UNIVERSITY OF CALIFORNIA

Santa Barbara

Identifying Transfer Student Subgroups by Academic and Social Adjustment: A Latent Class Analysis

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Education

by

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September 2017

The dissertation of Veronica Lavenant Fematt is approved.

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June 2017

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DEDICATION

To quote the late American rapper and songwriter, The Notorious B.I.G., this dissertation is dedicated, "*To all the teachers that told me I'd never amount to nothin'…*"[1]

[1] Wallace, Christopher, McIntosh, H., Combs, S. Rock, P., Olivier, J., & Barnes, S. (1994). Juicy. On *Ready to die – The Notorious B.I.G.'s debut album* [CD].

VITA OF VERONICA LAVENANT FEMATT

June 2017

EDUCATION

University of California, Santa Barbara, CA — June 2017
Gevirtz Graduate School of Education (GGSE)
Ph.D., Educational Leadership & Organizations
Advisor: Dr. Michael M. Gerber

University of California, Santa Barbara, CA — April 2014
Gevirtz Graduate School of Education
M.A., Educational Leadership & Organizations
Advisor: Dr. Michael M. Gerber

University of California, Los Angeles, CA — June 2004
B.A., Sociology

Rio Hondo College, Whittier, CA — June 2002
A.A., General Education

RESEARCH EXPERIENCE

Latino Male Academic Narrative Study — Spring 2013 – Fall 2015
University of California, Santa Barbara
Research Advisor: Dr. Michael Gerber
Title: *Principal Investigator*

- Designed interview study on the academic trajectory of Latino males who transferred from a community college to UCSB
- Study is framed from a cultural wealth perspective and examines the familial, peer, and structural factors that enabled these students to successfully transfer and persist toward the baccalaureate

Transfer Student Transition Survey (TSTS) — Winter 2011 – Fall 2015
University of California, Santa Barbara
Research Advisor: Dr. Michael Gerber
Title: *Principal Investigator*

- Designed and developed an online survey for incoming UCSB transfer students administered through the Office of Student Affairs
- Study examines the post-transfer adjustment of incoming transfer students
- Survey respondents are invited to participate in a follow-up one-to-one interview with the principal investigator during their second year/senior year
- Study utilizes both quantitative and qualitative analyses

Transfer Student Experience Pilot Survey Study Fall 2010
University of California, Santa Barbara
Research Advisor: Dr. Michael Gerber
Title: *Principal Investigator*
- Developed paper survey for first-year transfer students enrolled in the Transfer Student Success Course (ED 118)
- Study examined the perceived benefits of the Transfer Student Success Course (ED 118) in relation to the post-transfer transition

PROFESSIONAL EXPERIENCE AND DEVELOPMENT

California State University, Channel Islands September 2016 – Current
Oxnard College
Principal Investigator: Dr. Mari Estrada
Independent Contractor, First 5 Ventura for Early Childhood Studies (ECS) Transfers
- Responsible for examining student support services for ECS students at Oxnard College (OC) with goal of building coordinated system between OC and CSU Channel Islands School of Education
- Responsible for meeting with key stakeholders at Oxnard College, building collaborative relationships between institutions, identifying barriers for local ECS transfers, collecting data, and writing final evaluation reports

Center for the Study of Race and Equity in Education Summer 2015
University of Pennsylvania
Director: Shaun R. Harper
Penn Equity Institute for Doctoral Students
- Participated and completed four online modules centered on bringing a racial equity lens to one's research agenda
- Discussion panels consisted of leading scholars and practitioners across the country whose work focused on racial equity in higher education

Office of Education Partnerships (OEP) Summer 2013 – Spring 2014
University of California, Santa Barbara
Director: Mario Castellaños
Graduate Student Researcher III, Project ASCENSION at Oxnard College
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- Developed program logic models, evaluation plans, and evaluation tools
- Conducted quantitative analyses using SPSS Software

University of California Educational Evaluation Center (UCEC) Summer 2013 – 2014
University of California, Santa Barbara
Principal Investigator: Dr. John Yun
Graduate Student Researcher III, California Academic Partnership Program (CAPP)
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University of California, San Diego (UCSD) Winter 2014
University of California, Santa Barbara

Research Advisor: Dr. Don Lubach
Independent Consultant, Preliminary Findings of the Transfer Student Success Course

- Compiled preliminary findings of the Transfer Student Transition Survey (TSTS) Study
- Produced report at the request of Dr. Allen Havis to be presented to academic senate committee in support of First-Year Experience (FYE) programs at UCSD

University of California Educational Evaluation Center (UCEC) Summer 2013
University of California, Santa Barbara
Principal Investigator: Dr. John Yun
Graduate Student Researcher II, UC Online Instruction Pilot Project (OIPP)

- Conducted and transcribed student interviews
- Utilized Dedoose Software to analyze and code qualitative data
- Involved in collaborative writing and editing of final report

University of California Educational Evaluation Center (UCEC) Summer 2012
University of California, Santa Barbara
Principal Investigator: Dr. John Yun
Independent Consultant, Dos Pueblos High School Cultural Assessment Project

- Conducted quantitative analyses on survey data using SPSS Software
- Analyzed and coded qualitative data
- Produced final report on the overall cultural climate at Dos Pueblos High School as perceived by students
- Produced final report on the overall cultural climate at Dos Pueblos High School as perceived by faculty, administrators and staff

TEACHING EXPERIENCE

University of California, Santa Barbara Winter 2017
Chicanas/os in Higher Education (CHST 131)
Instructor: Veronica Fematt
Instructor of Record

University of California, Santa Barbara Fall 2016
The Brown/Black Metropolis: Race, Class, & Resistance in the City (CHST 171)
Instructor: Dr. Ralph Armbruster-Sandoval
Teaching Assistant

University of California, Santa Barbara Summer 2014 – 2016
Motivation and Learning for Academic Success (ED 117M)

Instructor: Veronica Fematt
Instructor of Record

University of California, Santa Barbara — Summer 2012 – 2016
Freshmen Summer Start Program (INT 95)
Instructor: Dr. Ralph Gallucci
Teaching Assistant

University of California, Santa Barbara — Spring 2016
Introduction to African Studies (BLST 3)
Instructor: Dr. Jude Akudinobi
Teaching Assistant

University of California, Santa Barbara — Fall 2015
Introduction to African-American Studies (BLST 1)
Instructor: Dr. Ingrid Banks
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University of California, Santa Barbara — Spring 2015
Introduction to African Literatures (BLST 33)
Instructor: Dr. Jude Akudinobi
Teaching Assistant

University of California, Santa Barbara — Winter 2015
Introduction to African Studies (BLST 3)
Instructor: Dr. Jude Akudinobi
Teaching Assistant

University of California, Santa Barbara — Fall 2014
Introduction to Chicana/o Studies: History (CHST 1A)
Instructor: Dr. Ralph Armbruster-Sandoval
Teaching Assistant

University of California, Santa Barbara — Winter 2014
Practicum in Teaching in Higher Education (ED 120)
Instructor: Dr. Don Lubach
Teaching Assistant

University of California, Santa Barbara — Spring 2013
Organizational Change & Development (ED 242C)
Instructor: Dr. Michael Gerber
*Teaching Assistant**

University of California, Santa Barbara — Winter 2013
The Research University and the Transfer Student Experience (ED 118)

Instructor: Dr. Don Lubach
Discussion Leader

University of California, Santa Barbara Spring 2012
Introduction to Chicana/o Studies: Culture (CHST 1C)
Instructors: Dr. Tara Yosso & Dr. Gerardo Aldaña
Teaching Assistant

University of California, Santa Barbara Fall 2011
Introduction to the Research University (ED 20)
Instructor: Dr. Don Lubach
Discussion Leader

*Graduate Level Course

PUBLICATIONS

Fematt, V. (2005). The *Real* College Experience: What Every Transfer Should Know. In Bell, Inge, Bernard McGrane, & John Gunderson (3rd Ed.), *This Book is Not Required: An Emotional Survival Manual for Students*, (pp. 29-32). Thousand Oaks, CA: Pine Forge Press.

Fematt, V. (2005). The Professional Juggler. In Bell, Inge, Bernard McGrane, & John Gunderson (3rd Ed.), *This Book is Not Required: An Emotional Survival Manual for Students*, (pp. 13-14). Thousand Oaks, CA: Pine Forge Press.

IN PREPARATION

Fematt, V. (in progress). *Transfer student microaggressions and stereotypes: A closer examination of the campus climate at a four-year research university* [journal article]

Fematt, V. (in progress). *Ameliorating transfer shock through a transfer student success course* [journal article]

CONFERENCE PRESENTATIONS

Fematt, V. & Morgan, M. (2017, April). *Examining Parental Influence on College Choice and Major of Homeschooled Pre- and Post STEM-Transfer Students*. Roundtable session at the annual meeting of the American Educational Research Association, Division J, San Antonio, TX.

Fematt, V. (2016, April). Latino Males Utilizing Community Cultural Wealth to Successfully Transfer from Community College to a University. In C. Newman (Discussant), *Multiculturalism in All Levels of Higher Education*. Paper presented at the annual meeting of the American Educational Research Association, SIG-Multicultural/Multiethnic Education, Washington, DC.

Fematt, V. (2015, April). Examining the Relationship between Transfer Students' Attitudes about Community College and Self-Identification at a Research University. Roundtable session at the annual meeting of the Council for the Study of Community Colleges, Fort Worth, TX.

Fematt, V. (2014, November). Transfer Student Microaggressions and Stereotypes: A Closer Examination of the Campus Climate at a Four-Year Research University. In L. Ponjuan (Discussant), *Campus Climates: Not Quite Post-Racial*. Paper presented at the annual conference of the Association for the Study of Higher Education, Washington, D.C.

Fematt, V. (2014, April). Post-Transfer Student Success Courses. In S. L. Smith (Chair), *The Completion Agenda: Finding Different Pathways*. Roundtable session at the annual meeting of the American Educational Research Association, Division J, Philadelphia, PA.

Fematt, V. (2013, April). Rethinking Post-Transfer Support Programs for Successful Integration. In P. Marin (Discussant), *Conceptualizing Individual Transition Probabilities in Community College to Four-Year Degree Completion Pathways*. Symposium conducted at the annual meeting of the Council for the Study of Community Colleges, San Francisco, CA.

INVITED PRESENTATIONS

Fematt, V. (2016, May). *Pathways to Education: Latinos and the Community College Pipeline*. Presented for the Education Policy Discussion Group at the University of California, Santa Barbara.

Fematt, V. (2014, November). *Community College Transfer Student, Advocate, and Graduate Researcher*. Lecture presentation for The Research University and the Transfer Student Experience (ED 118) with instructor Dr. Don Lubach at the University of California, Santa Barbara.

Fematt, V. (2014, February). *Academic Trajectory from Transfer Student to Graduate Student Researcher*. Presented at the Upper -Classy Affair for the Educational Opportunity Program (EOP) at the University of California, Santa Barbara.

Fematt, V. (2014, February). *Transfer Student Stereotypes and Microaggressions*. Presented for the Research Apprenticeship Course (RAC) with instructor Dr. Daniel Solórzano at the University of California, Los Angeles.

Fematt, V., Joo, J., & Morgan, M. (2014, January). *Community College Research: Current Projects & Future Directions*. Lecture presentation for The Research University and the Transfer Student Experience (ED 118) with instructor Dr. Don Lubach at the University of California, Santa Barbara.

Fematt, V. (2013, July). *Navigating the Community College Pathway: Issues, Challenges, & Possibilities*. Presented for the Early Academic Outreach Program (EAOP) at the University of California, Santa Barbara.

Fematt, V., Alcala, M., Kim, A., & Morgan, M., (2013, January). *Education for All: Equity, Equality and Justice in Education*. Lecture presentation for The Research University and the Transfer Student Experience (ED 118) with instructor Dr. Don Lubach at the University of California, Santa Barbara.

Fematt, V. (2004, June). Teasing, A Healthy Part of Everyone's Development. Paper presented at the 28th Annual Alpha Kappa Delta International Academic Sociology Honor Society Conference, RHO Chapter at the University of California, Los Angeles.

HONORS AND AWARDS

Freedom4Youth Non-Profit Organization, Santa Barbara, CA Spring 2015
Honored for Work, Dedication, and Service

University of California Office of the President (UCOP), Sacramento, CA Winter 2014
Transfer Action Team, invited meeting with UC President Napolitano
UCSB Graduate Student Representative

University of California, Santa Barbara Grad Post Winter 2014
Featured as Graduate Student in the Spotlight

University of California Educational Evaluation Center (UCEC) Institute Summer 2013
Graduate Student Scholar

Multicultural/Multiethnic Education (MME) Special Interest Group, AERA Spring 2013
Carlos J. Vallejo Research Program for Latinos/as in Education
Fellow

FELLOWSHIPS AND GRANTS

University of California, Santa Barbara, Gevirtz Graduate School of Education
Dissertation Block Grant Award, 2015 – 2016, $12,500

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Pre-Doctoral Students Travel Grant Award, 2014 & 2013

University of California, Santa Barbara, Gevirtz Graduate School of Education
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University of California, Santa Barbara, Gevirtz Graduate School of Education
Research Conference Travel Grant Award, 2012 – 2013

University of California, Santa Barbara, Gevirtz Graduate School of Education
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University of California, Santa Barbara, Gevirtz Graduate School of Education
Survey Grant Award, 2015, 2014 & 2013, $900

SERVICE

Higher Education Action & Research Consortium (HEARC), UCSB — Fall 2013 – Present
Founder & Steering Committee Chair

Higher Education Research Group (HERG), UCSB — Fall 2012 – Present
Founder & Member

Transfer Student Alliance (TSA) Undergraduate Organization, UCSB — Fall 2014 – Present
Graduate Student Researcher on Advisory Committee

Graduate Student Orientation Seminar with Dr. Jin Sook Lee, UCSB — Fall 2014 – 2015
Invited Graduate Student Panelist

Association for the Study of Higher Education (ASHE) — Spring 2014 – 2014
Volunteer Conference Proposal Reviewer

Hispanic Serving Institution (HSI) Undergraduate Workshop, UCSB — Spring 2015
Volunteer Graduate Student Panelist

Graduate Student Association of Education Orientation, GGSE/UCSB — Fall 2014
Invited Graduate Student Panelist

Educational Policy & Evaluation Faculty Search Committee, GGSE/UCSB — Spring 2013
Invited Graduate Student Representative

PROFESSIONAL MEMBERSHIPS

American Educational Research Association (AERA)

Division J: Postsecondary Education

SIG: Multicultural/Multiethnic Education: Theory, Research, and Practice

American Association of Hispanics in Higher Education (AAHHE)

Association for the Study of Higher Education (ASHE)

Council for the Study of Community Colleges (CSCC)

ABSTRACT

Identifying Transfer Student Subgroups by Academic and Social Adjustment:

A Latent Class Analysis

by

Veronica Lavenant Fematt

Community college transfer students often experience *transfer shock* at receiving four-year institutions, which includes a variety of academic, social, and institutional challenges associated with the first-year transfer experience. Research has demonstrated that first-year program interventions can facilitate the transition of first-year college students, and increase persistence and completion. To date, however, there is a dearth of literature on first-year transfer student program interventions and whether these programs would help transfer students acclimate to four-year research institutions. Furthermore, extant literature on the post-transfer experience often groups all transfer students into a single homogeneous student population, which ignores the heterogeneity of this population. Therefore, the purpose of this study is to fill a gap in the literature by using a latent class analysis (LCA) to examine whether meaningful subgroups of transfer students emerged based on their response patterns to academic and social adjustment items. Three covariates (i.e., race and ethnicity, participation in a first-year Transfer Student Success Course, and major) were also added into the LCA model to determine the student characteristics of each of the subgroups. The distal outcome, drop in GPA, was also included in the LCA model to determine whether

the subgroups varied on this measure. Data from a newly developed survey, the Transfer Student Transition Survey (TSTS), were used for this study. This survey was distributed to three cohorts of first-year transfer students at a large selective public research university in California. The results of this study indicated the emergence of four transfer student subgroups. Additionally, participants who enrolled in a first-year Transfer Student Success Course were more likely to be in the ideal class, *Higher Level of Academic and Social Adjustment* (HighA/HighS), which had a higher probability of endorsement on both the academic and social adjustment items. This class also had the smallest drop in GPA across classes. Furthermore, STEM majors were most likely to belong in the lowest class, *Lower Level of Academic Adjustment and Social Adjustment* (LowA/LowS), which had lowest probability of endorsement on most of the academic and social adjustment items. This study is one of the first to examine community college transfer students as a heterogeneous group and empirical support for first-year transfer student program interventions. Implications for practice, policy and future research are discussed.

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Introduction

Community college transfer students experience a variety of academic, social, and institutional challenges when they transition to a four-year institution (Laanan, 1996; Townsend & Wilson, 2006). Early literature on the academic performance of transfer students focused on *transfer shock* (Hills, 1965), a phenomenon in which transfer students experienced an initial drop in Grade Point Average (GPA) during their first academic year at a four-year institution. Today, multiple scholars have expanded the definition of *transfer shock* to include a multitude of transitional issues associated with the first-year transfer experience (Rhine, Milligan, & Nelson, 2000; Berger & Malaney, 2003). It is important to note that while the challenges transfer students encounter are similar to those of traditional first-year students (i.e., students who enter a four-year institution after they graduate from high school), four-year institutions respond very differently to these two student populations. For instance, there are numerous interventions and support systems to promote successful integration and, therefore, student outcomes of traditional first-year students (Kuh, 2009; Noble, Flynn, Lee, & Hilton, 2007). Unfortunately, most four-year institutions fail to offer first-year transfer students the support they need to successfully integrate into the institution, which may delay or prevent degree attainment (Eggleston & Laanan, 2001; Rhine et al., 2000; Wang, 2009). Differential treatment among student populations may also cause some students to feel excluded and unwelcomed. Therefore, it is important for receiving institutions to provide *all* first-year students with the resources they need to successfully complete the baccalaureate (Kuh, 2003; Townsend & Wilson, 2006).

There may be numerous reasons or factors that contribute to the lack of first-year transfer student program interventions. For example, campus administrators may mistakenly assume that transfer students can successfully navigate the institution without any assistance because they are experienced college-goers (Townsend, 2008). However, extant literature has shown that first-year transfer students tend to feel like "freshmen" when they first arrive at receiving institutions because they are unfamiliar with the new campus environment (Roberts & Nell McNeese, 2010; Townsend, 2008). More recently, four-year institution administrators have tried to promote program interventions initially designed for traditional first-year students to incoming transfer students (Eggleston & Laanan, 2001). Unfortunately, re-packaging interventions to a different student population completely ignores the unique needs of that population. For instance, community college transfer students tend to be older and, therefore, resent being grouped or compared to younger first-year students (Townsend, 2008). Thus, programs not specifically designed for transfer students only serve to further alienate these students (Eggleston & Laanan, 2001; Flaga, 2006; Marling & Jacobs, 2011).

Funding may also play a factor in the number of program interventions four-year institutions can offer students. Administrators at four-year institutions may be choosing to allocate funding to the largest incoming student cohort, which tend to be traditional first-year students. In fact, transfer student enrollment quotas have been found to be contingent on the enrollment fluctuations of traditional students (Jain, Herrera, Bernal, & Solórzano, 2011). Therefore, four-year institutions may be giving preferential treatment to traditional students (who have priority admission) over transfer students – who constitute a smaller proportion of the overall student population.

Another possibility, however, may be that some administrators hold certain prejudices

and biases against community college transfer students that may stifle support initiatives and create a hostile campus climate for transfer students (Cutright, 2010; Diaz, 1992). For instance, Cutright (2010) found that campus administrators believed transfer students were less desirable for admission, had poor academic preparation, inflated credentials, and/or were not as committed as traditional students. Similarly, Laanan (2010) found that transfer students who perceived that faculty and/or the campus environment stigmatized them had difficulty adjusting academically. Conversely, transfer students who had positive interactions with faculty and experienced a welcoming environment were more likely to report a stronger sense of social adjustment.

In another study, Fematt (2014) interviewed 35 second-year (i.e., senior) transfer students across three cohorts at a large research university and found a strong awareness of *transfer student stereotypes* among the participants, which the participants had heard from others across campus. Additionally, the majority of the participants had encountered negative comments and/or attitudes based on their *transfer student status* from majority groups on campus (i.e., faculty, administrators, teaching assistants, and traditional students). Fematt (2014) recognized these comments as microaggressions, similar to those described in the literature on *racial microaggressions* (Pierce, 1970). However, unlike racial microaggressions, the participants in her study were not being targeted based on race or ethnicity (the majority of the sample self-identified as White) instead they were being targeted because they transferred from a community college – institutions perceived to be less prestigious. To describe this phenomenon, Fematt (2014) coined the expression, *transfer student microaggressions*, which engendered specific stereotypes and assumptions about students' perceived attributes and capabilities (e.g., intelligence, SES, and personal

background). Thus, a closer examination of how transfer students perceive the campus climate and their interactions with majority groups on campus is warranted to fully understand the post-transfer experience and how *transfer student microaggressions* may affect persistence or completion.

