mobility by cutting needed classes due to economic constraints (Johnson-Ahorlu, Alvarez, & Hurtado, 2013), academic probation policies, and new enrollment policies designed for greater efficiency. In order to gain a better handle on student enrollment mobility, it is necessary to identify the patterns and reasons for movement to devise appropriate solutions. Institutional researchers can help provide this information through analyses of student transcripts, use of the National Clearinghouse data to track students to other institutions, use of a student survey designed for highly mobile student populations we have devised here, and student focus groups in order to get a better handle on reasons and solutions for stop-out and multi-institution attendance.

Several years ago, Borden (2004) raised questions to educators, saying, “In short, policies, practices, and programs that accommodate swirl do so through four primary mechanisms: student tracking research to monitor swirl, assimilation programs to engage students rapidly in campus academic and social culture, collaboration efforts to establish cross-institutional standards, and outcome expectations, and competency-based assessments to determine student placement and attainment” (p. 17). The findings from this study indicate that these are still important strategies for administrators, but it is also important to develop better advising systems—including those that do not simply deal with course audits but take a “case approach” to provide institutional support regarding difficult life circumstances that some

students face. During visits to campuses we noted several campuses were in the process of revising or rethinking their advising system, and one campus was moving towards adapting a successful model across campus that had been developed with a set of discipline-based units on the campus. Advisors are the first to people spot and deal with transfer mobility issues, and they must be trained to spot larger patterns that indicate a policy or new practice may be necessary. Instead of waiting for students to arrive with a problem, institutions are also considering more intrusive advising and assistance. At least one campus in this study developed an emergency inter-unit team to prevent students from leaving due to economic hardship, as more students (and families) were impacted by the economic downturn. Some campuses are also developing collaborations with local institutions that "share enrollments" to monitor students, share resources, and channel students toward degree completion. This suggests a shift in focus from individual institutional attainments toward improving regional degree attainments that build on the cost and convenience reasons for student mobility. These are all forms of institutional support that can keep students enrolled or returning for enrollment and degree completion.

The data in this study on mobile students (and students with the potential for high mobility) supports re-enrollment as an acceptable pathway, as several had taken 8 or 10 years off and returned for their degree and/or returned to the higher education system with more focused goals. More recently, policy organizations have attempted to get institutions and states interested in re-enrolling students who are near degree completion and to focus on adult re-entry students to help reach the goal of improving degree attainments nationally (Boeke, Zis, & Ewell, 2011; WICHE, 2010). This approach is student-oriented, and some would call it a high touch "concierge" model of practice (WICHE, 2010). This signals a contemporary shift in institutional

practice and policy focus on re-enrollment that may show of promise of new institutional practices to create a culture of degree completion on campuses with high student mobility.

Table 1

College Students' Reasons for Enrollment Mobility: Confirmatory Factor Analysis Items, Loadings, Reliability, and Fit Indices

Factor/Variable	Reliability / Loading	NFI	CFI	RMSEA
Multi-Institution Enrollment Reason: Cost/Convenience	α = .808	.990	.991	.040
Tuition is less expensive	.719			
The location is more convenient	.710			
To have a more convenient class schedule	.639			
To lower my living expenses	.590			
To complete my degree quicker	.569			
Courses that I need to graduate are easier at another institution	.522			
To fulfill course requirements	.391			
Multi-Institution Enrollment Reason: Academic Opportunities	α = .837	.996*	.994*	.045*
To have a wider selection of courses	.856			
Programs I am interested in are not offered here	.667			
To take extra classes to explore my interests	.657			
To earn a degree or certificate that is not offered here	.642			
To challenge myself academically	.618			
Stop-Out Reason: Life Circumstances	α = .815	.993*	.994*	.036*
Had a good job offer	.760			
Had family responsibilities	.706			
Wanted to be closer to home	.636			
Was placed on academic probation	.609			
Had money problems and could no longer afford to attend college	.590			
Was tired of being a student	.515			
Stop-Out Reason: Career Considerations	α = .807	1.000	NA	NA
Changed my career plans	.875			
Wanted to reconsider my goals and interests	.827			
Wanted practical experience	.598			
Stop-Out Reason: Perceived Mismatch	α =. 816	.998*	.998*	.048*
Felt like I didn't 'fit in' at my previous	.811			

college	
Wanted to go to a school with a better academic reputation	.778
Wanted a better social life	.716
Was bored with my coursework	.692

*Robust ML fit indices used because Mardia's coefficient > 3.0

Note: Item stem for Multi-Institution Enrollment questions read: "In deciding to take courses at another institution, how important to you are each of the following reasons?" Item stem for Stop-Out questions was, "How important are each of the reasons listed below in your decision to take a leave of absence, withdraw, or transfer from this institution? (Mark one for each answer)." Original response scale for all items was 1 = Not important, 2 = Somewhat important, 3 = Very important, 4 = Essential.

