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Migration Patterns among CSULB First-Time Freshmen

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Research Questions

1. Can we identify patterns of migration (i.e. major switching between colleges)?
   1a) When do students migrate?
   1b) Where do students migrate to?
2. When and where do undeclared students eventually declare their majors?
3. What student characteristics predict migration? Are some students more likely to migrate?
4. How does the timing of migration, controlling for other factors, affect the probability graduating within 4 years?

Introduction

Importance of the issue to the university:
- **44%** (1,923) of Fall 2013 first-time freshmen migrated (i.e. switched majors and colleges) from the one they enrolled in at entry. Understanding migration patterns and ensuring that we have seamless pathways for students to migrate to their "forever majors" is critical in efforts to promote retention and timely graduation.
- Looking at department migration, **55%** (2,402) of Fall 2013 first-time freshmen migrated to a different department from the one they enrolled in at entry.

Importance of the issue to CLA:
- CLA is primarily an inflow college - more students switch majors into the college than those that migrate out.
- **38**% (725) of all migrating first-time freshmen migrated into CLA.
- A substantial number of students migrate to CLA. To ensure that the college is adequately prepared to receive and support those students, it is essential to identify and understand migration patterns.

Methods

- **Data Sources:**
  - Data Fellows' Student Success Dashboard Version 2.0
  - Institutional Research & Analytics
  - UCLA HERI – CIRP survey data from *The Freshman Survey*
- **Population:** All Fall 2013 First-Time Freshmen (*N* = 4,343)
- **New variables** were created in order to capture semester-by-semester migration and attrition patterns.
- **Descriptive charts and pivot tables** created to summarize and describe migration patterns. Additional information on migration patterns available through the above QR code.
- **Probabilistic Modeling of Migration, Major Declaration, and 4-Year Graduation**
  - Maximum Likelihood estimation of Binary Logit models
  - Delta Method standard errors calculated for marginal effects
  - Signs of statistically-significant marginal effects reported in *Table 1*. Magnitudes available through above QR code.

Results

When do students migrate and where do they go?

- Migration varied by college, although CNSM had the highest rate of migration (54%), and CLA the lowest rate (15%) (See Figure 1).
- Attrition rates were comparable across colleges and varied from 17% to 24% (See Figure 1).
- The largest inflow of students into CLA occurred in the 5th Semester, but a sizeable inflow also preceded this in the 4th Semester and continued through the 6th and 7th Semesters (See Figure 2).
- Most migration into CLA came from Undeclared students (52%), followed by CHHS (22%), and CNSM (8%) (See Figure 2).

Figure 1. **Fall 2013 Freshmen Migration Patterns by College**

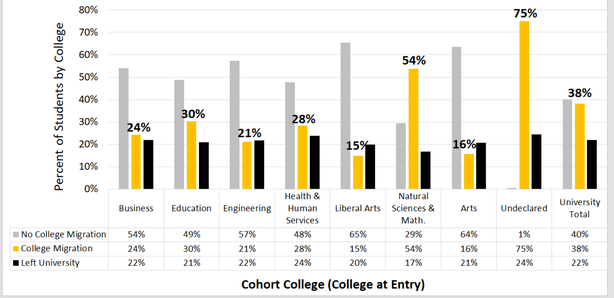
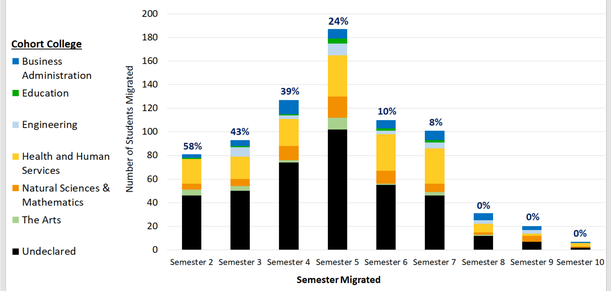


Figure 2. **Fall 2013 Freshmen Migration Into CLA By Cohort College & Semester Migrated**
(Percent indicates total students who graduated within 4 years based on semester they migrated)



How does migration impact four-year graduation?