Lastly, another possible reason for the lack of transfer student interventions may be because administrators are unaware of the types of challenges transfer students encounter because most of the prominent theoretical frameworks on college persistence, retention and completion were conceptualized for traditional student populations within the four-year institutional context (e.g., Astin, 1966; McNeely, 1937; Spady, 1970; Summerskill, 1962, Tinto, 1975). These theories have helped guide the development of successful program interventions for traditional students (e.g., Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006); however, part of the reason these interventions succeed may be because traditional students tend to share similar characteristics (e.g., age, race and ethnicity, socioeconomic status (SES), level of academic preparedness) (Pascarella, & Terenzini, 1997; Pryor, Hurtado, Saenz, Santos, & Korn, 2007).

Conversely, community colleges predominantly serve historically underrepresented students, which tend to be very diverse and have varied needs. For instance, community college students are more likely to be African-American, Latino, first-generation college students, veterans, single parents, returning adults, students with disabilities, and students from low socioeconomic backgrounds (Crisp & Mina, 2012). These characteristics and attributes are not mutually exclusive, as community college students tend to identify with more than one of these groups. Therefore, it is important to re-evaluate the applicability of

theoretical frameworks conceptualized for traditional students when addressing the needs of transfer students at four-year institutions.

This study begins with a review of the theoretical frameworks commonly used to understand college persistence, integration, and completion in the field of higher education. These frameworks are important because they guide the development of program interventions, which are designed to facilitate the adjustment of traditional first-year students to the four-year institution. Such programs introduce students to the numerous resources on campus and teach students the essential skills needed to be successful in college, which in turn encourage persistence and timely completion. Additionally, the three frameworks presented in the section below, along with literature on the post-transfer experience, guided the development of the survey instrument utilized in the present study.

Theoretical Frameworks on College Completion

Student Involvement. Astin's (1984) theory of student involvement defines *involvement* as "the amount of physical and psychological energy a student devotes to the academic experience" (p. 518). According to Astin, a student who is highly involved will spend considerable time on his/her studies, interacts with faculty and peers, and participates in campus organizations. Astin's earlier work (1975) provided the foundation for his theory on student involvement when he found that students who lived on campus, participated in extracurricular activities (i.e., Greek life, intercollegiate sports, and research projects), and worked part-time on campus were more likely to persist. Actions, or the behavioral component of the term defined and identified *involvement*. As a construct, student involvement had quantitative (i.e., how many hours spent studying) and qualitative (i.e., comprehension of the material) attributes.

According to Astin (1984), students were not passive recipients of knowledge and curriculum needed to elicit a sufficient level of effort and participation in order to attain the desired learning and student developmental outcomes. Institutions also played a role in *eliciting* student involvement through its capacity to implement policies and programs to increase student involvement opportunities. However, the ultimate unit of analysis was the student since he or she controlled the level, or extent, of his or her involvement (Wolf-Wendel, Ward, & Kinzie, 2009). The term involvement tends to be used interchangeably with the concept of *engagement* as they build upon the each other causing an overlap. The main distinction between *involvement* and *engagement* is that the level of involvement a student puts forth rests on his or her actions, whereas the responsibility to elicit student engagement rests on the institutions.

Student Engagement. Student engagement has also been found to positively affect student persistence. The general consensus among scholars is that student engagement can be understood as a relationship between the student and the institution. According to Kuh (2000) there are five measures for effective educational practice: level of academic challenge; active and collaborative learning; student interactions with faculty; enriching educational experiences; and a supportive campus climate. Specifically, for students to be successful in college they must devote time and effort into educationally purposeful activities that will enhance their overall quality of learning, and the institution must provide them with the resources they need to be successful. Kuh et al. (2006) have found that transfer students tend to interact less with faculty and participate in fewer educationally enriching activities at four-year institutions, which could be the result of the institutions' failure to provide this population with those opportunities.

According to Kuh, Cruce, Shoup, Kinzie, and Gonyea (2008), engagement in educationally purposeful activities (e.g., first-year seminars, learning communities) were positively related to academic outcomes and first- to second-year persistence, even after controlling for individualistic characteristics (i.e., level of academic preparedness, first-generation college, SES, race and ethnicity) – though the effects were greater for lower ability minority students. Kuh et al. (2008) emphasized an important caveat in developing a successful program intervention, which was that the program needed to be customized to the student population it was intended to help. Thus, according to Kuh and other college engagement scholars, the institution bears the majority of the responsibility since it must provide effective learning environments, early programmatic interventions, and a supportive campus climate for students. Therefore, university leaders who are committed to student success must implement appropriate practices, policies, and programs to create an enriching college experience for *all* types of students.

Student Integration. Another prominent and influential theory in higher education is Tinto's (1975) predictive theory on student departure, in which he posited that dropout behavior was contingent on the ongoing processes of interaction between students and institutions. Thus, Tinto's theory was unique for its time given that it did not solely place the onus of departure on the student but on the interaction between the student and the institution. Tinto's model (see Figure 1) delineated a path where a series of interactions starting with a students' incoming characteristics, the degree to which a student integrated into the academic and social systems of an institution, and their commitment level to reaching their goals, would either lead to temporary (e.g., stopout or transfer) or permanent dropout behavior (e.g., academic dismissal or voluntary withdrawal). The first part of Tinto's

model focused on individual characteristics of students, which included students' educational experiences prior to college entry, his/her expectations about future educational attainments, and family background. Family background included socioeconomic status (SES), level of parental education and overall parental expectations. According to Tinto, parents who held high expectations for their children's further education, praised them, and advised them about college were less likely to drop out.

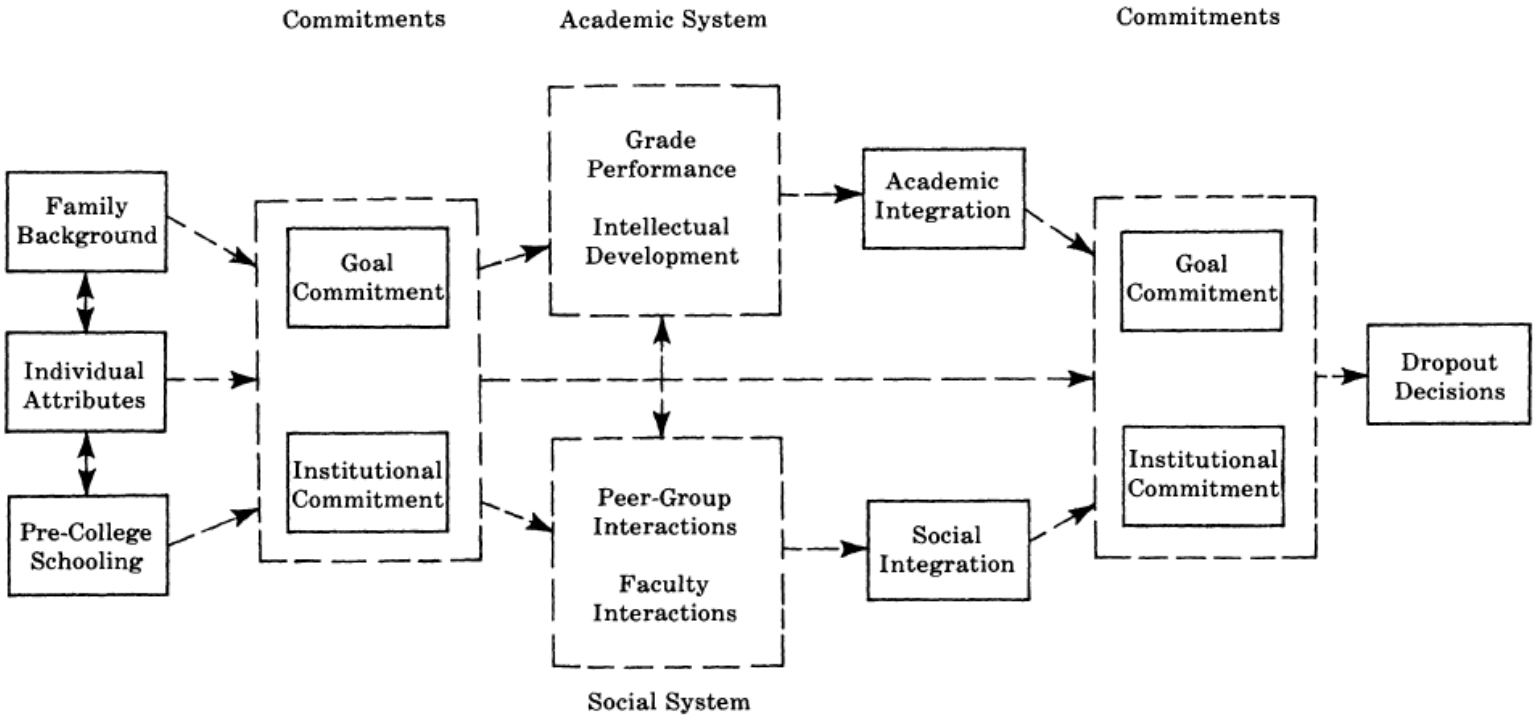

Figure 1. Tinto's (1975) Model of Student Departure.

The present study focused on part of Tinto's model. Specifically, this study focused on the academic and social systems of Tinto's model; however, more emphasis was placed on the social interactions of first-year transfer students and how such interactions affected their overall adjustment at the four-year institution. According to Tinto, the degree to which students integrated into the academic and social systems of the institution were more directly related to student persistence. The more integrated students were to the academic and social systems of an institution the more likely they were to be committed to the institution and to college completion. Academic integration consisted of strong grades and the students' intellectual development throughout college (i.e., identification with the norms of the academic system). Social integration consisted of positive interactions with peers, staff, administrators, and faculty. Tinto also asserted that positive social interactions were a stronger indicator of persistence than meeting academic standards. Tinto thought a possible explanation for this was that faculty-student interactions increased not only social adjustment but academic adjustment as well. Therefore, the more integrated students were into these two systems, the more likely they were to be committed to the institution and to college completion.

Tinto's theoretical framework received extensive criticism, however, for focusing on traditional student populations and emphasizing assimilation and acculturation as an integral component of successful integration (Rendón, Jalomo, & Nora, 2000; Tierney, 2000). Critics have pointed out that Tinto's work fails to account for racial and ethnic differences and took issue with Tinto's use of Van Gennep's (1960) rites-of-passage (i.e., separation, transition, and incorporation) framework to develop his model (Rendón et al., 2000; Tierney, 1992). Researchers refuted the notion that minority students needed to abandon their cultural

heritage, family ties, and outside interests in order to successfully complete college. Additionally, critics denounced the assimilation perspective because it was based on the premise that minority group norms and cultural values were inferior to those of the dominant group (i.e., White traditional students). These types of assumptions, critics argued, ignore systemic inequities that have placed historically marginalized racial groups at a disadvantage in society (Rendón et al., 2000), and ignore the fact that institutions of higher education reward White-middle class values and norms. Tinto (1993) later revisited his work and addressed some of these criticisms, countering that assimilation into the dominant institutional culture was not necessary for integration and that historically marginalized student populations could integrate by finding membership into subgroups on campus.

Despite the criticism, however, researchers have tested part, or all, of Tinto's model. It is important to note that Tinto's work was theoretical and did not designate any formal methodological approach to measure integration. Therefore, researchers have adopted different methodological approaches in their studies. Since Tinto's theoretical framework was originally conceptualized with traditional college students in mind within the four-year institutional context, earlier studies primarily focused on traditional students. Some of these studies proved to be more generalizable than others but the findings generally supported the predictive validity of his model and the importance of academic and social integration for understanding student attrition among traditional students (see Bean, 1980; Pascarella, & Terenzini, 1979, 1983; Terenzini, & Pascarella, 1980). Researchers then began to test Tinto's model on different student populations. These studies also determined academic and social integration to be important predictors of persistence for both first-year traditional students and transfer students.

For instance, Pascarella and Chapman (1983) used a multi-institutional approach, which included student samples from two-year commuter, four-year residential, and four-year commuter institutions. The results of this study indicated institutional commitment to have a stronger direct effect than goal commitment in four-year residential and four-year commuter institutions whereas goal commitment had a stronger direct effect in two-year commuter institutions. In terms of academic and social integration, social integration had the strongest direct effects on persistence in four-year residential institutions. In two-year and four-year commuter institutions, academic integration indirectly influenced persistence through its direct effects on institutional commitment. One of the limitations of this study, however, was that the authors did not distinguish between students who may have temporarily left (i.e., stopped-out) and permanent dropouts – the former being a very common occurrence among students attending community colleges.

Additionally, Pascarella, Smart, and Ethington (1986) tested the applicability of Tinto's model on students who began at the community college and transferred to four-year institutions. The sample consisted of 825 students (418 men and 407 women) who initially enrolled in 85 community colleges over a nine-year period. The results of this study indicated academic and social integration to have significant direct effects on persistence and degree completion for both men and women. Findings from this study concluded that the experiences of transfer students at four-year institutions might be more important to persistence than the influence of precollege variables and asserted the importance of purposeful institutional policies that encouraged academic and social integration.

While the theoretical frameworks on student involvement, engagement and integration have been useful in understanding college completion, the fact remains that these

frameworks were developed for a relatively homogeneous student population (Pascarella, & Terenzini, 1997). Today's student population is becoming much more diverse as the racial and ethnic demographics in the U.S. continue to rapidly change and more ethnic minorities are projected to contribute to the four-year undergraduate student composition in upcoming years (Ranking & Reason, 2005). As aforementioned, a large proportion of community college students tend to be underrepresented minority students, first-generation college students, low-income students, students with disabilities, veterans, and/or tend to be older adults (American Association for Community Colleges, 2015b). Therefore, it is important to consider the changing trends in student demographics when researching college persistence and completion, and/or the types of program interventions that might support successful student outcomes for underrepresented students.

Statement of the Problem

Research has demonstrated that first-year program interventions can increase student persistence and college completion. Providing first-year transfer students with appropriate program interventions could prevent or reduce the extent of transfer shock, as broadly defined to include academic, social, and institutional transitional challenges. The ability to help transfer students acclimate academically and socially into receiving institutions would increase the likelihood of persistence and timely completion. To date, however, there is a dearth of research on first-year transfer student program interventions (mainly because so few exist) and whether these programs would help transfer students acclimate and integrate into four-year institutions. Furthermore, extant literature on the post-transfer experience often groups all transfer students into a single homogeneous student population, which ignores the heterogeneity of this population. Ignoring the heterogeneity of the transfer student population

makes it is impossible to determine whether *all* transfer students need help transitioning into receiving institutions, and could result in program development limitations. For instance, research has shown that transfer students who major in business or in a STEM-related field (i.e., science, technology, engineering, and math) tend to have more difficulty adjusting academically (Carlan & Byxbe, 2000). As noted by Kuh et al. (2008) it is important for institutions to tailor program interventions to the student population it is intended to help.

Therefore, the purpose of this study is to fill a gap in the literature by using a latent class analysis (LCA) to examine whether meaningful subgroups of transfer students emerged based on their response patterns to academic and social adjustment variables. Three covariates (i.e., race and ethnicity, participation in a first-year Transfer Student Success Course, and major) were also added into the LCA model to determine the student characteristics of each of the subgroups. The distal outcome, drop in GPA, was also included in the LCA model to determine whether the subgroups varied on this measure.

Thus, this study examines whether transfer student subgroups differed on academic and social adjustment variables based on ethnicity, course participation, choice of major, and GPA. Data from a newly developed survey, the Transfer Student Transition Survey (TSTS), were used for this study. The development of this survey was informed by the three aforementioned theoretical frameworks on persistence and college completion (i.e., student involvement, engagement, and integration), along with literature on the post-transfer challenges of first-year community college students. This survey was distributed to three cohorts of first-year transfer students at a large selective public research university in California.

Chapter 2

Literature Review

This study explored whether meaningful subgroups of transfer students emerged based on their response patterns to academic and social variables, and whether these subgroups differed by race and ethnicity, participation in a Transfer Student Success Course, college major, and drop in GPA. The literature presented here focused on the issues associated with the community college transfer pathway and the post-transfer experience. Therefore, the first part of this review provides information on the community colleges as a system of institutions that provide a pathway to an affordable postsecondary education but pose challenges for many nontraditional student populations in terms of completion and/or transfer. Additionally, community college student characteristics are also included in this review to convey the diversity of this student population. The last part of this review addresses the post-transfer challenges experienced at four-year institutions and the program interventions used to facilitate the adjustment of traditional first-year students, which may be used to conceptualize the development of first-year program interventions for transfer students.

The literature included in this review was peer-reviewed and obtained from the following databases: ERIC, PsycINFO, and ProQuest. Literature searches were conducted using various combinations of the following search terms: "Transfer Student Challenges," "Post-Transfer Adjustment," "Academic and Social Adjustment of Community College Transfer Students," "Transfer Shock," "Transfer Students," “Transfer Students and College Completion,” “Latino Community College Students,” First-Generation Community College Students,” and "First-Year Support for Transfer Students at Four-Year Institutions.”

Additionally, the reference sections of the articles were examined for potentially relevant literature. Studies were included in this literature review if the research was in English and conducted in the U.S.

Community Colleges

According to the American Association for Community Colleges (AACC) approximately half, or 45 percent, of all U.S. undergraduates begin their postsecondary education at a public community college (AACC, 2016a). Of these students, 41 percent were first-time freshmen, 17 percent were single-parents, 36 percent were first-generation college students, 12 percent were students with disabilities, 4 percent were veterans, and 7 percent were Non-U.S. citizens (AACC, 2016a). These characteristics and attributes are not mutually exclusive, as community college students tend to identify with more than one of these groups. Thus, community colleges provide a vital entry point into higher education through open enrollment policies and low tuition costs for students who otherwise may not have had the opportunity to pursue a college education. Demographically, White students constituted 49 percent of all community college students enrolled for credit during the fall 2014 academic year while Latinos represented 22 percent, the second largest ethnic group (AACC, 2016a).

While community colleges serve multiple missions (e.g., vocational training, certification programs, skills development) to meet the needs of a diverse student population (Bragg, 2001; Dougherty & Townsend, 2006) the majority of first-time community college students aspire to transfer to a four-year institution to attain the baccalaureate (Bailey, Leinbach, & Jenkins, 2006; Cohen, 2003). Unfortunately, very few students actually succeed in completing a degree, certificate and/or transferring to a four-year institution, which has

placed community colleges under intense scrutiny and criticism (Boggs, 2011; Grubb, 1991). For example, the California Community College System (CCCS) is the largest in the nation with 113 colleges and approximately 2.3 million students, which accounts for 73 percent of the state's undergraduate population or 25 percent nationally (Student Success Task Force, 2012). Yet, of the 60 percent of first-time community college students in California who stated their intent was to earn a degree, certificate, and/or transfer, only about one-fourth actually succeeded within six years (Shulock & Moore, 2007).

Nationally, low student success rates at the community college level translate into low baccalaureate and educational attainment for the U.S., which is problematic as it is no longer possible to attain middle-class status or achieve upward mobility with only a high school diploma. Today, most occupations require some level of postsecondary education or training (Carnevale, Strohl, & Smith, 2009). In fact, it is estimated that by 2018 the U.S. will need to fill 46.8 million jobs. Of those jobs, 63 percent will require some college education while 33 percent, or 16 million, jobs will require a bachelor's degree or higher (Carnevale, Strohl, & Smith, 2010). Meeting the demand for an educated workforce will prove difficult as baccalaureate degree completion rates have remained stagnant – only moving from 29.1 percent to 30.8 percent between 2000 and 2008 (Hezel Associates & Western Interstate Commission for Higher Education, 2010).

The abovementioned statistics and projections have caught national attention. In 2009, the President of the United States called for major reform and accountability from our nation's community colleges (Boggs, 2011). That year President Obama announced a landmark initiative, the American Graduation Initiative (AGI), which was a $12 billion plan to reform community colleges and called for five million community college graduates by

2020 (Crisp & Mina, 2012). Thus, as conduits to the baccalaureate, not only do community colleges provide much needed diversity in higher education but they are also play a vital role in educating our populace and ensuring economic prosperity.

Community College Students

Community college enrollment and attendance patterns reflect the varied needs of its student population. It is not uncommon for students to attend multiple institutions on the way to the baccalaureate. For instance, some students may go back-and-forth between two or more institutions, referred to as "swirling," while others may hold concurrent attendance at two (even three) institutions (Crisp & Mina, 2012; McCormick, 2003). Some of the reasons students may "swirl" between institutions and/or hold concurrent enrollment may be due to limited course offerings, scheduling conflicts at their home institution, and/or to expedite transfer requirements. In terms of attendance, research has shown that community college students are more likely attend school part-time and work while enrolled (Bailey et al., 2006). For instance, during the fall 2013 academic year, 61 percent of the students enrolled in for-credit courses were attending part-time (AACC, 2015b). The Department of Education has listed part-time attendance as a risk factor since students who attend part-time prolong time-to-completion, are prone to stop-out behavior, and are less likely to persist (Fry, 2002).