Table 2

Demographic Characteristics of Mobile and Non-Mobile College Students, by Enrollment Pattern

Student Characteristic	Continuous Single-Institution Enrollment		Single-Institution Stop-Out		Continuous Multi-Institution Enrollment		Multi-Institution Stop-Out		Chi-Square
	%	*n*	%	*n*	%	*n*	%	*n*	
Race: Student of Color	48.5	1400	7.9	229	21.8	631	21.8	629	30.8***
White	55.9	1149	7.6	157	16.9	347	19.6	402	
Income: < $30,000	51.0	893	9.8	172	17.4	305	21.7	380	51.3***
$30-60,000	50.8	605	9.3	111	18.2	216	21.7	258	
> $60,000	53.0	1060	5.1	103	22.8	456	19.1	382	
Parent Ed: No College	48.4	569	9.4	110	21.1	248	21.1	249	14.3*
Some College	50.3	607	8.4	101	20.3	245	21.0	253	
BA or Higher	53.1	1132	6.3	135	19.9	423	20.7	440	
Age: > 24	47.5	795	13.2	221	15.3	256	24.0	401	210.4***
21-24	47.8	693	7.9	115	21.4	311	22.8	331	
< 21	58.5	1088	2.6	49	22.6	421	16.2	302	
High School GPA: 0-2.74	47.8	430	11.1	100	17.6	158	23.5	211	27.0***
2.75 and Above	52.4	2109	6.9	276	20.4	821	20.3	816	
Institution Type: 2-Yr	47.8	949	13.8	273	14.4	285	24.1	478	275.4***
4-Yr College	57.7	1076	4.5	84	22.8	426	15.0	279	
4-Yr University	48.5	560	2.7	31	24.3	280	24.5	283	
Orientation: Yes	52.6	1933	6.2	229	21.3	785	19.9	730	66.3***
No	49.1	652	12.0	159	15.5	206	23.4	310	
Entered: 1st Time Freshm.	53.4	1501	6.8	192	20.8	585	18.9	531	143.2***
Transfer Student	54.8	770	5.8	81	20.6	290	18.8	264	
Re-entry Study	39.7	314	14.6	115	14.7	116	31.0	245	
Enrolled: Part-time	42.8	480	15.4	173	15.0	168	26.8	301	251.9***
Full-time	54.7	2091	5.1	197	21.4	820	18.8	718	
Class Standing: Fr/Soph	57.4	1182	7.9	163	18.2	374	16.5	339	53.7***
Junior and Above	48.3	1278	6.7	178	21.9	579	23.1	611	

* p < .05, ** p < .01, *** p < .001

Table 3

Games-Howell Post-Hoc Tests for Standardized Mean Differences in College Students' Reasons for Mobility, by Enrollment Pattern

1st Group Mean		2nd Group Mean		Mean Difference (1st-2nd)
Multi-Institution Enrollment Reason: Cost/Convenience ^				
Continuous Single-Institution Enrollment	- 0.106	Continuous Multi-Institution Enrollment	0.027	- 0.133**
		Multi-Institution Stop-Out	0.114	- 0.220***
Multi-Institution Enrollment Reason: Academic Opportunities				
Continuous Single-Institution Enrollment	- 0.026	Single-Institution Stop-Out	0.195	- 0.221***
		Multi-Institution Stop-Out	0.081	- 0.107*
Continuous Multi-Institution Enrollment	- 0.104	Single-Institution Stop-Out	0.195	- 0.299***
		Multi-Institution Stop-Out	0.081	- 0.185***
Stop-Out Reason: Life Circumstances				
Continuous Single-Institution Enrollment	- 0.169	Single-Institution Stop-Out	0.092	- 0.262***
		Continuous Multi-Institution Enrollment	- 0.006	- 0.163*
		Multi-Institution Stop-Out	0.180	- 0.349***
Continuous Multi-Institution Enrollment	- 0.006	Multi-Institution Stop-Out	0.180	- 0.186**
Stop-Out Reason: Career Considerations				
Continuous Single-Institution Enrollment	- 0.073	Multi-Institution Stop-Out	0.100	- 0.173***
Stop-Out Reason: Perceived Mismatch ^ ^				
Single-Institution Stop-Out	- 0.296	Continuous Single-Institution Enrollment	- 0.011	- 0.285***
		Continuous Multi-Institution Enrollment	0.111	- 0.408***
		Multi-Institution Stop-Out	0.082	- 0.378***

* p< .05, ** p < .01, *** p < .001

^Single-Institution Stop-Out mean score is -.145 units less than Multi-Institution Stop-Out (p = .065).

^ ^Continuous Multi-Institution Enrollment mean score is .123 units more than Continuous Single-Institution Enrollment (p = .068).

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