- The likelihood of graduating within four years decreased the longer students take to migrate to CLA (Figure 2).
- Only 24% of students migrating in the 5th semester graduated in four years, and the likelihood of graduating declined even further among 6th and 7th semester migrators (Figure 2).
- Declaring a major, or switching majors by the end of the second semester increased students' probability of graduating within 4 years. However, migrating in the 5th, 6th, and 7th semesters was a statistically significant factor in decreasing the probability of graduating within four years (Table 1).

What factors affect the probabilities of migrating or graduating in four years?

Table 1. **Statistically Significant Findings**

Research Question	Increased Probability	Decreased Probability
Among freshmen who entered with any declared major, what factors predicted switching to a major in a different college? (*n* = 3,272)	• Lived in on-campus housing* • Graduated from LBUSD high school* • Had any remedial needs* • Completed AP Calculus (S)* • Entered in a CNSM major** • Greater importance of "To be able to make more money" in decision to go to college (S)* • Higher stated likelihood of changing majors (S)**	• Greater age at entry* • Higher eligibility index*
Among freshmen who entered with a declared major outside of the CLA, what factors predicted switching to a CLA major? (*n* = 2,744)	• Underserved minority* • Lived in on-campus housing** • Graduated from LBUSD high school** • Completed AP Calculus (S)** • Higher stated likelihood of changing majors (S)** • Higher self-rated writing ability (S)**	• Greater importance of "To make me a more cultured person" in decision to go to college (S)*
Among freshmen who entered undeclared, what factors predicted declaring a CLA major? (*n* = 1,071)	• Female** • Pell eligible** • Athlete** • More college preparatory courses** • Completed AP Statistics (S)**	• Greater importance of "To get training for a specific career" in decision to go to college (S)**
How does switching colleges, along with other factors, affect the probability of graduating within four years? (*n* = 4,343)	• Female* • Entered in a CLA major** • Higher eligibility index** • More college preparatory courses** • More units attempted in first semester** • Number of AP exams passed** • Declared or switched colleges in 2nd semester*	• Pell eligible* • Underserved minority** • Graduated from LBUSD high school** • Had any remedial needs** • Entered in a CNSM major* • Greater importance of "To gain a general education and an appreciation of ideas" in decision to go to college" (S)* • Declared or switched colleges in 5th semester** • Declared or switched colleges in 6th semester** • Declared or switched colleges in 7th semester**
***p = 0.10 , **p = 0.05	(S) = *The Freshman Survey data*	

Conclusion / Discussion

When do students migrate, where do they come from, and where do they go?

- CLA is the predominant destination college for students who switch majors.
- Most students switch majors before the 5th semester.

How does migration impact four-year graduation?

- The likelihood of graduating in four years decreases if a student changes majors or waits too long to do so.
- Migrating in the 5th, 6th, and 7th semesters was a statistically significant factor in decreasing the probability of graduating in four years (See Figure 2 and Table 1).

What factors affect the probabilities of migrating and graduating within 4 years?

Holding constant other factors, such as college preparedness:
- LBUSD graduates are more likely to migrate.
- Underserved minorities are more likely to migrate into CLA.
- LBUSD graduates and underserved minorities are less likely to graduate within 4 years, partly due to their migration tendencies.
- Migrating from the 5th semester onward reduces the likelihood of graduating within four years.
- Freshmen who indicate on *The Freshman Survey* that they are more likely to switch majors are indeed more likely to migrate.

LBUSD graduates, underserved minorities, and those who state that they are more likely to switch majors are examples of student populations that can be identified as at risk of delayed graduation.

Implications for Action

- Review advising practices within college and the larger advising community that might influence time of migration. Integrate conversations about major interests during freshmen mandatory advising.
- Formalize collaborations with UCUA, CHHS, and CNSM to pave timelier and more seamless pathways for students changing majors.
- Use our new understanding of migration patterns to predict and gauge enrollment and advising needs for students transitioning into CLA.
- Facilitate early access of the CIRP The Freshmen Survey (TFS) data to allow divisions, colleges, and programs to identify students who are likely to change majors.

Next Steps / Future Directions

- College-specific analyses of predictors of migration
- Analyses of department-level and major-specific predictors of migration
- Further investigate predictors of migration timing, including early vs. late migration
- Use a similar approach to study predictors of university attrition