However, recent trends indicate that the number of students who attend full-time is on the rise. Full-time enrollment increased by 24.1 percent in a two-year time period from fall 2007 to fall 2009 (Mullin & Phillippe, 2009) while the number of students attending part-time or less dropped from 53 percent to 43 percent (AACC, 2015c). During the same time period, community colleges saw an influx of traditional-age students (i.e., students between 18 to 24 years old who enroll in college within two years of completing high school) (Mullin

& Phillippe, 2009). In terms of demographics, traditional-age minority students, with the exception of Latinos, were no more likely than their White counterparts to start out in a community college, which has been true over a 30-year period (Adelman, 2005). The surge in enrollment across community colleges was a direct result of the most recent economic recession, which dramatically reduced funding to postsecondary institutions, led to enrollment caps and re-directed traditional students away from four-year institutions to the community college (Boggs, 2011; Mullin & Phillippe, 2009). People who were left unemployed in the recession were another sub-population that contributed to the enrollment increase as they sought out workforce training, skill set enhancement, and/or certificates or degrees at low cost (Mullin & Phillippe, 2009).

Overrepresentation of Latina/o Students in the Community College

Nationally, Latinos were the second largest community college student demographic, which accounted for 22 percent of community college students enrolled for credit during the fall 2014 academic year (AACC, 2016a). In California, however, out of all the first-year students enrolled during the fall 2014 academic year, 48 percent, or 125,479, were Latina/o students (CCCCO, Data Mart 2015). Latinos are also the fastest growing demographic in the U.S., and accounted for 56 percent of the population growth from 2000 to 2010 (Panzar, 2015). Yet, Latinos fall behind other ethnic groups in attaining the baccalaureate (Becerra, 2010; Panzar, 2015). According to Gándara (2015), about 19 percent of African Americans, 39 percent of Whites, and more than 50 percent of Asians had completed a baccalaureate by age 29, compared to only 14 percent of Latinos in 2013. There are numerous factors contributing to the status quo, which will briefly be discussed in this section. However, it is important to note that the issues raised in this section are not mutually exclusive and are not

intended to represent an extensive list of all the factors contributing to low baccalaureate attainment among Latinos.

Prior to entering college, research has shown that Latina/o students are more likely to attend overcrowded and underfunded schools in disadvantaged communities; thus, Latinos have historically been "pushed out" of the education pipeline through inequitable schooling practices and policies (Hill & Torres, 2010; Nuñez, Sparks, & Hernandez, 2011; Valencia, 2002; Valencia, 2011; Yosso & Solórzano, 2006). Historically, economically disadvantaged high school students are more likely to be placed in vocational tracks rather than academic or college-bound tracks (Goldrick-Rab, 2010). Consequently, Latinos leave high school academically underprepared with little or no understanding of how to pursue a postsecondary education and are more likely to enroll at a local community college (Person, & Rosenbaum, 2006; Nuñez, Sparks, & Hernandez, 2011). Despite the large enrollment of Latinos in college, however, Latina/o students had lower transfer rates even after controlling for academic preparation and SES (Wassmer, Moore, & Shulock, 2004). Overall, approximately 44 percent of Latinos of traditional college age (i.e., 18-24) attend community colleges compared to about 30 percent of both African American and White undergraduates (46 percent of the overall Latino population was of Mexican decent) (Fry, 2002).

In a recent study on racial and ethnic disparities in college application behavior among high school graduates in Texas, researchers found that Latina/o students were less likely to apply to *any* postsecondary institution at most levels of college readiness relative to White students (Black, Cortes, & Lincove, 2015). Furthermore, highly qualified (i.e., above average compared to an entering freshmen at the top ranked public university) Latina/o students were more likely to "undermatch" (i.e., apply to campuses for which they are

overqualified) relative to White student counterparts. More alarming was the fact that Latino college application behavior was not offset by the state's guaranteed admission to flagship universities in Texas for all high school graduates who finished in the top 10 percent of their senior class.

Fry (2004) reported similar findings on Latino college enrollment and concluded that the baccalaureate attainment gap between Latinos and Whites could be closed if academically prepared Latinos attended similar colleges and graduated at the same rate as equally prepared White students. Instead, findings indicated that well-prepared Latinos were more likely to attend less selective institutions and had lower completion rates – low completion rates were also reported among well-prepared Latinos who attended the same types of colleges as White peers. National transfer rates revealed a similar "undermatching" pattern as 56 percent of community college students chose to transfer to less selective public four-year institutions (Jenkins & Fink, 2015).

As aforementioned, there are numerous factors contributing to the disparity in educational attainment among Latinos, one such factor may be that a large proportion of Latina/o students are first-generation college students from lower-income families, which tend to have higher high school and college attrition rates. First-generation college students tend to be psychologically underprepared for college and unfamiliar with college and/or the college enrollment process (Bailey et al., 2006; Dennis, Phinney, & Chuateco, 2005; Grimes, 1997; Inman & Mayes, 1999). Latinos are also more likely to learn about college through their immediate social networks, and tend to follow family and friends into specific institutions (Goldrick-Rab, 2010). Generational status also makes a difference in the college-going attitudes of Latinos as research has shown that academic achievement and educational

aspirations tend to decrease in the third generation (Becerra, 2010; Suárez-Orozco & Suárez-Orozco, 1995).

Furthermore, Latinos are also more likely to attend school part-time or stopout to accommodate full-time work schedules in order to financially contribute to the family household income (Fry, 2002; Wassmer et al., 2004). Latinos also tend to be overrepresented in remedial education, which research has also shown prolongs time-to-transfer, may stifle academic motivation, and leads to stopping-out behavior and/or college attrition (Acevedo-Gil, Santos, Alonso, & Solórzano, 2015; Bailey, 2009; Deil-Amen & Rosenbaum, 2002; Melguizo, Hagedorn, & Cypers, 2008). These students are also more likely to enter the workforce following high school and defer college until they are older (i.e., age 24 or higher). According to Adelman (2005), older students tend to think of themselves as employees rather than students and are therefore less likely to transfer.

Another concern is the educational attainment gap between Latina woman and Latino men (Clark, Ponjuan, Orrock, Wilson, & Flores, 2013; Harris & Wood, 2014). In 2009, Latinas earned 62 percent of bachelor degrees (Sáenz & Ponjuan, 2011). According to Fry (2002), Latino males average 10.6 years of schooling, compared to 12.2 years of schooling for African American males, and 13.3 years of schooling for White males. Research has shown that Latino males are more likely to dropout of school to enter the workforce, join the military, and/or end up incarcerated in disproportionately higher numbers (Clark et al., 2013; Mariscal, 2005; Sáenz & Ponjuan, 2008; Yosso & Solórzano, 2006).

Cultural factors must also be considered. Latinos are more likely to adhere to collectivist cultural family norms that adhere to traditional gender roles and customs. Therefore, gender roles may also influence college-choice behavior. For instance, Latinas

may feel pressure to conform to traditional gender role expectations of getting married and starting a family at the expense of pursuing a higher education (Castillo, Conoley, & Brossart, 2004; Gonzalez, Jovel, Stoner, 2004). Latino males, on the other hand, may display masculine characteristics associated with *caballerismo* such as, taking care of the family, and working to contribute to the family income (Cerezo, Lyda, Beristianos, Enriquez, & Connor, 2013). Thus, *familismo*, or the strong orientation and commitment to immediate and extended family, presents conflicting values for students who need to adhere to individualistic and self-oriented goals to succeed an in individualistic-oriented education system that rewards White American values and beliefs (Castillo, 2010; Martinez, 2013; Toro-Moron, 2012). Moving away to college, for example, is often challenging for Latina/o students because in many Latino households children are not expected to move out of the family home until marriage, which may also account for the high enrollment rates at community colleges as Latinos tend to choose institutions closer to home (Black et al., 2015; Fry, 2004; Garcia & Figueroa, 2002). While cultural norms may play a role in Latino college-choice decisions there is some research to suggest that the more acculturated Latino students are to American educational values the more likely they are to pursue higher education (Becerra, 2010; Clark et al., 2013) – the decision to do so, however, comes at an emotional and taxing cost for Latino students (Rendón, Nora, & Kanagala, 2014).

Therefore, the abovementioned factors coupled with the fact that Latina/o students receive inequitable schooling, tend to be pushed-out of the education system, and receive minimal, if any, college preparation may be contributing to the overrepresentation of Latinos in the community college and low baccalaureate attainment rates. Understanding the factors that hinder Latinos from pursuing a postsecondary education is critical if efforts to change

the status quo are going to be made. Latinos are the fastest growing population in the U.S. and educational disparities will negatively impact state and national economies. In California, it is projected that by 2025 the state will be 1 million baccalaureate degrees short of labor force needs (Gándara, 2015). Nationally, Fry (2002) estimates that between the years 2000 to 2025, the White working age population is expected to retire from the labor force and decline by five million while working age Latinos are projected to increase by 18 million.

Predictors of Transfer

The literature on community college students has focused on five main groups of factors that contribute to persistence and transfer outcomes: student's background characteristics; pre-college level of academic preparedness and achievement; institutional characteristics; access to financial aid; and state-level characteristics (Melguizo et al., 2008). In terms of pre-college academic preparedness, many community college students tend to be less academically prepared for college-level work and more likely to require remedial education, which appears to negatively affect student persistence (Deil-Amen & Rosenbaum, 2002; Wood, Nevarez, & Hilton, 2012). Institutional barriers also pose challenges to transfer. For instance, streamlined articulation agreements between community colleges and four-year institutions facilitate the transferability of college credits and minimize students' time-to-transfer (Bailey et al., 2006). Receiving financial aid was also found to be a predictor of student retention (Fike & Fike, 2008). Unfortunately, a majority of community college students may not be aware of the various types of aid available to them (e.g., federal, state, fee waivers, campus-aid), some students may not even know that any financial assistance is available for their college education (Melguizo et al., 2008).

Race and ethnicity also matters as African American and Latina/o students tend to have lower completion rates than White and Asian students (Mertes & Hoover, 2014; Wassmer et al., 2004; Wang, 2012; Wood, Nevarez, & Hilton, 2011). Students who attend full-time, do not stop-out, attend an orientation course, and register for courses on time were also more likely to persist (Shulock & Moore, 2007). For instance, Wang (2012) found that students who were enrolled full-time were 36 percent more likely to transfer than students who were enrolled part-time. Traditional-age students were also more likely to transfer than older students (Adelman, 2005; Wood et al., 2012). Research has also shown that transfer rates were higher among affluent students (Wang, 2012; Wassmer et al., 2004). For example, Dougherty and Kienzl (2006) found transfer rates among affluent students to be at 55 percent while students from the lower income brackets were only at 10 percent. Similarly, Wang (2012) found that one quintile increase in SES was associated with a seven percent increase in the likelihood of transfer. Furthermore, students who were married were 20 percent less likely to transfer compared to students who were not married and those with dependents were 33.1 percent less likely to transfer compared to students without children (Wang, 2012).

Transfer Students and College Completion

Findings from a national report found more than 70 percent of community college students transferred into four-year public institutions and nearly two-thirds (64.8 percent) were able to complete within a six-year timeframe while an additional 7.1 percent remained enrolled at the four-year institution (Shapiro et al., 2013). Research has shown that the most important attributes of successful transfer students is that they are committed to their degree goals and tend to be more motivated and proactive in seeking the information they need to navigate out of the community college system and into a four-year institution (Berger &

Malaney, 2003; Wang, 2012). Of course, there are students who enter community colleges unsure of their educational and career goals; fortunately, one of the greatest benefits of attending a community college is that students are able to explore their options at a relatively low cost (Rhine et al., 2000). The ability to explore various educational and career options allows students to decide whether or not pursuing a baccalaureate is the ultimate goal and once these students transfer they are less likely to switch majors or drop out (Rhine et al., 2000). Therefore, one of the biggest challenges to college completion is making it out of the community college system.

If, however, students who transfer decide to stop-out or drop-out of a four-year institution prematurely, it may not be for academic reasons as earlier research has suggested but instead due to external factors like time constraints and financial problems. For example, Townsend (1995) had the opportunity to survey nine transfer students who had left a four-year institution prior to completion. Four of these students had passing GPAs and only one student was completely failing with a 0.0 GPA after the first semester. Of the remaining five transfer students, none indicated leaving due to academic difficulty, instead two students reported having financial troubles and the remaining three wanted to pursue a major the university did not offer. Therefore, since community college students tend to be older and financially independent, compared to traditional students, external commitments and financial problems may force them to stop-out or drop-out at the four-year institutional level. It also appears that the institutional fit plays a role in attrition decisions as three students left due to a mismatch between the students' choice of major and degree attainment goals.

Certainly, institutional selectivity matters as it is highly correlated with student persistence. Selective institutions tend to enroll academically well-prepared students and

offer numerous campus resources to help traditional students graduate in a timely manner (Kuh et al., 2006). The majority of transfer students do successfully complete their degrees in spite of the academic and social challenges they encounter at four-year institutions. Completing the baccalaureate largely depends on the transferability of community college credits and articulation agreements between community colleges and receiving four-year institutions.

The transferability of course credits is extremely important for transfer students given that most have had to complete all their general education lower division requirements and prerequisite courses for their selected major at the community college. Therefore, the most common frustration among transfer students was the uncertainty of not knowing how much financial aid they would receive through the four-year institution and not knowing how many transferable credits would be accepted and counted towards their desired major. Townsend (2008) found that the transfer students in her study applied to four-year institutions that offered their major and were diligent in choosing institutions that would accept all or most of their community college credits (Townsend, 2008). According to Townsend (2008), the institution for this study accepted students into a particular college (e.g., College of Arts and Science), however, this did not mean that these students were automatically accepted into the major, which is a common (and precarious) scenario for many transfer students. Townsend (2008) found that students could only apply to their desired major once they were admitted to a college, which was also when they would find out how many of their credits counted towards the prospective major. Rhine et al. (2000) found that students who were unable to have the majority of their credits applied to their desired major were more likely to switch

majors in order to ensure timely completion or to avoid going over credit thresholds, which at some institutions results in students having to pay out-of-state tuition costs.

Similarly, Fematt (2013) conducted a survey study on the challenges first-year transfer students experienced at a selective research university, which included several open-ended questions. Participants in STEM fields indicated having to re-take lower-division courses. For one student, having to re-take lower-division coursework added an additional year to completion. Another participant, was informed that she would have to re-take the majority of her lower-division courses at the university. Due to financial hardship and time-to-degree requirements she was forced to change her major to feminist studies – STEM lost a female scientist. Transfer students who applied to an economics major expressed feeling of frustration as well because in order to be accepted into the major they were required to pass two "weeder courses." Weeder courses are associated with a large dropout rate and are designed to fail a large proportion of incoming students. Thus, pre-economics majors who do not pass the required courses were forced to choose another major. These participants expressed anger and resentment towards the university for using what they perceived as unfair practices. Unfortunately, such practices are all too common across four-year institutions. Community colleges and four-year research universities need to revisit existing articulation agreements to establish which pre-major requirements and number of lower-division units will be honored and applied towards the baccalaureate.

Monaghan and Attewell (2015) conducted a study comparing college completion rates between community college transfer students and traditional student counterparts, which also examined whether transfer students received less financial aid at four-year institutions. Using data from the Beginning Postsecondary Students (BPS) Longitudinal

Study analyses were conducted on a representative cohort of first-time college students for six years after their initial entry in 2004. Results indicated a statistically significant baccalaureate attainment gap of 17 percentage points lower for transfer students than their traditional student counterparts. Closer examination revealed that differences in educational progress started to emerge in the third and later years with transfer students starting to fall behind traditional student counterparts in credit accumulation. Among community college students who had accumulated 60 credits, which is equivalent to an associates' degree, only 60 percent of these students transferred to a four-year institution. Moreover, of the students who did transfer, only 58 percent were able to bring all or most of their credits to the receiving institution. This study also supports previous findings that once transfer students are at the receiving institution and have had most of their credits accepted they are more likely to complete. According to Monaghan and Attewell (2014) baccalaureate attainment rates for transfer students would be higher than completion rates among traditional students if credit loss did not occur.

Student Satisfaction with Four-Year Institutions

Berger and Malaney (2003) surveyed 372 community college transfer students at a large public four-year university and found that patterns of student involvement changed once students transferred into the receiving institution. For instance, at the community college level, students were more likely to spend time on external commitments than they were once they entered the four-year institution. The level of involvement at the community college level had no effect on students' satisfaction and academic achievement at the four-year institution. On the other hand, greater satisfaction with the four-year institution was reported among students who were more immersed with the social aspects of the campus.

Thus, social integration is a prominent factor in overall satisfaction. Additionally, students who were the most satisfied with their four-year experience and performed well academically were those who were well prepared for the overall transfer process (i.e., pre – to post-transfer process). In other words, the students who had actively sought out graduation information prior to transfer, had received advice from faculty and staff about transfer, lived on campus after transfer, and reported higher levels of social engagement with their peers were most likely to be satisfied with their overall four-year experience. Conversely, students who spent more time studying and working on homework prior to transfer, worked more hours off campus after transfer, and spent more time focused on family commitments were less likely to be satisfied with their four-year experience.

In an earlier study, Alpern (2000) found similar results concluding that transfer students who were more likely to be satisfied with their institution had received accurate information about the transfer process, financial aid, and had achieved social integration at the four-year institution. Therefore, students who received precise institution information and did not experience any problems transferring credits were more likely to report being satisfied with their four-year institution. Students who received inaccurate information and were required to complete additional courses at the four-year institution were less likely to be satisfied with their institutions. Therefore, providing transfer students with first-year transfer student interventions that provide students with information about the four-year institution are essential to an overall satisfying college experience.

Furthermore, Alpern (2000) emphasized the importance of social integration as an indicator of institutional satisfaction and believed that transfer students' employment needs may prevent them from participating in student organizations or taking up leadership

positions on campus. She suggested organizing opportunities that promoted social integration at times that worked best with the schedules of transfer students. Additionally, about 80 percent of the student sample in her study indicated that their educational goals were established before they began at the community college and had not changed, which reiterates the importance of a students' commitment level to reaching their degree goal. Therefore, it appears that students who had done their due diligence in learning about the transfer process, were able to transfer the majority of their credits, and were able to adjust socially were more satisfied with their four-year institutional experience and were able to reduce the extent to which they experienced transfer shock. Thus, social integration may be more important to transfer students as it enables these students to establish a sense of belonging and persist towards completion.

Another factor that may be contributing to the importance of the social aspects of college is that transfer students tend to view their community college experience as an extension of high school or a stepping-stone to the real college experience awaiting them at the four-year institution. Students' perceptions about college and the college experience are greatly influenced through societal and cultural norms; thus, it should not be much of a surprise that student college expectations, college adjustment, and overall college satisfaction tends to be influenced by exposure to messages in popular media about college (Tobolowsky, 2006). Therefore, transfer students may have higher expectations of what it means to be a four-year college student and since these students are able to adjust academically in a relatively short period of time, more importance is placed on their social aspects of college life. Those who are unable to integrate socially, or establish a sense of belonging may become disillusioned with their overall post-transfer experience as the aforementioned

studies have indicated.

Transfer Shock

Hills' (1965) work was among the most prominent as he was the first to conduct a systematic review of relevant literature pertaining to differences in academic performance, as measured through GPA, between traditional students and transfer students. Hills coined the term "transfer shock" to describe the drop in GPA experienced by community college transfer students at receiving four-year institutions. In his seminal piece, Hills (1965) included more than 20 studies involving hundreds of institutions with tens of thousands of students. He found that out of 46 data sets, 44 revealed transfer shock, which meant that students had experienced a drop in GPA of at least .30 to .50. Of the data sets that revealed transfer shock, thirty-four showed recovery while four showed none. Hills associated the drop in GPA with difficulty adjusting to a new institution and observed that this period of adjustment was typically followed by a GPA recovery as transfer students progressed and acclimated to the institution. However, he also found that the degree of recovery varied, as some transfer students never fully recovered their incoming GPA. Furthermore, he found that out of 33 sets of data, 22 indicated that traditional students outperformed transfer students, while four data sets found the opposite, and seven found that both groups performed equally as well. Out of 21 data sets, 19 showed traditional students graduated sooner or in greater proportions than transfer students, while two showed the contrary.

Overall, the major findings of Hills (1965) systematic review revealed the following: (1) transfer students experienced transfer shock, which was usually followed by some degree of recovery; (2) transfer students were less likely to persist to graduation or were delayed to graduate; (3) transfer students in the sciences had the most difficulty; and (4) transfer

students faced the most difficulty at major state universities. Hills surmised transfer shock to be a result of more generous grades or lower academic standards at the community college level. Additionally, he speculated delayed graduation to be a result of having to re-take lower-division coursework. Ultimately, Hills concluded that if given a choice, students should opt to start at a four-year institution versus a community college. Conclusions from this work led to numerous comparative studies between traditional students and transfer students. These studies continued to measure transfer shock and *transfer ecstasy* (i.e., an increase in GPA) (Nickens, 1972) as indicated through student GPA since it was determined to be the strongest predictor of transfer students' persistence at the time (Glass, & Harrington, 2002; Rhine et al., 2000).

Diaz (1992) also conducted a meta-analysis of 62 of the most prominent studies (64 years worth of studies) that aimed to determine the magnitude of transfer shock or transfer ecstasy as indicated by GPA change (i.e., the difference between a students' incoming GPA and the GPA obtained at the end of the first semester at the receiving institution). The intent of this analysis was to determine whether transfer students were "academically good students" or whether they were to be considered "risks" for receiving institutions. The results of this analysis indicated transfer shock among 79 percent of studies; however, the magnitude of grade change was one half of a grade point or less. Of the studies that reported transfer shock, 67 percent showed recovery within the first academic year. Thirty-four percent of these studies showed full recovery from transfer shock, while another 34 percent showed nearly complete recovery, and 32 percent showed partial recovery. Diaz (1992) concluded that overall transfer students had high persistence rates and may have been stereotypically deemed risky when in actuality most succeed to graduation.

Similarly, Carlan and Byxbe (2000) found that transfer students' grades were three-tenths of a point less during their first semester at a receiving four-year institution than their cumulative GPAs at the community college, however, most was able to recover the following semester. It is important to note, however, that both traditional and transfer student samples consisted of primarily White females – 74.3 and 89.9 percent, respectively. The findings from this study detected no significant GPA differences between cumulative upper division GPAs of transfer and traditional students. While race was not a significant predictor of GPA, White students tended to academically outperform minority students; however, traditional minority students actually received lower GPAs than minority transfer students. Carlan and Byxbe (2000) hypothesized that minority students may have encountered a more nurturing community college environment, which may have helped strengthened these students' academic self-confidence – thus, setting them up for long-term academic success at the receiving four-year institution.

Carlan and Byxbe (2000) also found that transfer students in business and science majors tended to experience the most transfer shock and earned lower GPAs in upper division coursework compared to their traditional student counterparts. A more recent study also found higher attrition among STEM majors – 33.9 percent of transfer students switched from a STEM to a non-STEM major once they entered the four-year institution (Chen, 2013). While numerous factors may contribute to high attrition rates in STEM fields, one factor may be the difference in rigor between community college and four-year institution STEM coursework. Another contributing factor may be the transferability of units of lower-division STEM coursework completed at the community college.

Returning to transfer shock, more comparative studies followed seeking to measure the phenomenon through GPA; however, these studies tended to contradict each other. For instance, some studies found transfer students outperformed traditional students (Bogart & Price, 1993; Glass & Harrington, 2002; Evans, 1993), whereas other studies found the opposite (Carlan & Byxbe, 2000). Eventually scholars acknowledged that transfer shock occurred and concluded that the majority of transfer students who experienced the phenomenon were able to recover and do as well, or better, than traditional student counterparts and graduated at the same pace and rate as them (Alpern, 2000; Diaz, 1992; Glass & Harrington, 2002).

Transfer Shock Redefined

Researchers then began to focus on the complexity of the transfer process and four-year institutional transition. In particular, researchers wanted to understand the challenges community college transfer students encountered through qualitative means (e.g., interviews, focus groups). These studies provided an in-depth understanding of the post-transfer experience and uncovered numerous academic, social, and institutional challenges. The first set of challenges first-year transfer students encounter can be attributed to institutional differences between community colleges and four-year institutions (e.g., size, location, academic rigor), which in turn affects academic performance and adjustment (Laanan, 2001). For example, some four-year institutions tend to operate on shorter academic terms while community colleges tend to operate on longer terms (i.e., quarter versus semester system) (Laanan, 2001). Thus, transfer students have to quickly adjust to a more rigorous course load in a shorter period of time (Bragg, 2001; Eggleston & Laanan, 2001). Additionally, community colleges tend to offer smaller classes that enable students to interact on a one-to-

one basis with instructors, which allows for more individualized attention (Bryant, 2001; Crisp & Mina, 2012; Davies & Casey, 1999). In contrast, transfer students have been found to interact less with faculty and participate in fewer educationally enriching activities at four-year institutions (Kuh et al., 2006; Roberts & McNeese, 2010). Classes at four-year institutions tend to be held in large lecture halls, which limit the opportunities for interaction with faculty and peers. Thus, first-year transfer students may feel intimidated in these types of settings – stifling student participation and interaction (Rhine et al., 2000; Townsend & Wilson, 2006).

Also, faculties at four-year institutions have been perceived as dismissive and unresponsive when approached for help on course content and assignments (Townsend, 1995; Townsend & Wilson, 2006). Townsend (1995) observed that faculty attitudes and behaviors at four-year institutions might stem from the belief that it is a students' responsibility to address their academic deficiencies whereas community college instructors generally focused more on developing a students' academic abilities. A contributing factor to the disparity in faculty-student expectations may also be that transfer students do not fully understand the difference between applied versus research-oriented institutions, in terms of mission and purpose. For instance, faculties at research universities earn promotion and tenure for their research, publications, and grants as oppose to teaching (Rhine et al., 2000; Townsend & Wilson, 2006). Thus, both community colleges and four-year institutions need to do more to properly inform prospective transfer students of the receiving institutions' mission and how the orientation of an institution will shape their overall college experience. Providing first-year programs that would inform transfer students of institutional differences would better prepare students and help them adjust their goals and expectations.

Community colleges also tend to be commuter institutions whereas four-year institutions tend to be residential. Therefore, when transfer students are accepted to four-year institutions they are most likely moving away from home for the first time, which presents numerous challenges in terms of social adjustment. Transfer students have to leave family, friends, and their communities to live in a completely new environment, which can cause psychological distress, feelings of loneliness, and anxiety (Bryant, 2001). This stress is only exacerbated by the fact that most institutions do not provide transfer students with first-year program interventions, which could provide first-year transfer students with opportunities to meet transfer student peers and learn about student support services on campus (Townsend, 2008). It is important to provide transfer students opportunities to find one another since transfer students who have attempted to establish social connections with traditional students have perceived these students as disinterested and unwilling to expand their already established social circles (Townsend & Wilson, 2006). Therefore, failure to provide first-year transfer students with opportunities to establish social connections with their peers makes these students more vulnerable to culture shock, homesickness, and feelings of isolation and/or anonymity especially at large four-year institutions (Davies & Casey, 1999; Laanan, 1996; Laanan, 2007; Townsend & Wilson, 2006). Providing support for incoming transfer students would ameliorate the challenges these students are experiencing.

Potential Transfer Student Program Interventions

While there is a dearth of information on transfer student program interventions since many institutions do not provide them, the aforementioned studies suggest that providing appropriate interventions both during the pre- and post transfer process might reduce the extent to which first-year transfer students experience transfer shock. Literature on the post-

transfer experience does include recommendations for possible interventions. For example, Laanan (1996) recommended that community colleges offer workshops to inform students of what to expect at different types of four-year institutions and suggested these workshops include a panel of transfer students who can share their personal experience on the academic and social challenges they encountered. Another suggestion was for community colleges to establish connections with four-year institutions that are the most popular with aspiring transfer students (i.e., "feeder" four-year institutions). These connections or collaborations might provide pre-transfer students exposure to the institution and opportunities to meet with administrators and faculty and/or allow students to experience the classroom environment even before transfer.

Cejda (1994) found that when four-year faculty collaborated with community colleges, transfer shock was reduced among students since it allowed for an easier transition. Similarly, Rhine et al. (2000) recommended that pre-transfer students be introduced to the receiving institutions' campus resources, campus life, departments and counseling services before they arrive at the receiving institution. Encouraging students to prepare for the transition to a four-year institution would allow students to get a sense of campus life and ensure a more seamless transition (Flaga, 2006; Laanan, 1996; Rhine et al., 2000).

Post-transfer efforts should include transfer student orientation seminars, which should be offered during the first academic term to introduce students to academic and social resources, connect students with their peers, and establish familiarity with the institution (Flaga, 2000). It may also be beneficial to pair first-year transfer students with second-year transfer student peer mentors to help students get acclimated (Townsend, 2008). An option for students to live in transfer student housing should also be provided, which would provide

students with opportunities to immediately connect with peers. Research has found that *living learning communities* positively contribute to a student's development and encourage engagement (Kuh et al., 2006; Rhine et al., 2000; Townsend, 2008; Zhao & Kuh, 2004). Additionally, four-year institutions should provide a space on campus for a transfer student center where students can meet, seek information, and gather for socials given that social integration appears to have a stronger influence on persistence for transfer students. Programmatic interventions such as these would improve the academic and social adjustment of transfer students, create opportunities for involvement and engagement among transfer students and increase these students' overall satisfaction with receiving institutions.

The Present Study

The literature presented here shows the heterogeneity of community college students and supports the notion that community college students who are the most prepared throughout the transfer process experienced minimal, or no transfer shock – as broadly defined to include institutional, academic and social challenges. Unfortunately, most transfer students are unprepared for the post-transfer experience and therefore, encounter numerous challenges acclimating into the receiving institution. In terms of what matters for completion, research has shown the importance of social integration at the receiving four-year institution to be more important than academic integration. Given the numerous challenges transfer students encounter at four-year institutions, it is of utmost importance that receiving institutions provide these students with first-year program interventions that can help transfer students adjust academically and socially, which would facilitate integration and ensure timely completion.

This study sought to identify which types of transfer students were more likely to struggle in terms of their academic and social adjustment and whether participation in a Transfer Student Success Course, specifically designed for first-year transfer students, ameliorated their overall adjustment. Therefore, this study used a latent class analysis (LCA) to examine whether meaningful subgroups of transfer students emerged based on their response patterns on academic and social adjustment items from a newly designed survey, the Transfer Student Transition Survey (TSTS). Three covariates (i.e., race and ethnicity, course participation, and major) were added to the LCA to examine the characteristics of each of the subgroups. Additionally, the difference between the participants' end-of-the quarter GPA at the four-year institution and their incoming GPA (i.e., drop in GPA) was added into the analysis as a distal outcome. The research questions for this study are demonstrated below in Table 1.

Table 1

Research Questions and Measures to Examine Transfer Student Subgroups based on Academic Adjustment and Social Adjustment Variables

Questions	Measures	Variables	Analysis
Do meaningful subgroups of transfer students emerge with respect to their academic and social adjustment?	Transfer Student Transition Survey	Academic and social adjustment constructs	Latent class analysis
Do subgroups differ on race and ethnicity, course participation, and major?	Transfer Student Transition Survey	Academic and social adjustment constructs with ethnicity, course participation, and major covariates	Latent class analysis with covariates
Do subgroups differ by drop in GPA?	Transfer Student Transition Survey	Difference between self-reported incoming community college GPA and first quarter self-reported GPA at four-year university	Latent class analysis with covariates and distal outcome

Chapter 3

Methods

Institutional Demographics

The participants for this study were recruited from a large selective public four-year research university in California. The university has three undergraduate colleges: letters and science; engineering; and creative studies. Approximately 75 percent of students live on-campus in university-owned housing, or in private housing located in a neighborhood adjacent to the university. According to the 2015-16 campus profile, the racial and ethnic composition of the undergraduate student population was as follows: American Indian/Alaskan (*n* = 215; 1%); Black/African American (*n* = 869; 5%); Chicano/Latino (*n* = 5,200; 27%); Asian/Pacific Islander (*n* = 5,319; 28%); White (*n* = 7,272; 38%); Unknown (*n*= 273; 1%); and Other (*n* = 4; 0%). The university was recently recognized as a Hispanic-Serving Institution (HSI) in 2015. HSIs are defined as colleges or universities in which Hispanic the total undergraduate and graduate student enrollment comprises at least 25 percent. The total domestic student enrollment was 19,152 and the international student enrollment was 1,455 for a total of 20,607 undergraduate students. Of the 20,607 undergraduates, 42 percent identified as first-generation college students. Ninety-two percent of newly enrolled freshmen return for their second year. The median time for freshmen to graduate was four years. Women made up 53 percent of the undergraduate population and men made up 47 percent. The average age for undergraduates was 21. The fall 2015 cohort consisted of 4,473 freshmen and 1,541 transfer students.

Transfer Student Demographics. Of the transfer students who enrolled for the fall 2015 academic term, 94 percent were from a California community college. Forty-five

percent of the newly enrolled transfer students identified as first-generation college students. In terms of retention, 91 percent returned for their second year. Fifty-three percent reported their parent(s) education level (i.e., highest level of either mother or father) at "Four-Year College Graduate" or "Post-Graduate Studies." Of the 80 percent who reported information on their parent(s) income, 40 percent reported parent income at $100,000 or more (the median income was $75,000).

Approximately 70 percent of transfer students graduated within two years and 86 percent graduated within three years. The ethnic composition for incoming domestic transfer students was as follows: American Indian/Alaskan (*n* = 14; 1%); Black/African American (*n* = 73; 5%); Chicano/Latino (*n* = 354; 27%); Asian/East Indian/Pakistani (*n* = 246; 18%); Filipino/Pacific Islander (*n* = 49; 4%); White (*n* = 593; 44%); and Unknown (*n*= 11; 1%). About 13 percent of transfer students were international students. The majority of the fall 2015 transfer students (98 percent) were admitted into the college of letters and science. Transfer students chose to enroll in the following majors: Biological Sciences (*n* = 92; 6%); Economics (*n* = 368; 24%); Communications (*n* = 204; 13%); Engineering/Computer Science (*n* = 32; 2%); Fine Arts (*n* = 78; 5%); History (*n* = 25; 2%); Interdisciplinary (*n* = 102; 7%); Language and Letters (*n* = 55; 4%); Physical Sciences and Math (*n* = 183; 12%); Psychology (*n* = 191; 12%); and Other Social Sciences (*n* = 211; 14%). The average GPA for enrolled transfer students was 3.44. The average age for transfer students was 22.4 years old.

Participants

The participants for this study completed a newly developed survey, the Transfer Student Transition Survey (TSTS), which was designed to understand the experiences of first-year community college transfer students at a research-intensive university (see

Appendix A for the 2012-13 survey, Appendix B for the 2013-14 survey, and Appendix C for the 2014-15 survey). Three waves of surveys were distributed and collected for this study. The first wave was distributed to approximately 1,651 transfer students from the 2012-13 transfer student cohort. A total of 424 participants, or 25.7 percent, completed a survey. The second wave was distributed to approximately 1,475 transfer students from the 2013-14 transfer student cohort. A total of 276 participants, or 18.7 percent, completed a survey. The final wave was distributed to approximately 1,592 transfer students from the 2014-15 transfer student cohort and a total of 154 participants, or 9.7 percent, completed the survey. The initial sample size was $N = 854$, or approximately 18 percent.

Data screening of each survey wave revealed duplicate surveys, which were verified by the unique identification number participants were prompted to create in order to begin the survey and ensure anonymity. Eighteen participants had submitted two surveys for Wave I; however, Wave II and III each had three participants who filled out more than one survey. The responses of these surveys were thoroughly examined for completeness and the partially filled out repeated surveys were deleted. Therefore, a total of 24 duplicate surveys were removed. Next, participants who attended a community college out-of-state were removed from this study ($n = 8$). Additionally, a total of 12 blank surveys and seven surveys from horizontal transfer students (i.e., students who transferred from a four-year institution) were also removed from further analyses. Therefore, the total sample size for this study after data screening was $N = 803$.

The racial and ethnic composition of these participants follows: African American ($n = 12$; 1.5%); Asian/Pacific Islander ($n = 128$; 15.9%); Mexican/Latino/a ($n = 151$; 18.8%); Middle Eastern ($n = 26$; 3.2%); Native American/American Indian ($n = 3$; 0.4%);

White/Caucasian (*n* = 426; 53.1%); and Other: (*n* = 57; 7.1%) (see Table 2). Women consisted of 59.7 percent of the sample (*n* = 479) and men constituted 40.3 percent (*n* = 324) (see Table 2). The following descriptive statistics represent the age of the participants for each survey wave: Wave I (*M* = 22.23, *SD* = 3.87), Wave II (*M* = 21.81, *SD* = 2.17), and for Wave III (*M* = 22.73, *SD* = 4.57) (see Table 3).

Participants were instructed to select a major from a drop-down menu, which included all the majors offered by the university. After data screening, there was a total of 768 participants who had provided their incoming major as listed on their initial application to the university (see Table 4). For this study, majors were grouped into three categories: economics, social sciences and humanities, and STEM fields. Economics was designated its own category because it is a related field to business, which is a major not offered at this university. Additionally, incoming transfer students are only admitted as pre-majors and must pass two core courses (i.e., "weeder classes") or they are forced to find another major – a policy some transfer students resent as there are no comparable majors at the university (Fematt, 2013). There were 141 (18.4%) participants who indicated having a major in economics (i.e., economics, economics and accounting, and economics and math). There were a total of 183 (23.8%) participants who indicated a major in a STEM field. The majority of the participants, however, indicated a major in social sciences or in humanities (*n* = 440; 57.3%). Four participants (0.5%) indicated that their major was not listed on the drop-down menu but were still included in the final analysis and were grouped into the social science and humanities major classification.

A total of 663 participants provided information on whether they had enrolled in the Transfer Student Success Course: Wave I had 80 course participants and 211 non-course

participants (n = 292); Wave II had 87 course participants and 137 non-course participants (n = 224); and Wave III had 34 course participants and 114 non-course participants (n = 148). Approximately, 70 percent (n = 462) of the participants had not taken the Transfer Student Success Course and about 30 percent (n = 201) had enrolled in the course.

Transfer Student Success Course

The Transfer Student Success Course was developed using the prominent theoretical frameworks discussed earlier in this study and research on the post-transfer experience. Initially, the university only offered a first-year freshmen experience course, which university administrators would recommend to incoming transfer students. Course instructors began to notice a decline in transfer student course completion and enrollment, which is how they decided to develop a course specifically tailored to address the needs of first-year transfer students. The Transfer Student Success Course is a 4-unit upper division class, which meets once a week for ten weeks in a large lecture hall. The course is typically offered winter quarter and has a maximum enrollment capacity of 200 students.

The primary focus of the Transfer Student Success Course is to orient transfer students to the norms, culture, mission and purpose of the research university. The course covers academic, social, and the personal issues students encounter transitioning to the university. Throughout the course students are encouraged to get involved in research opportunities and are introduced to the numerous resources on campus. Each week, guest speakers are invited to cover topics relevant to higher education, research, and overall student success. For example, students are provided with study tips and advice for managing their coursework in a quarter system and the writing assignments for the class are designed to encourage and foster critical thinking skills. For example, some writing assignments include

preparing a cover letter and resume, proposing a research project to a faculty member, or writing a research proposal.

Students must also participate in experiential activities (i.e., attend workshops, campus events, and/or community events), which encourage students to familiarize themselves with their new environment, the campus, and student life (i.e., clubs and organizations). Maintaining a balanced and healthy lifestyle are also topics of discussion. For example, discussion sections are used as "safe spaces" where students can share the challenges they have encountered at the university. The goal of the discussion section is to provide students with mentorship and foster an environment for students to connect with their transfer student peers. Ultimately, the Transfer Student Success Course creates a community for transfer students and helps foster a sense of belonging among these students.

The Associate Dean of Students is the assigned instructor for this course. Students attend smaller discussion sections after lecture. The lecture and discussion section are each an hour and fifteen minutes long. Some of the discussion sections are grouped according to a theme. For example, students interested in acquiring leadership skills can choose to enroll in the "Leadership" discussion section. Past sections have also included a "Veterans" section, an "International Students" section, and a discussion section for transfer students living in the same residence halls (i.e., living learning community).

Each section is assigned a "Discussion Leader" and "Co-Leader." Discussion leaders are campus professionals or staff who volunteer from various departments (e.g., Student Affairs, Health and Wellness, Housing, Admissions etc.). Discussion leaders are knowledgeable about the campus and student life. Co-leaders are either second-year transfer students (i.e., seniors) who had previously taken the Transfer Student Success Course as first-

year students or upper-class juniors and seniors. In addition to attending lecture and co-instructing the discussion section, co-leaders must enroll in a 4-unit course, *Practicum in Teaching in Higher Education*, to receive credit as course assistants for the Transfer Student Success Course. Co-leaders learn student developmental theories, pedagogical techniques, how to create lesson plans, grade assignments, and receive general support with any issues that may arise in their respective sections. Together, discussion leaders and co-leaders serve as mentors to first-year transfer students and are responsible for managing their section. The entire teaching team meets weekly to discuss the assignments, norm on grading, and provide updates on their sections.

Finally, the course instructor has students answer a course evaluation at two different time points during the course. The feedback students provide is used to determine the extent to which the course assignments, activities, and lectures were beneficial to the students' overall experience. Student suggestions are incorporated into the following years' course curriculum. Thus, course participants shape future iterations of the Transfer Student Success Course. Incorporating student feedback allows the course to stay relevant to the concerns of the transfer student population at this university.

Table 2

Gender, Race and Ethnicity for Each Wave of the Transfer Student Transition Survey (TSTS) (*N* = 803)

	Wave I		Wave II		Wave III		Totals	
	n	%	*n*	%	*n*	%	*N*	%
Gender								
Female	242	57.8	147	62.6	90	58.4	479	59.7
Male	175	41.8	85	36.2	64	41.6	324	40.3
Total	417	100.0	232	100.0	154	100.0	803	100.0
Ethnicity								
African-American/Black	7	1.7	2	0.9	3	1.9	12	1.5
Asian/Pacific Islander	65	15.6	36	15.5	27	17.5	128	15.9
Mexican/Latino/a	66	15.8	55	23.7	30	19.5	151	18.8
Middle Eastern	15	3.6	6	2.6	5	3.2	26	3.2
Native/Indian American	1	0.2	1	0.4	1	0.6	3	0.4
White/Caucasian	234	56.1	119	51.3	73	47.4	426	53.1
Other	29	7.0	13	5.6	15	10.7	57	7.1
Total	417	100.0	232	100.0	154	100.0	803	100.0

Table 3

Participants' Age for Wave I (M = 22.23, SD = 3.87), Wave II (M = 21.81, SD = 2.17), Wave III (M = 22.73, SD = 4.57)

Age	Wave I		Wave II		Wave III		Totals	
	n	%	*n*	%	*n*	%	*N*	%
18	3	0.7	1	0.4	-	-	4	0.5
19	5	1.2	1	0.4	3	1.9	9	1.1
20	99	23.7	51	22.0	32	20.8	182	22.7
21	150	36.0	72	31.0	45	29.0	267	33.3
22	67	16.1	57	24.6	36	23.4	160	19.9
23	22	5.3	26	11.2	13	8.4	61	7.6
24	16	3.8	7	3.0	1	0.6	24	3.0
25	13	3.1	6	2.6	6	3.9	25	3.1
26	13	3.1	1	0.4	2	1.3	16	2.0
27	6	1.4	3	1.3	2	1.3	11	1.4
28	7	1.7	3	1.3	1	0.6	11	1.4
29	-	-	2	0.9	3	1.9	5	0.6
30-39	10	2.2	2	0.9	7	4.4	19	2.2
40-49	4	0.9	-	-	3	1.8	7	0.7
50-59	2	0.4	-	-	-	-	2	0.2
Totals	417	100.0	232	100.0	154	100.0	803	100.0

Table 4

Incoming Majors as Indicated on the University Application (*n* = 768)

Social Sciences & Humanities	*n*	STEM-Related	*n*	Economics	*n*
Anthropology	29	Actuarial Science	5	Economics	50
Art	6	Aquatic Biology	2	Economics and Accounting	87
Art History	5	Biochemistry	8	Economics/Mathematics	4
Chicano & Chicana Studies	1	Biological Sciences	14		
Classics	3	Biology	13		
Communication	126	Biopsychology	13		
Comparative Literature	2	Cell & Development Biology	2		
Dance	1	Chemical Engineering	7		
English	19	Chemistry	12		
Film & Media Studies	8	Chemistry and Biochemistry	4		
French	1	Computer Engineering	2		
Global & International Studies	17	Computer Science	4		
History	16	Earth Science	6		
History of Public Policy	2	Ecology and Evolution	1		
Linguistics	4	Electrical Engineering	4		
Literature	3	Environmental Studies	26		
Music	2	Geography	10		
Philosophy	3	Geological Sciences and Geophysics	1		
Political Science	21	Mathematical Sciences	7		
Psychology	117	Mathematics	7		
Religious Studies	2	Mechanical Engineering	4		
Sociology	52	Microbiology	5		
Spanish	1	Pharmacology	5		

Theater	3	Physics	10		
		Physiology	5		
Major Not Listed	4	Statistical Sciences	2		
		Zoology	4		
Total	444	Total	183	Total	141

Procedures

A recruitment email with a link to the online survey was distributed to three transfer student cohorts (i.e., 2012-13, 2013-14, and 2014-15) through the Office of Student Affairs. The embedded survey link directed participants to the survey consent form. The consent form explained the purpose of the study and informed participants of their rights. Participants were informed that the survey was voluntary and they had the option of opting out at any time by closing their browser. Participants then had to select the "Yes, I want to participate in this survey" option in order to begin the survey. No incentives were offered to participate in this study. The survey was designed to be anonymous but the participants were required to create a unique identification number in order to identify participants who may have taken the survey multiple times. To provide extra security, responses were collected using Secure Socket Layer (SSL) encryption, which ensured that no one but the principal investigator could access participant information. Furthermore, no IP addresses were collected as part of this study to ensure anonymity.

All three of the survey waves were distributed in the first year of the participants' enrollment at the university. Since course participation was one of the variables of interest in this study, it was important to administer the survey after participants had completed the course as response patterns from course participants may differ from non-enrolled counterparts. Therefore, the first two survey waves were distributed towards the end of the second academic term (i.e., winter quarter), which was term when the Transfer Student Success Course was offered. However, during the 2014-15 academic year (Wave III), the Transfer Student Success Course was offered during the first term of the academic year (i.e., fall 2014), which was followed by a three-week holiday break. In order to avoid a low

response rate for the 2014-15 data collection point, due to students focusing on their exams and the holiday break, the survey was distributed at the start of the winter 2015 quarter. A description of the Transfer Student Success Course is included in Appendix D. Each survey remained open for three weeks and included one survey reminder, which was also sent through the Office of Student Affairs.

The Transfer Student Transition Survey (TSTS)

The Transfer Student Transition Survey (TSTS) was a survey developed specifically for this study. The hypothesized constructs and survey items were developed after reviewing the literature on both the post-transfer experience and theoretical frameworks related to student success (e.g., student integration, student engagement, and student persistence). The hypothesized constructs for the survey were: *Previous Level of Community College Engagement, Knowledge of Four-Year Campus Resources, Anticipated Level of Four-Year Campus Engagement, Academic Adjustment* and *Social Adjustment.* However, only items from the *Academic Adjustment* and *Social Adjustment* constructs were included for this study. These items were included in the survey based on the literature identifying the academic and social challenges first-year community college transfer students encountered at four-year institutions. The survey also included numerous questions designed to gather descriptive data on the participants in the study (e.g., incoming major, GPA, time-to-transfer).

Data Analysis Plan

Preliminary data screening and analyses were conducted using SPSS 20.0 (IBM Corp., 2011). As previously stated, the participant identification numbers were checked to identify participants who may have submitted more than one survey. Repeated surveys were

examined for completion and the partially filled out repeated surveys were excluded from further analyses. Also, horizontal transfer students (i.e., transfer students who transferred from a four-year institution) were removed from this study along with participants who attended a community college out-of-state.

Following data screening, the three data sets were merged into one dataset to determine whether there were any statistically significant differences between the participants on the academic and social adjustment items. Once the surveys were merged into one dataset a series of one-way ANOVA tests were conducted. An adjusted alpha level was calculated using the Bonferroni correction method. The Bonferroni correction is an adjustment made to the alpha level when multiple tests are conducted simultaneously on the same dataset and reduces the chances of Type I error (Warner, 2008). Additionally, a series of chi-square tests were conducted to examine whether statistically significant differences emerged on the categorical variables of interest (i.e., race and ethnicity, course participation, and major).

Item Selection for the Latent Class Analysis. A confirmatory factor analysis (CFA) was conducted using M*plus* 7.3 (Muthén & Muthén, 1998-2012) to identify the items with the highest loadings on the two hypothesized constructs of interest, *Academic Adjustment* and *Social Adjustment*. Gallagher and Brown (2013) recommend retaining items with factors loadings above .40. For this study, items with factor loadings above .50 were retained. However, face validity and theoretical considerations were also used to determine the final selection of the items. Therefore, if an item with a low loading (below the .50 cutoff) was deemed important based on the literature, the item was retained for the latent class analysis.

This study used full information maximum likelihood estimation, which assumes missing data is missing at random.

The hypothesized construct, *Academic Adjustment*, consisted of the following seven items: (1) I am comfortable approaching professors for advice/help; (2) I attend professor office hours; (3) I have adjusted to the quarter system; (4) I attend TA office hours; (5) I find it difficult/overwhelming to ask questions in lectures; (6) I worry about balancing work with school; and (7) I find it difficult/overwhelming to ask questions in TA discussion sections. All of the items were rated on a 4-point Likert scale (1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *somewhat agree*, 4 = *strongly agree*) with higher values representing positive connotations (i.e., 3 = *somewhat agree*, and 4 = *strongly agree*). Items with negative connotations (e.g., *I worry about balancing work with school*) were reverse-coded to facilitate the interpretation of the results. Therefore, three of the items were reverse-coded to reflect its corresponding connotation. For example, if a participant selected *4 = strongly agree* on the statement "I worry about balancing work with school," the item was re-coded as *1 = strongly agree*, to denote a negative connotation. This ensured all lower scores were associated with negative connotations.

The hypothesized construct, *Social Adjustment*, consisted of the following eight items: (1) I have established more than one network of friends; (2) I have had an easy transition into [this university]; (3) I find the environment at [this university] to be welcoming; (4) I am having difficulty making new friends; (5) I often feel lonely; (6) I am having difficulty meeting other transfer students; (7) I can relate to the people around me; and (8) I often feel isolated. All of the items were rated on a 4-point Likert scale (1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *somewhat agree*, and 4 = *strongly agree*) with higher

values representing positive connotations (i.e., 3 = *somewhat agree*, and 4 = *strongly agree*). Four items were reverse-coded to reflect the appropriate and corresponding connotation. For example, if a participant selected *4 = strongly agree* on the statement "I often feel lonely," the item was coded as *1 = strongly agree*, which denoted a negative connotation. This ensured all lower scores were associated with negative connotations.

Latent Class Analysis. Latent class analysis (LCA) is a cross-sectional analysis and mixture modeling technique that is used when there is an a priori assumption that the population of interest is heterogeneous and made up of a finite number of subpopulations or latent classes (Masyn, 2013; Nylund, Asparouhov, & Muthén, 2007). In an unconditional LCA the subpopulations or latent classes are identified by differences in response patterns. According to Masyn (2013), "…the response patterns for individuals within each class are more similar than response patterns across classes…classes are then characterized not by exact response patterns but by response 'profiles' or typologies described by the relative frequencies of item endorsements" (p. 556). An LCA with binary variables was used in this study to determine whether any meaningful subgroups (or latent classes) of transfer students emerged based on their survey response patterns to the *Academic Adjustment* and *Social Adjustment* items.

An LCA can be conducted with binary, nominal, and/or ordinal variables. For this study, the indicators with the highest loadings on the *Academic Adjustment* and *Social Adjustment* constructs were transformed into binary variables. Participant responses that denoted a negative connotation (i.e., *1 = strongly disagree* and *2 = somewhat disagree*) were assigned a value of 0, and items with a positive connotation (i.e., *3 = somewhat agree* and *4 = strongly agree*) were assigned a value of 1. In other words, responses that indicated lower

academic and social adjustment were coded as 0, while responses that indicated higher academic and social adjustment were coded as 1. Five indicators were reverse-coded to reflect the appropriate and corresponding connotation. For example, if a participant selected *4 = strongly agree* on the statement "I often feel lonely," the item was coded as a 0, which denoted a negative connotation. This ensured all lower scores were associated with negative connotations. The LCA was conducted using M*plus* 7.3 (Muthén & Muthén, 1998-2012). This analysis used full information robust maximum likelihood estimation, which assumes missing data is missing at random. Thus, participants who have data on at least one of the observed variables were included in the analysis.

LCA models are conducted in a series of iterative steps starting with the specification of a 1-class model and the number of latent classes are increased by one and compared to the previous model until there is no improvement to the model or there is a high level of non-convergence, or until the model no longer makes substantive sense. Masyn (2013) recommends choosing the model with the fewest number of latent classes that is both statistically supported and is theoretically meaningful. Thus, to find the best fitting model, researchers must consider the model information criteria, fit indices, and the model's usefulness (Nylund, 2002; Nylund et al., 2007). For instance, the Bayesian Information Criterion (BIC) and the adjusted BIC (ABIC) should be examined. Lower values on these indices are preferred (Nylund et al., 2007). Under certain conditions, the ABIC may be a better indicator for choosing the preferred number of latent classes (Nylund et al., 2007). Additionally, the *p*-values of the Lo-Mendell-Rubin Likelihood Ratio Test (LMR) and the Bootstrap Likelihood Ratio Test (BLRT) should also be evaluated. The LMR and BLRT provide a *p*-value, which if non-significant indicates that the previous model (with one less

class) is preferred to the present model (Nylund et al., 2007). The Bayes Factor (BF) is a pairwise comparison of relative fit between adjacent models and can also be used to determine the preferred number of latent classes. A BF value between 1-3 is considered weak evidence, a value of 3-10 is considered moderate evidence, and a BF value greater than 10 is considered strong evidence for the model with one less class (Masyn, 2013). Furthermore, the best-fitting model should have a correct model probability (cmP) value of 1.0 or close to 1.0.

The model's entropy value should also be evaluated. The entropy value is not a fit statistic, it is a descriptive measure that provides information on how well participants have been classified into their latent classes. An entropy value of 1 indicates perfect classification of participants to latent classes while entropy values greater than .80 indicate a strong classification (Clark & Muthén, 2009; Ram & Grimm, 2009). Researchers should also examine the item probability plots. These plots provide a visual representation of the item response patterns for each latent class and are used as a way of evaluating the measurement characteristics of the model (similar to examining the factor loadings in a factor analysis). Masyn (2013) an item probability endorsement of .30 is considered a low probability of endorsement whereas an item probability endorsement of .70 would be considered a high probability of endorsement.

Lastly, the model's usefulness must also be considered through substantive interpretation. For instance, under certain conditions the fit indices may suggest the best fitting model to have a particular number of classes, however, it may not make theoretical sense to choose the suggested model. Thus, researchers must choose the best fitting model according to both theory and fit indices (Muthén, 2003).

Latent Class Analysis with Covariates and Distal Outcome. After identifying the best-fitting unconditional model, auxiliary variables (or covariates) were added into the model. Recent advancements in latent class modeling advocate for the use of a 3-step approach to add covariates and distal outcomes into a model (Asparouhov, & Muthén, 2014). Currently, however, the "BCH" (Bolck, Croon, & Hagenaars, 2004) method is the preferred 3-step approach (Asparouhov, & Muthén, 2014; Bakk, Tekle, & Vermunt, 2013; Bakk & Vermunt, 2016; Vermunt, 2010). This method allows for the covariates and the distal outcome to be added simultaneously and avoids shifts to the latent classes (Asparouhov, & Muthén, 2015). There are three analyses or steps involved in the BCH method; however, only the final results of the BCH method will be presented for the purpose of this study.

Covariates are predictors, or independent variables, that allow a better understanding of the participant characteristics that make up the emergent latent classes (Nylund-Gibson, Grimm, Quirk, & Furlong, 2014). The three covariates added into the model were student variables of race and ethnicity, course participation, and undergraduate declared major. White/Caucasian participants were the reference group for the covariate race and ethnicity. Therefore, participants who identified as "Mexican/Latino/a," "Asian/Pacific Islander", and as "Other" (i.e., African American, Native/Indian American, Middle Eastern, Other) were compared to the reference group. Social science and humanities majors were the reference group for the covariate "major". Thus, STEM and Economics majors were compared to the social science and humanities majors. Lastly, course participants were the reference group for the covariate, course participation (1 = enrolled in the Transfer Student Success Course, 0 = did not enroll).

The BCH method provides class-specific means for the distal outcome across the latent classes. In order to calculate the distal outcome, drop in GPA, participants were prompted to enter their incoming community college GPA (as was indicated on their application to the university) and the GPA they received at the end of their first quarter at the university. Since community college transfer students tend to enter the university with high GPA's, which tend to drop at the end of their first quarter at a four-year institution, GPA was calculated by subtracting the GPA participants received at the end of the first quarter at the university with the participants' incoming community college GPA.

Chapter 4

Results

This chapter is divided into subsections, which correspond with the order of the methodological procedures described in the previous chapter. Given each survey wave had to be individually examined the first section describes the participant data screening procedures for each wave. The second section provides the results for the one-way ANOVA and chi-square tests, which were conducted to determine whether there were significant differences between the participants in each wave. The next section shows the results of the CFA, which was conducted for the selection of the academic and social adjustment items to be used in the LCA. The results for the unconditional LCA follow and the chapter concludes with the results for the conditional LCA model, which included the covariates and distal outcome.

Descriptive Statistics

After each dataset was screened, all three datasets were merged into one dataset in preparation for the one-way ANOVA tests, which were conducted to determine if any statistically significant differences emerged between participants across the three survey waves. The descriptive statistics for all the academic and social adjustment items are presented below in Table 5. Two ANOVA tests were conducted, the first ANOVA included all the academic adjustment items and the second ANOVA included all the social adjustment items. To reduce the chances of Type I error, the Bonferroni method was used to determine the appropriate adjusted alpha level for the seven academic adjustment items, which was, $p = 0.007$. A second ANOVA test was conducted on the eight social adjustment items using the Bonferroni corrected alpha level, $p = 0.006$. Both ANOVA tests revealed no statistically significant differences between participants on these items. The Levene tests of homogeneity

for each ANOVA were examined and were both non-significant. Thus, the assumption of homogeneity had not been violated.

Next, a series of chi-square tests were conducted to examine whether statistically significant differences emerged in respect to race and ethnicity, gender, and course participation across the three survey waves. The chi-square test for race and ethnicity was non-significant. Similarly, the chi-square test for gender was also non-significant. The chi-square test for course participation across the three survey waves was statistically significant: $\chi^2(2) = 12.37$, $p < .01$; however, the effect size, Cramer's *V*, was small, .14, (Cohen, 1988). Further inspection revealed a low expected count for course participants in Wave III. The minimum expected count for course participants was 45 and the observed number of course participants was 34. However, because course/non-course participation was the only statistically significant group difference between the participants, which appears to be attributed to a low sample size and the reported effect size was small, the primary investigator of this study decided to continue analyses with the merged dataset rather than to conduct analyses on each survey wave individually.

As aforementioned, participants in this study self-selected to enroll in the Transfer Student Success Course; therefore, it was important examine the participant characteristics between course and non-course participants. Table 6 includes demographical information by course participation and Table 7 includes information on participants' majors by course participation. Only the participants who provided a response for both the survey item regarding course enrollment and the identifying variables of interest were included in the table counts below. In terms of demographics, the proportions correspond to those described earlier in this chapter. Course participants comprised about 30 percent of the sample and

approximately 70 percent of the sample did not enroll in the course. Racially and ethnically, participants were about evenly distributed between the two groups. However, a difference between course and non-course participants was demonstrated in terms of major. STEM majors were less likely to enroll in the course, 10 percent had taken the course and 90 percent had not. Thirty-five percent of social science and humanities majors chose to enroll in the course while 65 percent did not. Economics majors were the group most likely to enroll in the course at 42 percent while 58 percent had not enrolled.

Table 5

Means and Standard Deviations for Academic and Social Adjustment Items Wave I (*n* =395), *Wave II* (*n* = 251), *and Wave III* (*n* = 138)

	Wave II		Wave II		Wave III	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
1. I am comfortable approaching professors for advice/help	2.93	0.86	3.08	0.85	2.93	0.83
2. I attend professor office hours	2.60	0.96	2.78	0.95	2.67	0.92
3. I have adjusted to the quarter system	2.86	0.93	3.00	0.92	2.88	0.94
4. I attend TA office hours	2.61	0.97	2.82	0.97	2.64	0.98
5. I find it difficult/overwhelming to ask questions in lectures	2.38	0.96	2.37	0.95	2.38	0.98
6. I worry about balancing work with school	2.43	1.04	2.49	1.08	2.46	1.14
7. I find it difficult/overwhelming to ask questions in TA discussion sections	1.83	0.83	1.75	0.82	1.82	0.80
8. I have established more than one network of friends	2.73	1.03	2.85	1.01	2.63	1.15
9. I have had an easy transition into [the university]	2.57	1.02	2.66	0.99	2.58	1.00
10. I find the environment at [this university] to be welcoming	3.14	0.82	3.25	0.76	3.07	0.85
11. I am having difficulty making new friends	2.44	1.02	2.29	0.97	2.48	1.08
12. I often feel lonely	2.27	1.04	2.23	0.99	2.31	1.05
13. I am having difficulty meeting other transfer students	2.23	1.01	2.33	1.01	2.39	1.06
14. I can relate to the people around me	2.68	0.90	2.82	0.90	2.67	0.94
15. I often feel isolated	2.15	0.98	2.03	0.97	2.27	1.04

Table 6

Gender, Race and Ethnicity by Course Participation (*n* = 663)

	Course Participation		Non-Course Participation		Totals	
	n	%	*n*	%	*n*	%
Gender						
Female	128	32.3	268	67.7	396	59.7
Male	73	27.3	194	72.7	267	40.3
Total	201	100.0	462	100.0	663	100.0
Ethnicity						
African-American/Black	4	2.0	8	1.7	12	1.8
Asian/Pacific Islander	36	17.9	61	13.2	97	14.5
Mexican/Latino/a	43	21.4	84	18.2	127	19.2
Middle Eastern	10	5.0	11	2.4	21	3.2
Native/Indian American	1	0.5	2	0.4	3	0.5
White/Caucasian	95	47.2	259	56.1	354	53.4
Other	12	6.0	37	8.0	49	7.4
Total	201	100.0	462	100.0	663	100.0

Table 7

Incoming Majors by Course Participation (*n* = 651)

Major	Course Participant	Non-Course Participant	Total
Social Sciences & Humanities Majors			
Anthropology	1	25	26
Art	0	6	6
Art History	0	5	5
Chicano & Chicana Studies	0	1	1
Classics	0	2	2
Communication	56	45	101
Comparative Literature	1	1	2
Dance	0	1	1
English	2	13	15
Film & Media Studies	0	6	6
French	0	1	1
Global & International Studies	2	14	16
History	3	9	12
History of Public Policy	1	1	2
Linguistics	1	2	3

Literature	0	3	3
Music	0	2	2
Philosophy	0	3	3
Political Science	3	15	18
Psychology	49	53	102
Religious Studies	0	2	2
Sociology	14	29	43
Spanish	0	1	1
Theater	0	2	2
Total	133 (35%)	242 (65%)	375 (100%)
STEM Majors			
Actuarial Science	0	5	5
Aquatic Biology	0	2	2
Biochemistry	1	6	7
Biological Sciences	0	11	11
Biology	2	8	10
Biopsychology	1	10	11
Cell & Development Biology	1	1	2
Chemical Engineering	0	5	5
Chemistry	1	10	11
Chemistry and Biochemistry	1	3	4
Computer Engineering	0	2	2
Computer Science	0	4	4
Earth Science	0	5	5
Electrical Engineering	0	3	3
Environmental Studies	1	23	24
Geography	2	8	10
Mathematical Sciences	2	4	6
Mathematics	0	6	6
Mechanical Engineering	0	3	3
Microbiology	0	4	4
Pharmacology	1	2	3
Physics	0	8	8
Physiology	1	2	3
Statistical Sciences	0	2	2
Zoology	1	3	4
Total	15 (10%)	140 (90%)	155 (100%)
Economics Majors			
Economics	20	26	46
Economics and Accounting	31	41	72
Economics/Mathematics	0	3	3
Total	51 (42%)	70 (58%)	121 (100%)

Item Selection for the Latent Class Analysis. A total of four confirmatory factor analyses were conducted to determine which items had higher loadings on the academic and social adjustment constructs. The first CFA included all 15 items (i.e., seven academic and eight social adjustment items). The standardized loadings revealed four of the seven academic items had low loadings (below the .50 cutoff) and three of the eight social items had loadings above .70. The items with low loadings were reevaluated. The wording of the items with low loadings suggested that they might load onto new constructs; therefore, two constructs were specified to represent *Academic Adjustment* and two new constructs were specified to represent *Social Adjustment*. The two new constructs used to represent *Academic Adjustment* were labeled, *Positive Academic Environment* and *Negative Academic Adjustment*. Similarly, the two new constructs representing *Social Adjustment* were labeled, *Positive Social Environment* and *Negative Social Adjustment*.

Therefore, a total of four constructs were specified for the second CFA. The four academic items that had resulted in low loadings in the first CFA were loaded onto the construct, *Positive Academic Environment*, which resulted in higher loadings on five of the seven academic items. However, two items continued to have low loadings, *I worry about balancing work with school*, which had a loading of .27, and *I have adjusted to the quarter system*, which had a loading of .29. The standardized loadings for the items assigned to *Social Adjustment*, *Positive Social Environment* and *Negative Social Adjustment*, resulted in strong loadings; thus, no more modifications were made to the items used to identify the *Social Adjustment* construct.

For the third CFA, the academic item, *I worry about balancing work with school*, was removed to test whether the loading of the item, *I have adjusted to the quarter system*, would

improve. Considering the difficulty transfer students have adjusting from a semester system to a quarter system, this item was deemed to be an important given the scope of this study. Therefore, *Negative Academic Adjustment* was measured by three items, *I have adjusted to the quarter system*, *I find it difficult/overwhelming to ask questions in lectures*, and *I find it difficult/overwhelming to ask questions in TA discussion sections*. However, instead of resulting in a stronger loading for the item, *I have adjusted to the quarter system,* the loading decreased from .29 to .28. As a result, the primary investigator decided to remove the item, *I find it difficult/overwhelming to ask questions in lectures,* as it was too similar to the item, *I find it difficult/overwhelming to ask questions in TA discussion sections* and may have been affecting the strength of the loading for the item of interest (i.e., *I have adjusted to the quarter system*).

The fourth CFA contained a total of 13 items and resulted in a stronger loading for the item, *I have adjusted to the quarter system,* which improved from .28 to .35. Despite the improvement the item failed to meet the loading cutoff criteria of .50, however, based on face validity the item was retained. The descriptive statistics for the 13 items are shown in Table 8 and the identified constructs with respective standardized item loadings are shown in Table 9.

Table 8

Descriptive Statistics of Selected Items for the LCA (*n* = 736)

Number	Item	*M*	*SD*
1	I am comfortable approaching professors for advice/help	2.97	0.85
2	I attend professor office hours	2.67	0.95
3	I attend TA office hours	2.68	0.98
4	I have adjusted to the quarter system	2.89	0.94
5	I find it difficult/overwhelming to ask questions in TA sections	3.19	0.83
6	I have established more than one network of friends	2.76	1.05
7	I have had an easy transition into [the university]	2.61	1.01
8	I find the environment at [this university] to be welcoming	3.17	0.81
9	I can relate to the people around me	2.73	0.91
10	I am having difficulty making new friends	2.60	1.02
11	I am having difficulty meeting other transfer students	2.73	1.02
12	I often feel lonely	2.74	1.03
13	I often feel isolated	2.86	1.00

Table 9

Standardized Item Loadings for Two Academic and Two Social Constructs (*n* = 736)

Construct		Item	Loading
Academic Adjustment	Positive Academic Environment	I am comfortable approaching professors for advice/help	0.61
		I attend professor office hours	0.84
		I attend TA office hours	0.71
	Negative Academic Adjustment	I find it difficult/overwhelming to ask questions in TA sections	0.53
		I have adjusted to the quarter system	0.35
Social Adjustment	Positive Social Environment	I have established more than one network of friends	0.71
		I have had an easy transition into [the university]	0.69
		I find the environment at [this university] to be welcoming	0.69
		I can easily relate to the people around me	0.67
	Negative Social Adjustment	I am having difficulty making new friends	0.74
		I often feel lonely	0.84
		I often feel isolated	0.87
		I am having difficulty meeting other transfer students	0.59

Latent Class Analysis. Two unconditional LCA models were conducted each with a total of six latent classes. The first model included the aforementioned 13 items; however, after examining the item probability plots for each of the classes the item, *I find the environment at [this university] to be welcoming*, was removed because it was positively endorsed across all the classes and did not differentiate between the latent classes. Therefore, the unconditional LCA model reported for this study included 12 items. Table 8 shows the fit statistics of each model, starting with a 1-class model. The bolded values represent the preferred value for the corresponding fit statistic. As shown in Table 8, there are bolded values across the models, which indicate several models as best fitting. Masyn (2013) described this type of scenario as a common occurrence and recommended the researcher examine each model for both fit and substantive meaning.

Examining the results in Table 10, as the number of classes increased the BIC value begins to decrease. However, after the 4-class model the decrease to the BIC value is small and then appeared to flatten out. A similar pattern occurred with the ABIC value. This would suggest the 4-class model to be the best fitting model. Additionally, the LMR value for the 5-class model was the first non-significant *p*-value before becoming significant again in the 6-class model, which indicates the 4-class model as the best-fitting model. The BLRT never reached non-significance and the BF stayed below 1. The cmP value closest to 1 was in the 6-class model. The entropy value closest to 1 emerged in the 3-class model, which had an entropy value of .83.

Examination of the item probability plots for each model indicated the best fitting model to be the 4-class model. The 5-class model was also examined, however, the proportion of participants in the fifth class was small (3.8 percent) and was not particularly

meaningful. The 6-class model was not considered since it is recommended that researchers select the model with the least amount of classes that is supported by the fit statistics and theoretical sense. Therefore, the 4-class model was selected based on the BIC, LMR, and the item probability plots.

Table 10

Fit Statistics of Unconditional LCA Models (*n* = 736)

Number of Classes	LL	BIC	ABIC	LMR *p*-value	BLRT *p*-value	BF	cmP	Entropy
1	-5662.08	11403.38	11365.28	-	-	-	-	-
2	-5077.05	10319.13	10239.75	0	<.001	<.001	<.001	0.82
3	-4960.55	10171.96	10051.29	0.000	<.001	<.001	<.001	**0.83**
4	-4870.70	10078.06	9916.11	**0.028**	<.001	<.001	<.001	0.77
5	-4819.05	10060.57	9857.35	0.193	<.001	0.690	0.408	0.80
6	-4775.77	**10059.83**	**9815.33**	0.024	<.001	0	**0.592**	0.82

Note. Bold values indicate the preferred model for the given index. BIC = Bayesian Information Criterion; ABIC = Adjusted BIC; BLRT = Bootstrap Likelihood Ratio Test; LMRT = Lo-Mendell-Rubin Adjusted Likelihood Ratio Test.

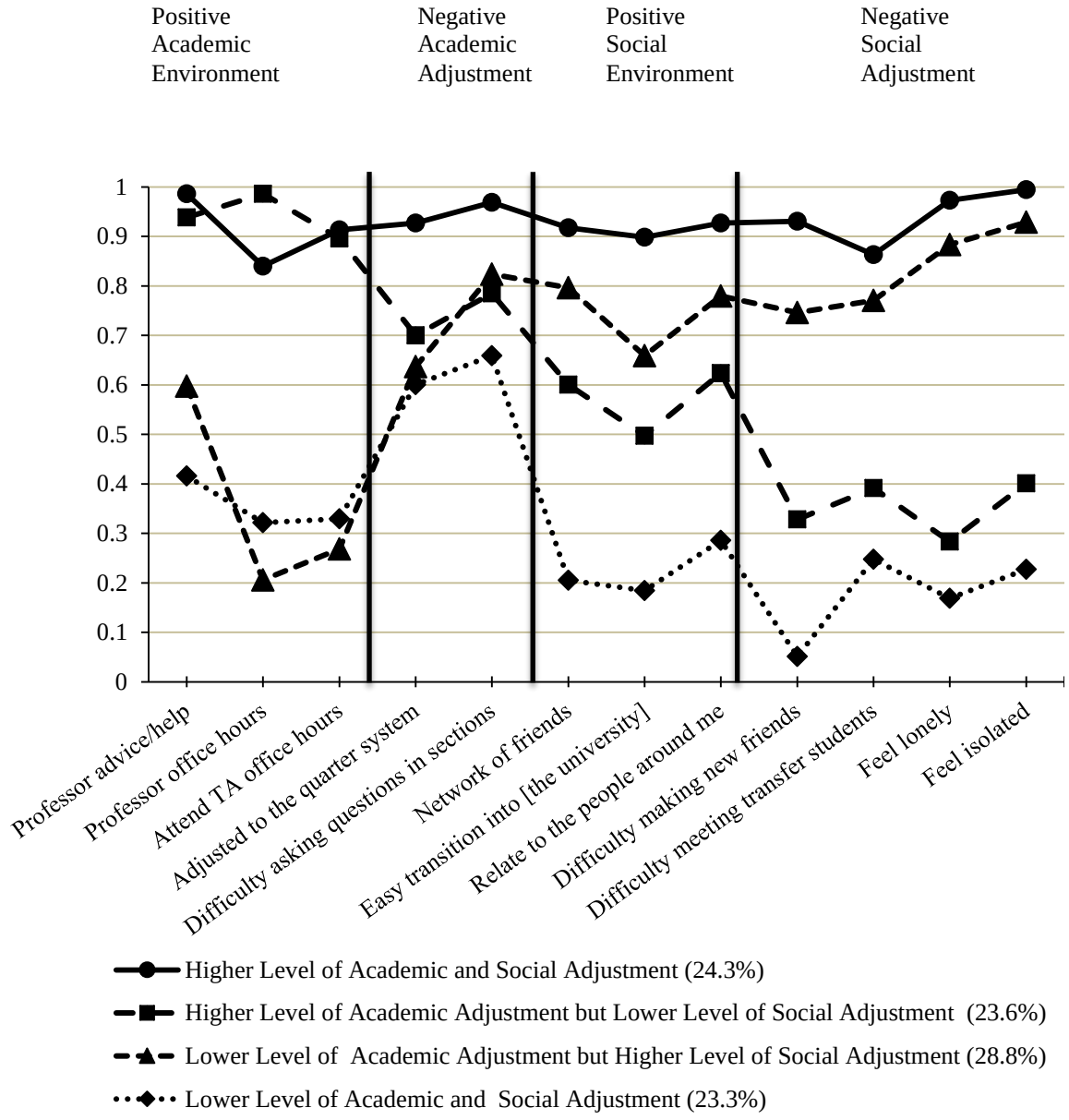

Figure 2. Item probability plot of transfer student subgroups by *Academic Adjustment* and *Social Adjustment* constructs.

The item probability plot of the 4-class model presented in Figure 2 was used to label and interpret each emergent class. The class at the top of the plot represented by the solid black line and the round markers had a higher propensity for endorsing both the academic and social adjustment items. All 12 items received a high probability of endorsement above

.80. This class was labeled as the *Higher Level of Academic and Social Adjustment* (HighA/HighS) class and consisted of 24.3 percent of the sample. Therefore, the first class was the ideal class, or the reference class, as participants in this class indicated having higher levels of both academic and social adjustment. The dashed line with square markers represents the second class, which was labeled as the *Higher Level of Academic Adjustment but Lower Level of Social Adjustment* (HighA/LowS) class and consisted of 23.6 percent of the sample. This class had a higher propensity for endorsing the academic adjustment items but a lower propensity for endorsing the social adjustment items. Specifically, items for the construct, *Positive Social Environment,* received a moderate probability of endorsement while the three items for the, *Negative Social Adjustment,* construct were slightly above .30, which is considered a low probability of endorsement, which suggested these participants were having difficulty on an individual level adjusting socially.

The third class represented by a dashed line with triangle markers was labeled as the *Lower Level of Academic Adjustment but Higher Level of Social Adjustment* (LowA/HighS) class and consisted of 28.8 percent of the participants. This class fluctuated on the academic adjustment items; specifically, participants in this class had a lower propensity for endorsing two academic items, *I attend professor office hours* and *I attend TA office hours*, and a higher propensity for endorsing all the remaining academic adjustment items. Additionally, this class had a high propensity for endorsing the social adjustment items. The fourth class was labeled as the *Lower Level of Academic and Social Adjustment* (LowA/LowS) class, which consisted of 23.3 percent of the sample and is represented by a round dotted dashed line with diamond markers. Overall, this class had a lower propensity for endorsing items relative to the previous classes. Two items that constituted the construct, *Negative Academic*

Adjustment, received a moderate-to-high probability of endorsement, which reflected a positive connotation. All seven social adjustment items, however, received a low probability of endorsement and were under .30.

Latent Class Analysis with Covariates and Distal Outcome. After selecting the best fitting unconditional model the covariates (i.e., race and ethnicity, course participation and major) and distal outcome (i.e., drop in GPA) were added using the BCH method. The results showed two of the covariates, course participation and major, were statistically significant. Course participants were more likely to be in reference class, or the *Higher Level of Academic and Social Adjustment* (HighA/HighS) class, $p = .03$. Additionally, STEM majors were more likely to be in the lower class, the *Lower Level of Academic and Social Adjustment* (LowA/LowS) class, $p = .02$. Thus, STEM majors were more likely to experience difficulty adjusting. The covariate race and ethnicity was not statistically significant (see Table 11).

Next, the distal outcome was added into the model. A total of 626 participants provided complete GPA information (i.e., incoming GPA and end-of-first term GPA). Participants in the reference class (HighA/HighS) had the smallest drop in GPA across classes and a significantly higher GPA than participants in the third class, *Lower Level of Academic Adjustment but Higher Level of Social Adjustment* (LowA/HighS), $p = .01$. Additionally, participants in the second class, *Higher Level of Academic Adjustment but Lower Level of Social Adjustment* (HighA/LowS), had a significantly higher GPA than those in the third class, *Lower Level of Academic Adjustment but Higher Level of Social Adjustment* (LowA/HighS), $p = .03$ (see Figure 3).

Table 11

Covariates for the Final 4-Class Model (*n* = 736)

Class	Effect	Logit	SE	Logit/SE	*p value*	OR
Higher Level Academic Adjustment but Lower Level Social Adjustment (HighA/LowS)	Mexican/Latino	0.18	0.38	0.47	0.64	1.19
	Asian/Pacific Islander	0.13	0.42	0.32	0.75	1.14
	Other	0.54	0.45	1.21	0.23	1.72
	Course Participation	-0.19	0.30	-0.62	0.54	0.83
	STEM Major	-0.25	0.42	-0.58	0.56	0.78
	Economic Major	0.32	0.38	0.83	0.40	1.37
Lower Level Academic Adjustment but Higher Level Social Adjustment (LowA/HighS)	Mexican/Latino	0.07	0.37	0.19	0.85	1.07
	Asian/Pacific Islander	0.11	0.43	0.25	0.81	1.11
	Other	0.29	0.45	0.65	0.52	1.34
	Course Participation	-0.12	0.30	-0.40	0.69	0.87
	STEM Major	0.59	0.35	1.69	0.09	1.81
	Economic Major	0.34	0.39	0.86	0.39	1.40
Lower Level Academic Adjustment and Social Adjustment (LowA/LowS)	Mexican/Latino	0.45	0.34	1.32	0.19	1.56
	Asian/Pacific Islander	-0.01	0.43	-0.01	0.99	0.99
	Other	0.39	0.44	0.89	0.38	1.48
	Course Participation	-0.67	0.31	-2.14	**0.03**	0.51
	STEM Major	0.74	0.33	2.27	**0.02**	2.10
	Economic Major	0.14	0.40	0.34	0.74	1.15

Note. Higher Level Academic and Social Adjustment (HighA/HighS) was used as the reference class. OR = Odds Ratio value. Bolded values significant at $p < 0.05$.

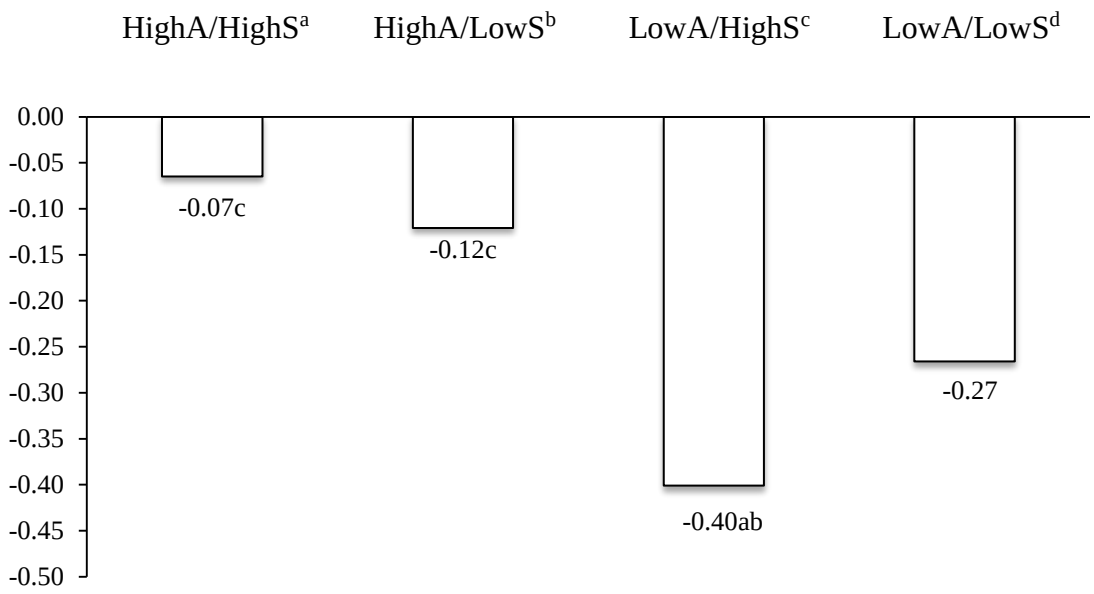

Figure 3. Drop in GPA for each transfer student subgroup (*n* = 626). Superscripts denote which columns are statistically significant. For example, column a (HighA/HighS) has a significantly lower drop in GPA than column c (LowA/HighS).

Chapter 5

Discussion

The purpose of this study was to explore whether meaningful subgroups of transfer students emerged based on their responses to academic and social adjustment items from a newly developed survey, the Transfer Student Transition Survey (TSTS). Additionally, this study sought to determine whether the emergent classes significantly differed by race and ethnicity, course participation, major, and GPA. The results of this study indicated the emergence of four transfer student subgroups. Participants who enrolled in a first-year Transfer Student Success Course were more likely to be in the ideal class, or reference class, which had a higher probability of endorsement on both the academic and social adjustment items. Moreover, these participants tended to experience the smallest drop in GPA across classes. Furthermore, transfer students from a particular major, or race and ethnicity were not more or less likely to be in the ideal class. Therefore, it appears that the Transfer Student Success Course ameliorated transfer shock among transfer students in general. These findings seem to be consistent with the literature on first-year program interventions for traditional students and support the speculation that if similar programs were to be developed for transfer students, such interventions could achieve similar results. Transfer student interventions could facilitate the transition and overall adjustment of first-year transfer students at four-year institutions.

In addition to showing the potential benefits of first-year transfer student program interventions on academic and social adjustment, this study provided a better understanding of the heterogeneity of this student population and showed how GPA varied depending on class membership. While participants in the first class, *Higher Level of Academic and Social*

Adjustment (HighA/HighS), appeared to be adjusting well overall, the remaining classes conveyed some of the challenges first-year transfer students encountered in their transition to the university. For instance, the second class, *Higher Level Academic Adjustment but Lower Level Social Adjustment* (HighA/LowS) and third class *Lower Level Academic Adjustment but Higher Level Social Adjustment* (LowA/HighS), were almost mirror opposites of each other in terms of their response patterns; yet, those in the second class, who had a lower level of social adjustment, experienced less of drop in GPA than participants in the third class. In fact, the third class (LowA/HighS), whose participants had a higher probability of endorsement on all of the social adjustment items, experienced the largest drop in GPA (i.e., -0.40) across classes. The participants from the second class (HighA/LowS) moderately endorsed all three of items in the construct, *Positive Social Environment* (i.e., *I have established more than one network of friends, I have had an easy transition into the university,* and *I can easily relate to the people around me*) but had low probability of endorsement on the items related to peer-interactions, or the items that comprised the *Negative Social Adjustment* construct.

In terms of academic adjustment, the second class (HighA/LowS) had a higher probability of endorsement on all three of the items that comprised the construct *Positive Academic Environment* (i.e., *I am comfortable approaching professors for advice/help, I attend professor office hours,* and *I attend TA office hours*). Conversely, participants in the third class (LowA/HighS) had the lowest probability of endorsement on two of these items, *I attend professor office hours* and *I attend TA office hours*. As aforementioned, Tinto (1975) recognized the importance of faculty-student interactions as increasing both academic and social adjustment, which was an especially pertinent reminder when comparing the item

response patterns of these two classes. More research is needed to determine whether participating in office hours and achieving a high level of academic adjustment coupled with moderate social adjustment is enough to avoid a significant drop in GPA, which would be consistent with Tinto's and Kuh's assertion on the importance of faculty-student interactions.

Furthermore, the response patterns from participants in the third class (LowA/HighS) demonstrated that a high level of social adjustment does not necessarily improve academic performance (i.e., GPA), which appears to be inconsistent with the literature on the importance of social adjustment over academic. As pointed out in the literature review, there has been an influx of traditional-age students who begin their postsecondary education at a community college, which means that transfer students are much younger than generations before them. Younger students might be prone to overindulge in the social activities traditionally associated with residential college life, which may also prove too enticing for younger first-year transfer students with a higher propensity for socializing. Thus, these participants may have reached an unhealthy imbalance between the academic system and social system and placed a stronger focus on socializing with peers than interacting with faculty, TAs, or maintaining their incoming GPA. This type of scenario serves as a warning to first-year transfer students and reiterates the importance of finding balance between academic responsibilities and a healthy social life at the university. Conveying this point, however, may prove challenging since this may be the first time transfer students are moving away from home and living independently.

Another explanation, however, may be that these participants in this subgroup (LowA/HighS) were members of campus clubs, organizations, and/or athletic teams. Membership status in these types of extracurricular activities was not included as a factor in

this study. Therefore, it is unclear whether participants in this subgroup were involved and/or over-committed to these types of activities, which negatively affected their GPA. However, Solórzano, Ceja, and Yosso (2000) found that over-commitment to extracurricular activities negatively affected students' study habits. Therefore, it is important to provide *all* incoming first-year students (both traditional and transfer) with first-year program interventions that will orient them to the resources on campus that foster and promote strong academic habits, balance, and self-care.

The fourth class, *Lower Level of Academic Adjustment and Social Adjustment* (LowA/LowS), yielded a statistically significant difference for the covariate "major." Interestingly, no significant results emerged for the economics majors. Perhaps this major did not yield any significant results because it was not as closely related to business after all. STEM major, however, was significant and the findings revealed that STEM majors were more likely to be in this class (LowA/LowS), which had the lowest probability of endorsement for the majority of the items in this study. The participants in this class, however, did moderately endorse the items in the construct, *Negative Academic Adjustment*, in a positive direction. In other words, the participants tended to *strongly agree* and/or *agree* with the statement, *I have adjusted to the quarter system*, and *strongly disagree* and/or *disagree* with the statement, *I find it difficult/overwhelming to ask questions in TA sections*.

Furthermore, these participants had a low probability of endorsement on all three of the items that comprised the construct, *Positive Academic Environment*, which consisted of the following items: *I am comfortable approaching professors for advice/help*; *I attend professor office hours*; and *I attend TA office hours*. These findings were interesting because these participants seemed to be comfortable interacting with TAs in sections, yet, were not

comfortable approaching professors for advice/help. Additionally, participants in the fourth class had a low probability of endorsement on the items, *I attend professor office hours* and *I attend TA office hours* – similar to participants from the third class (LowA/HighS). Therefore, based on the low probability of endorsement across most of the social adjustment items (all seven social items received an endorsement below .30) and on the professor and TA office hours items it appeared that the participants in this class, who were more likely to be STEM majors, struggled with social interactions, both one-to-one interactions and in general.

Thus, participants from the fourth class appeared to have a much more difficult time adjusting socially than participants in other classes. It was unclear from this study whether these participants were struggling to adjust socially because of the rigors associated with being a STEM major, or a lack of opportunities to network with peers, or if there was an underlying social anxiety or avoidance issue that prevented these students from engaging with peers and establishing friendships. STEM majors were also less likely to enroll in the Transfer Student Success Course (only 10 percent enrolled) compared to other disciplines. Perhaps, encouraging STEM majors to enroll in similar program interventions could help these students socialize with peers, which would help these students establish a more balanced lifestyle at the university.

More research is needed to determine the challenges transfer students in STEM fields encounter when trying to establish peer relationships and how the lack of social support networks (within the university) may affect persistence in STEM and overall college satisfaction. Regarding the office hours items, perhaps it is not part of the university culture in STEM fields for students to attend office hours. It may also be possible that transfer

students may not understand the importance of attending office hours, as this practice is not traditionally the norm in the community college system. Maybe STEM majors do not think they need to attend office hours in order to succeed academically in the university. Or, perhaps transfer students in STEM fields experience transfer student stereotypes or microaggressions from majority groups in these fields, which discouraged them from seeking out interactions with professors and/or TAs. In terms of GPA, these participants experienced about a quarter drop in GPA, which was not statistically significant but was the second largest drop across the four classes. It is unclear whether encouraging STEM majors to seek out faculty and TA one-to-one interactions could mitigate a drop in GPA.

Findings from this study can inform administrators, faculty, and staff at individual colleges and departments in STEM fields of the challenges transfer students encounter at the university. The response patterns of the participants in this class (LowA/LowS) were concerning because research has shown that integration in the social sphere is essential for establishing a sense of belonging and overall integration into the university. While it was unclear why STEM transfer students were less likely to enroll in the Transfer Student Success Course, university administrators may want to find ways to better promote and/or publicize the benefits of participating in first-year program interventions or student support services in general to first-year STEM transfer students. The findings from this study are consistent with previous literature on the challenges STEM transfer student majors encounter at four-year institutions. Given the high attrition rates among these students, university administrators cannot afford to continue ignoring signs of student distress.

It is crucial to determine why STEM majors were less likely to enroll in the Transfer Student Success Course. Maybe STEM majors were less inclined to take courses outside

their major due to unit-caps. Typically, transfer students must complete baccalaureate programs in two years at receiving institutions. Core STEM courses tend to be offered every other year; therefore, these restrictions might prevent STEM transfer students from enrolling in courses (or units) that do not directly count towards the requirements of their major. STEM administrators may want to then offer their own version of a first-year transfer student success course that incorporates STEM curriculum and will count towards program and degree completion.

Another reason STEM transfer students were less likely to enroll in the Transfer Student Success Course may be due to problems or issues transferring lower-division units. Perhaps there is a cap on the number of units university administrators in STEM-fields accept from community colleges. As previously stated, if biases and prejudices against community college students exist then some STEM faculty and/or administrators may not want to accept lower-division units from STEM courses taught at institutions deemed inferior to their own. STEM transfer students who cannot transfer the majority of their lower-division STEM units would then be forced to re-take lower-division courses at the university, which would delay time-to-completion and make it impossible to take courses outside the required core classes for the major.

This study also sought to determine whether the emergent classes differed by race and ethnicity; however, no statistically significant results for this covariate emerged across the emergent classes. It is important to point out that the participant sample used in this study had a high proportion of students who self-identified as White/Caucasian (53.1 percent). Nonetheless, this finding was surprising given that there were 151 (almost 20 percent of the sample) participants who self-identified as Mexican/Latino. However, the characteristics of

transfer students who enroll at this university differed from those described in the literature on community college Latina/o students.

First, the Latino participants from this study were recruited from a selective research university. Research has shown that a high proportion of Latino students tend to "undermatch" and choose less selective institutions. Therefore, the fact that Latino students in this study applied to a selective research university sets them apart from the norm. Institutions with higher selectivity have stricter admission criteria. In fact, the average incoming GPA for fall 2015 transfer students was 3.44; thus, participants from this study appear to be better prepared academically altogether. Also, transfer students who enrolled for fall 2015 indicated their parent(s) education level at "college graduate" or "post-graduate studies," and 40 percent reported parent(s) income at $100,000 or more (mean income was $75,000). This may indicate that a proportion of Mexican/Latino transfer students in this study were middle-class. Middle-class families are often unable to qualify for federal financial aid or state grants. Parents may encourage their children to pursue the community college to transfer pathway instead of attending a four-year institution for four years, which is expensive. It is important to note, however, that the fall 2015 transfer student data were not disaggregated by race and ethnicity, but may still provide some insight on the overall characteristics of transfer students who enroll at this institution and explain, at least to a certain extent, why race and ethnicity was not significant.

Lastly, this study sought to examine the applicability of Tinto's (1975) theoretical framework to the transfer student experience. While Tinto's model was developed for traditional students, it continues to be used in the development of first-year program interventions for different student populations. Tinto's (1975) model delineated a series of

ongoing processes between students and institutions, and posited that incoming individual characteristics, level of commitment to the institution and degree goals, poor fit with the institution, and failure to integrate into the academic and social systems of the institution could lead to early departure. While Tinto's (1975) model provides a foundational understanding of how student-institution interactions can affect persistence and completion, it does not adequately capture the experiences of transfer students and the challenges they encounter at receiving four-year institutions.

Transfer students encounter numerous institutional factors that can negatively affect time-to-completion goals and overall satisfaction with the institution. Research has shown that transfer students encounter outdated and unfair policies. As previously shown, incoming transfer students tend to be admitted as pre-majors across disciplines and must pass "weeder courses" in order to be fully admitted into the major of their choice. Additionally, if administrators in STEM fields only accept a minimal number of lower-division units transfer students are forced to change majors. For particular fields, changing majors may not be too detrimental to a student (e.g., switching from anthropology to sociology). However, if students are forced to switch out of an economics major (or STEM major), and the university does not offer a comparable or similar major/field, the students' degree goal have been changed for them along with their career aspirations. Policies that require students to choose unrelated fields of study only increase time-to-degree requirements and the likelihood of attrition.

While selective institutions have higher retention and completion rates, and the transfer students at this institution completed their degrees within two or three years, the university is failing to address unfair policies that put these students at a disadvantage

relative to traditional students. Unfortunately, the fact that transfer students have been able to successfully complete their degrees may be the reason these institutions have not properly implemented systemic change. In other words, there is no sense of urgency to change the status quo given the high completion rates.

In order to address these shortcomings and foster a welcoming and inclusive campus community, receiving institutions must acknowledge whether such policies continue to be in place due to biases, prejudices against transfer students. Receiving institutions should aim to build a "transfer receptive culture" (Jain et al., 2011). Jain et al. (2011) define transfer a transfer receptive culture as a dual commitment between both the sending and receiving institution. A transfer receptive culture provides transfer students with the support they need to succeed and attain the baccalaureate in a timely manner. A transfer receptive culture recognizes transfer students as valuable members of the campus community who contribute to the overall diversity of four-year institutions.

Given the numerous challenges transfer students encounter at the four-year institutions, it is of utmost importance that receiving institutions provide these students with the resources and support they need to not only succeed, but also to establish a sense of belonging, and integration, but it affirms group membership. Ultimately, four-year institutions need to do a better job at building inclusive campus environments and supporting the transfer student population. Transfer students bring with them lived experiences, which are not typically represented among traditional students at selective institutions. Thus, transfer students should not be treated as second-hand citizens or be discriminated against. Therefore, a more inclusive theoretical framework and model is needed to truly capture the experiences of transfer students at the four-year research university.

Implications for Practice

As the extant literature has shown, first-year program interventions are beneficial to students because they orient students to the resources on campus, encourage involvement, elicit engagement, and socialize students to the norms and culture of the research university. Therefore, university administrators who consider transfer students to be "experienced college-goers" who can succeed at the university without any supportive interventions may want to reconsider this stance. The experience community college students have at a two-year commuter institution drastically differs from the experience they will have at a large research-intensive four-year residential university. The results of this study have shown that first-year transfer students do benefit from programmatic interventions. The emergent subgroups from this study can help inform campus administrators seeking to provide first-year transfer students with a similar type of intervention.

Regarding the transferability of units, a way to establish *good faith* between students and receiving institutions may be for the California public research university system to adopt a policy similar to SB1440, which prohibits the California State University system from having transfer students re-take lower-division coursework. Adopting a similar policy at the research university level is urgently needed for STEM majors who usually have to take more courses at the community college level compared to non-STEM majors. Not honoring coursework, post-transfer, puts these students at risk of not completing the baccalaureate or forces them to switch majors in order to finish in two years.

Directions for Future Research

A more comprehensive examination needs to be conducted in order to fully understand the underlining factors contributing to varying levels of academic and social

adjustment among transfer students. Future research studies may want to implement a mixed-methods approach to conduct follow-up interviews with participants to uncover the factors and challenges contributing to high/low adjustment.

Furthermore, future studies seeking to examine the heterogeneity of transfer students could include different academic and social adjustment variables. For example, as aforementioned this study did not include membership status of extracurricular activities, which could result in a better understanding the activities accounting for social adjustment aside from peer interactions. The results of this potential study can answer whether there is there a "sweet spot" in terms of time management between social interactions and academic workloads.

Additionally, future research needs to be focused on institutional policies that negatively affect transfer students and the outcomes of affected students. Aside from the problems with the transferability of units and weeder courses, it is important to examine how efforts to help transfer students can also be limited. For instance, the Transfer Student Success Course had an enrollment cap of 200 students; yet, the university enrolls about 1,500 to 1,600 new transfer students every year. This means that there was a substantial number of transfer students who are not receiving support. Perhaps universities can also stream the course online and researchers can test whether an online course has the similar effects to n in-person course.

Limitations

While this was the first study to use latent class analysis to examine the heterogeneity of community college transfer students based on their response patterns to academic and social adjustment items, there were several limitations to this study. The first limitation was

that this was a cross-sectional study; therefore, GPA beyond the first academic term and information on whether the participants in this study completed the baccalaureate were not obtained. It was the principal investigator' a priori assumption that transfer students do in fact complete the baccalaureate within one-to-two years as per the high retention and completion rates reported by the university. Additionally, the extant literature has shown that transfer students tend to recover their GPA within the first academic year at the four-year institution. The purpose of this study was not to capture GPA recovery or completion, but to convey the challenges first-year transfer student subgroups encountered and determine whether first-year program interventions facilitated the transition and integration of this population.

Another limitation to this study was that students who enrolled in the Transfer Student Success Course had self-selected to enroll in this course. Therefore, there may be individual differences shared by these participants that influenced their responses to the academic and social adjustment items. It is important to note that the Transfer Student Success Course has a maximum enrollment capacity of 200 students and often has a waiting list of students who want to enroll. This study did not include a control group of the participants who sought to take the course but were unable to due to the enrollment cap. Therefore, future studies should include a control group to examine whether reported levels of academic and social adjustment differ due to individual difference among students who are more likely to take this type of course or whether the course is responsible for these differences. Lastly, the chi-square test revealed a significant difference between course participants across the three survey waves. Thus, the results reported here should be interpreted with caution. A more robust sample is needed to avoid statistically significant

differences between cohorts.

Finally, this study was conducted at a single research university. In order to replicate the findings from this study it is important to include multiple four-year institutions (both research and applied-oriented) to examine whether similar transfer student subgroups emerge based on institutional type and/or geographical location. It is possible that the subgroups that emerged here were unique to this research university. Additionally, a more diverse student sample is needed. The participant sample used in this study had a high proportion of students who self-identified as White/Caucasian (53.1 percent). Therefore, a larger and more racially and ethnically diverse participant sample is needed to determine whether statistically significant differences emerge in the level of academic and social adjustment across transfer student subgroups, especially in regard to Latina/o students.

Despite the limitations, however, this study contributes to the literature in several ways. First, this study was the first to examine the heterogeneity of multiple cohorts of community college transfer students and find meaningful subgroups based on their academic and social adjustment at a research-intensive university. This study also examined the characteristics of each emergent subgroup and identified the types of students who were more likely to experience transfer shock. The results of this study provide support for programmatic interventions tailored for first-year transfer students, which can help these students overcome transfer shock, and facilitate the transition and integration of these students to the research university.

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Appendix A

TSTS 2012-13

SURVEY CONSENT FORM

TRANSFER STUDENT TRANSITION SURVEY (TSTS) ACADEMIC YEAR 2012-2013

WHAT IS THE TRANSFER STUDENT TRANSITION SURVEY (TSTS)? The Transfer Student Transition Survey (TSTS) is an online survey administered by UCSB's Center for Advanced Studies of Individual Differences (CASID) to incoming community college transfer students over the age of 18. The purpose of this study is to examine the transition and adjustment of transfer students from the 2012-2013 academic cohort. Results from this study will be shared with the Division of Student Affairs in order to assess existing transfer student outreach, services, and programs at UCSB.

PARTICIPATION: This study is voluntary, and you are under no obligation to participate - you may withdraw at any time by closing your browser. You are not required to answer all the questions in the survey in order to participate in this study. Depending on your answers, this survey will take approximately 10-15 minutes to complete.

ANONYMITY: This survey is anonymous, and no identifying information will be connected with your responses. If you choose to participate you will be prompted to create your own identification code, which will be used to match your responses with any subsequent or follow-up Transfer Student Transition Surveys (TSTS) you fill out for this study during the 2012-2013 academic year. All survey data will be collected and stored using SurveyMonkey's ProPlan, which utilizes Secure Socket Layer (SSL) encryption for optimal security.

POTENTIAL BENEFITS & RISKS: The information you provide will help CASID researchers and Student Affairs officials understand how best to serve the needs of community college transfer students at UCSB. By reflecting on your own experiences as a transfer student at UCSB the feedback can potentially benefit future community college transfer students, colleges/universities, and researchers. Thus, your participation is invaluable.

WHO CAN I CONTACT FOR MORE INFORMATION? If you have any questions regarding this survey, please contact graduate researcher, Veronica L. Fematt, at cctransferstudentresearch@gmail.com

YOUR RIGHTS AS A PARTICIPANT: If you have any concerns or questions regarding your rights as a participant in this study, you may contact Melissa Warren from the Human Subjects Committee (HSC) at (805) 893-3807 or e-mail warren@research.ucsb.edu. For more information about your rights as a participant please see:

http://www.research.ucsb.edu/media/11223/human_subjects_bill_of_rights.pdf

*Q1. If you are willing to participate in this study, please indicate by checking one of the options below:

- o Yes, I want to participate and take the survey
- o No thanks, I do not wish to participate

[IF A PARTICIPANT SELECTS "NO," THEY ARE REDIRECTED TO A THANK YOU MESSAGE AND THE SURVEY IS CLOSED]

[QUESTIONS WITH AN ASTERISK (*) ARE MANDATORY AND CANNOT BE SKIPPED.]

In order to match your responses with any follow-up surveys, we are asking you to generate your own personalized ID so we can match responses but not identify you. (Your personalized ID is only used to match survey responses and not to identify students – all surveys are anonymous).

*Q2. Please type the first four numbers of your UCSB perm number followed by the month and day you were born in mm/dd format (Example: If my perm number is 1234567 and I was born on January 9, my ID is 12340109).

_____

BACKGROUND INFORMATION

*Q3. What is your gender?

- o Male
- o Female

*Q4. Please list your age:

*Q5. What is the ethnicity you MOST identify with?

- o African-American/Black
- o Asian/Pacific Islander
- o Mexican/Latino/a
- o Middle Eastern
- o Native American/American Indian
- o White/Caucasian
- o Other (please specify): _____

*Q6. What is the highest level of formal education obtained by your mother?

_____ 1) Grammar school or less
_____ 2) Some high school

_____ 3) High school graduate
_____ 4) Some college
_____ 5) Associate degree
_____ 6) Bachelor's degree
_____ 7) Graduate degree (master's, doctoral, or professional)
_____ 8) Don't know, not applicable

*Q7. What is the highest level of formal education obtained by your father?
_____ 1) Grammar school or less
_____ 2) Some high school
_____ 3) High school graduate
_____ 4) Some college
_____ 5) Associate degree
_____ 6) Bachelor's degree
_____ 7) Graduate degree (master's, doctoral, or professional)
_____ 8) Don't know, not applicable

*Q8. Are you currently?
- o Single
- o Married
- o Separated, divorced, or widowed

*Q9. How many children are you the primary caregiver for?
- o Not applicable
- o 1
- o 2
- o 3
- o 4 or more

*Q10. Military Status:
- o Not applicable
- o ROTC, cadet, or midshipman at a service academy
- o In active duty
- o Reserves/national guard
- o Individual ready reserve (IRR)
- o A discharged veteran NOT serving in active duty, reserves, or National Guard

COMMUNITY COLLEGE INFORMATION

*Q11. What community college did you transfer from? If you attended multiple schools, please choose the college where you have taken the MOST classes.

[DROP DOWN MENU INCLUDES ALPHABETICAL LISTING OF CALIFORNIA COMMUNITY COLLEGES, AN "OUT-OF-STATE" AND "NOT LISTED" OPTION]

*Q12. Which of the following comes closer to the TOTAL amount of time you attended the community college system prior to transfer?

- 1 to 1.5 years
- 2 to 2.5 years
- 3 to 3.5 years
- 4 to 4.5 years
- 5 to 5.5 years
- More than 5.5 years
- Other (please specify) _____

*Q13. Did you complete an A.A./A.S. degree before transferring to UCSB?

- No, I did not complete an AA/AS degree
- Yes, I completed an AA/AS to Transfer degree (AA-T or AS-T) as part of my major requirements
- Yes, I completed multiple AA/AS degrees
- Yes, I completed an AA/AS degree
- Other (please specify) _____

*Q14. Taking into consideration ALL your community college experience, how often did you do the following?

1 – Never, 2 – Not often, 3 – often, 4 – Very often, Not applicable

- Ask questions in class
- Seek assistance from your peers outside of class (e.g. study groups)
- Seek the advice of your instructors outside of class
- Meet with a counselor for academic purposes
- Meet with a transfer center counselor for academic/transfer purposes
- Seek out tutoring services
- Take notes during class
- Participate in campus organizations/clubs
- Participate in campus sports
- Take honors courses

*Q15. How often did you use the following services at your community college?

1 – Never, 2 – Not Often, 3 – Often, 4 – Very Often, 5 – Not Applicable

- Transfer Center
- Financial Aid Office
- Equal Opportunity Program (EOP)
- Counseling
- Career Center
- Other (please specify) _____

Q16. Did you participate in any CSU/UC student transfer agreements (Example: TAG, TAP, IGETC)? If so, please list below:

_____

FOUR-YEAR UNIVERSITY INFORMATION

*Q17. Please list the term you were admitted to UCSB (Example: Fall 2012):

*Q18. Please list your major as was indicated on your application to UCSB:

[DROP DOWN MENU OF UNDERGRADUATE MAJORS AT UCSB AND INCLUDES AN "UNDECLARED" OPTION]

*Q19. If your major has changed from what was indicated on your application to UCSB, please list your new major and reason for change:

*Q20. What was your cumulative grade point average (GPA) at the time you applied for admission at UCSB?

*Q21. Are you currently taking ED 118 The Research University and the Transfer Student Experience with Dr. Lubach?

- o Yes
- o No
- o Other (please specify) _____

*Q22. What is the highest degree that you intend to obtain at any institution (not just at UCSB)?

- o Bachelor's degree (BA, BS)
- o Master's degree (MA, MS)
- o PhD or EdD
- o Other (please specify)_____

Q23. If you are working, how many hours do you work per week?

- o Not applicable
- o 10 or fewer
- o 11-20 hours
- o 21-30 hours
- o 31-40 hours

*Q24. What was your cumulative grade point average (GPA) at the end of the Fall 2012 quarter?

*Q25. Please rate the following statements using the scale below:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

_____I am knowledgeable about the Student Health services at UCSB
_____I know how to utilize library resources/services
_____I know where to go for academic counseling/advising
_____I am knowledgeable of the Transfer Student Association (TSA) and its services
_____I am knowledgeable about the transfer student resources at UCSB
_____I know where to go for the information I need
_____I have familiarized myself with the campus
_____I am knowledgeable about UCSB's mission as a research university
_____I am knowledgeable of the EOP Transfer/Continuing Students Program (T/CSP)
_____I am knowledgeable of the Transfer Resource Team and Transfer Student Mentors
_____I am aware of the upcoming Transfer Student Success Course (ED 118) offered every winter quarter
_____I am knowledgeable of the free tutoring services offered by at the Center Learning Assistance Services (CLAS)
_____I am knowledgeable of the departments/centers at the Student Resource Building
_____I am knowledgeable of the counseling services (e.g. stress management, substance abuse)

*Q26. How likely are you to do the following while at UCSB?

1 – No chance, 2 – Very little chance, 3 – Some chance, 4 – Very good chance

[SOCIAL ACTIVITIES]

- Participate in student clubs and/or organizations
- Join a fraternity or sorority
- Participate in intramural or recreational sports
- Participate in student protests or demonstrations
- Transfer to another college before graduating
- Be satisfied with UCSB
- Participate in volunteer or community service work
- Participate in student clubs/groups
- Participate in the Educational Abroad Program (EAP)

[ACADEMIC ACTIVITIES]

- Meet with professors during office hours
- Ask questions during lectures
- Look for research opportunities
- Meet with TAs during office hours
- Look for work internships
- Seek tutoring for challenging courses

- Ask questions during TA discussion sections
- Seek academic counseling from your major's department
- Pursue graduate school

*Q27. Please rate yourself on each of the following traits:

1 – Poor, 2 – Below Average, 3 – Above Average, 4 – Excellent

- Academic ability
- Computer skills
- Drive to achieve
- Emotional health
- Leadership ability
- Mathematical skills
- Reading comprehension skills
- Self-confidence (intellectual)
- Self-confidence (social)
- Understanding of others
- Writing ability

*Q28. In terms of your transition to UCSB, please rate the following statements:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

- I have established more than one network of friends
- I have had a smooth transition into UCSB
- I find the environment at UCSB to be welcoming
- I have not had any difficulty making new friends
- I often feel lonely/isolated
- I am NOT having any difficulty meeting other transfer students
- I have adjusted to the quarter system
- I am having difficulty balancing my social life with my academic responsibilities
- I can easily relate to the people around me
- I struggle to meet the academic standards at UCSB
- I am concerned about meeting the time-to-degree requirements for my major
- I am content with my major
- I have no concerns
- I am worried about financing my education
- I worry about balancing work with school

OPTIONAL OPEN-ENDED QUESTIONS

Q29. Reflecting on your experience, what are some of the challenges/difficulties you have experienced as a transfer student at UCSB? (Your responses will be very helpful to future transfer students at UCSB).

Q30. Reflecting on your experience, what can UCSB do to facilitate the transition of NEW transfer students? (Your responses will be very helpful to future transfer students at UCSB)

Q31. Is there anything else you would like to share with UCSB about your transfer experience?

OPTIONAL INTERVIEW PARTICIPATION

Thank you for your participation in the Transfer Student Transition Survey (TSTS) study. As part of this study, researchers would like to conduct short follow-up interviews. Your decision to participate in an interview and your contact information will not be connected with your answers in any way. Your participation in follow-up interviews is completely voluntary.

Note: Interviews to be scheduled during summer and fall quarter 2013 and/or based on your availability.

*Q32. Would you like to participate in a follow-up interview?

- o Yes
- o No

CONTACT INFORMATION

*Q33. Please enter your name (last name optional):

*Q34. At what email address can you be contacted? Please enter.

Q35. Please indicate the type of interview you would be willing to participate (check all that apply):

- o Face-to-face
- o On-campus focus group (group of 3-4 students)
- o Off-campus focus group (group of 3-4 students)
- o Other (please specify)

Appendix B

TSTS 2013-14

SURVEY CONSENT FORM

TRANSFER STUDENT TRANSITION SURVEY (TSTS) ACADEMIC YEAR 2013-2014

WHAT IS THE TRANSFER STUDENT TRANSITION SURVEY (TSTS)? The Transfer Student Transition Survey (TSTS) is an online survey administered by UCSB's Center for Advanced Studies of Individual Differences (CASID) to incoming community college transfer students over the age of 18. The purpose of this study is to examine the transition and adjustment of transfer students from the 2013-2014 cohort. Results from this study will be shared with the Division of Student Affairs in order to assess existing transfer student outreach, services, and programs at UCSB.

PARTICIPATION: This study is voluntary, and you are under no obligation to participate - you may withdraw at any time by closing your browser. Depending on your answers, this survey will take approximately 10-15 minutes to complete.

ANONYMITY: This survey is anonymous, and no identifying information will be connected with your responses. If you choose to participate you will be prompted to create your own identification code, which will be used to match your responses with any subsequent or follow-up Transfer Student Transition Surveys (TSTS) you fill out for this study during the 2013-2014 academic year. All survey data will be collected and stored using SurveyMonkey's ProPlan, which utilizes Secure Socket Layer (SSL) encryption for optimal security.

CONFIDENTIALITY: Should you choose to participate in a follow-up interview all your responses will be kept strictly confidential and pseudonyms (i.e., fake name) will be assigned to all participants.

POTENTIAL BENEFITS & RISKS: The information you provide will help CASID researchers and Student Affairs officials understand how best to serve the needs of community college transfer students at UCSB. By reflecting on your own experiences as a transfer student at UCSB the feedback can potentially benefit future community college transfer students, colleges/universities, and researchers. Thus, your participation is invaluable.

WHO CAN I CONTACT FOR MORE INFORMATION? If you have any questions regarding this survey, please contact graduate researcher, Veronica L. Fematt, at vfematt@education.ucsb.edu

YOUR RIGHTS AS A PARTICIPANT: If you have any concerns or questions regarding your rights as a participant in this study, you may contact Melissa Warren from the Human Subjects Committee (HSC) at (805) 893-3807 or e-mail warren@research.ucsb.edu. For more information about your rights as a participant please see:

http://www.research.ucsb.edu/media/11223/human_subjects_bill_of_rights.pdf

*Q1. If you are willing to participate in this study, please indicate by checking one of the options below:

- o Yes, I want to participate and take the survey □
- o No thanks, I do not wish to participate

[IF A PARTICIPANT SELECTS "NO," THEY ARE REDIRECTED TO A THANK YOU MESSAGE AND THE SURVEY IS CLOSED]

[QUESTIONS WITH AN ASTERISK (*) ARE MANDATORY AND CANNOT BE SKIPPED.]

In order to match your responses with any follow-up surveys, we are asking you to generate your own personalized ID so we can match responses but not identify you. (Your personalized ID is only used to match survey responses and not to identify students – all surveys are anonymous).

*Q2. Please type the first four numbers of your UCSB perm number followed by the month and day you were born in mm/dd format (Example: If my perm number is 1234567 and I was born on January 9, my ID is 12340109).

_____

BACKGROUND INFORMATION

*Q3. What is your gender?

- o Male
- o Female

*Q4. Please list your age:

*Q5. What is the ethnicity you MOST identify with? □

- o African-American/Black □
- o Asian/Pacific Islander □
- o Mexican/Latino/a
- o Middle Eastern □
- o Native American/American Indian □
- o White/Caucasian □
- o Other (please specify): _____

*Q6. What is the highest level of formal education obtained by your mother?

_____ 1) Grammar school or less
_____ 2) Some high school

_____ 3) High school graduate
_____ 4) Some college
_____ 5) Associate degree
_____ 6) Bachelor's degree
_____ 7) Graduate degree (master's, doctoral, or professional)
_____ 8) Don't know, not applicable

*Q7. What is the highest level of formal education obtained by your father?
_____ 1) Grammar school or less
_____ 2) Some high school
_____ 3) High school graduate
_____ 4) Some college
_____ 5) Associate degree
_____ 6) Bachelor's degree
_____ 7) Graduate degree (master's, doctoral, or professional)
_____ 8) Don't know, not applicable

*Q8. Are you currently?
- o Single
- o Married
- o Separated, divorced, or widowed

Q9. Military Status:
- o Not applicable
- o ROTC, cadet, or midshipman at a service academy
- o In active duty
- o Reserves/national guard
- o Individual ready reserve (IRR)
- o A discharged veteran NOT serving in active duty, reserves, or national guard

COMMUNITY COLLEGE INFORMATION

*Q10. What community college did you transfer from? If you attended multiple schools, please choose the college where you have taken the MOST classes.

[DROP DOWN MENU INCLUDES ALPHABETICAL LISTING OF CALIFORNIA COMMUNITY COLLEGES, AN "OUT-OF-STATE" AND "NOT LISTED" OPTION]

*Q11. Which of the following comes closer to the TOTAL amount of time you attended the community college system prior to transfer?
- o 1 to 1.5 years
- o 2 to 2.5 years
- o 3 to 3.5 years
- o 4 to 4.5 years
- o 5 to 5.5 years
- o More than 5.5 years

- Other (please specify) _____

*Q12. Did you complete an A.A./A.S. degree before transferring to UCSB?

- No, I did not complete an AA/AS degree
- Yes, I completed an AA/AS to Transfer degree (AA-T or AS-T) as part of my major requirements
- Yes, I completed multiple AA/AS degrees
- Yes, I completed an AA/AS degree
- Other (please specify) _____

*Q13. Taking into consideration ALL your community college experience, how often did you do the following?

1 – Never, 2 – Not often, 3 – often, 4 – Very often, Not applicable

- Seek academic assistance from your peers outside of class
- Seek academic assistance from your instructors outside of class
- Seek academic assistance from a counselor
- Meet with a transfer center counselor for information on the transfer process
- Seek out tutoring services
- Take notes during class

*Q14. How often did you use the following services at your community college?

1 – Never, 2 – Not Often, 3 – Often, 4 – Very Often, 5 – Not Applicable

- Transfer Center
- Financial Aid Office
- Equal Opportunity Program (EOP)
- Counseling
- Career Center
- Tutoring Center
- Other (please specify) _____

Q15. Did you participate in any CSU/UC student transfer agreements (Example: TAG, TAP, IGETC)? (Check ALL that apply):

- Transfer Admission Guarantee (TAG)
- Transfer Alliance Program (TAP)
- Intersegmental General Education Transfer Curriculum (IGETC)
- I did not complete any CSU/UC transfer agreements
- Other (please specify)

ED 118 PARTICIPATION

Q16. Are you currently taking ED 118 The Research University and the Transfer Student Experience with Dr. Don Lubach?

- Yes
- No

[SKIP LOGIC DIRECTS ED 118 PARTICIPANTS TO NEXT SECTION AND DIRECTS NON-COURSE SURVEY PARTICIPANTS TO Q. XX]

ED 118 PARTICIPANTS

*Q17. Would you recommend ED 118 to NEW transfer students?

- Yes
- No
- Maybe
- Other (please specify)

*Q18. Please rate the following statements:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

- ED 118 has helped facilitate my transition to UCSB
- ED 118 has introduced me to academic resources on campus
- ED 118 has introduced me to campus clubs/organizations
- ED 118 has better prepared me for my undergraduate career at UCSB
- ED 118 has taught me the mission/purpose of the research university
- ED 118 has encouraged me to seek out research opportunities
- ED 118 has provided me with a sense of belonging
- ED 118 has provided me with an avenue to form new friendships
- ED 118 has encouraged me to use campus resources and services
- ED 118 has helped me build skills to be successful at UCSB

Q19. If you believe ED 118 has helped you academically, please share and/or describe how ED 118 has helped you academically:

Q20. If you believe ED 118 has helped you socially, please share and/or describe how ED 118 has helped you socially:

ED 118 NONPARTICIPANTS

Q21. If you were not enrolled in ED 118, The Research University and the Transfer Student Experience, this winter quarter, please indicate why you chose not to enroll in ED 118:

FOUR-YEAR UNIVERSITY INFORMATION

*Q22. Please list the quarter and year you were admitted to UCSB (example: Fall 2013):

*Q23. Please list your major as was indicated on your application to UCSB:

[DROP DOWN MENU OF UNDERGRADUATE MAJORS AT UCSB AND INCLUDES AN "UNDECLARED" OPTION]

*Q24. What was your cumulative grade point average (GPA) at the time you applied for admission at UCSB?

*Q25. What is the highest degree that you intend to obtain at any institution (not just at UCSB)?

- o Bachelor's degree (BA, BS)
- o Master's degree (MA, MS)
- o PhD or EdD
- o Medical degree (MD)
- o Juris degree (JD)
- o Other (please specify)_____

Q26. If you are working, how many hours do you work per week?

- o Not applicable
- o 10 or fewer
- o 11-20 hours
- o 21-30 hours
- o 31-40 hours

*Q27. What was your cumulative grade point average (GPA) at the end of the Fall 2013 quarter?

*Q28. Please rate the following statements using the scale below:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

_____I know how to use the services at the library
_____I know where to go for academic counseling
_____I know where to go for information about my major's requirements
_____I know where to go for the information I need
_____I have familiarized myself with the campus
_____I am aware of the free tutoring services offered by the Center Learning Assistance Services (CLAS)
_____I am aware of the services offered at the Student Resource Building (SRB)
_____I am aware of the counseling services offered on campus (e.g. stress management, substance abuse)

*Q29. Please rate the following statements using the scale below:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

- I am aware of the Transfer Student Association (TSA)
- I am aware of the transfer student resources at UCSB
- I am aware of the EOP Transfer/Continuing Students Program (T/CSP)
- I am aware of the Transfer Mentor Team
- I am aware of the Transfer Student Mentor Program

*Q30. How likely are you to do the following while at UCSB?

1 – No chance, 2 – Very little chance, 3 – Some chance, 4 – Very good chance

[ACADEMIC AND SOCIAL ACTIVITIES]

- Join a student club and/or organization
- Meet with professors during office hours
- Ask questions during lectures
- Look for research opportunities
- Meet with TAs during office hours
- Look for work internships
- Apply for research positions
- Seek tutoring for challenging courses
- Ask questions during TA discussion sections
- Seek academic counseling from your department
- Enroll in a research assistant position/opportunity
- Start your own student club/organization

*Q31. In terms of your transition to UCSB, please rate the following statements:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

- I have established more than one network of friends
- I have had an easy transition into UCSB
- I am comfortable approaching professors
- I find the environment at UCSB welcoming
- I am having difficulty making new friends
- I attend professor office hours
- I often feel lonely
- I am having difficulty meeting other transfer students
- I have adjusted to the quarter system
- I attend TA office hours
- I can relate to the people around me
- I find it difficult/overwhelming to ask questions in lectures
- I often worry about balancing work with school
- I often feel isolated

- I find it difficult/overwhelming to ask questions in TA discussion sections

OPTIONAL OPEN-ENDED QUESTIONS

Q32. Reflecting on your experience, what are some of the challenges/difficulties you have experienced as a transfer student at UCSB? (Your responses will be very helpful to future transfer students at UCSB).

Q33. Reflecting on your experience, what can UCSB do to facilitate the transition of NEW transfer students? (Your responses will be very helpful to future transfer students at UCSB)

Q34. Is there anything else you would like to share with UCSB about your transfer experience?

OPTIONAL INTERVIEW PARTICIPATION

Thank you for your participation in the Transfer Student Transition Survey (TSTS) study. As part of this study, researchers would like to conduct short follow-up interviews. Your decision to participate in an interview and your contact information will not be connected with your answers in any way. Your participation in follow-up interviews is completely voluntary.

Note: Interviews to be scheduled during summer and/or fall 2014 and/or based on your availability.

*Q35. Would you like to participate in a follow-up interview?

- Yes
- No

CONTACT INFORMATION

*Q36. Please enter your name (last name optional):

*Q37. At what email address can you be contacted? Please enter.

Appendix C

TSTS 2014-15

SURVEY CONSENT FORM

TRANSFER STUDENT TRANSITION SURVEY (TSTS) ACADEMIC YEAR 2014-2015

WHAT IS THE TRANSFER STUDENT TRANSITION SURVEY (TSTS)? The Transfer Student Transition Survey (TSTS) is an online survey administered by UCSB's Center for Advanced Studies of Individual Differences (CASID) to incoming community college transfer students over the age of 18. The purpose of this study is to examine the transition and adjustment of transfer students from the 2014-2015 cohort. Results from this study will be shared with the Division of Student Affairs in order to assess existing transfer student outreach, services, and programs at UCSB.

PARTICIPATION: This study is voluntary, and you are under no obligation to participate - you may withdraw at any time by closing your browser. Depending on your answers, this survey will take approximately 10-15 minutes to complete.

ANONYMITY: This survey is anonymous, and no identifying information will be connected with your responses. If you choose to participate you will be prompted to create your own identification code, which will be used to match your responses with any subsequent or follow-up Transfer Student Transition Surveys (TSTS) you fill out for this study during the 2014-2015 academic year. All survey data will be collected and stored using SurveyMonkey's ProPlan, which utilizes Secure Socket Layer (SSL) encryption for optimal security.

CONFIDENTIALITY: Should you choose to participate in a follow-up interview all your responses will be kept strictly confidential and pseudonyms (i.e., fake name) will be assigned to all participants.

POTENTIAL BENEFITS & RISKS: The information you provide will help CASID researchers and Student Affairs officials understand how best to serve the needs of community college transfer students at UCSB. By reflecting on your own experiences as a transfer student at UCSB the feedback can potentially benefit future community college transfer students, colleges/universities, and researchers. Thus, your participation is invaluable.

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Subjects Committee (HSC) at (805) 893-3807 or e-mail warren@research.ucsb.edu. For more information about your rights as a participant please see:

http://www.research.ucsb.edu/media/11223/human_subjects_bill_of_rights.pdf

*Q1. If you are willing to participate in this study, please indicate by checking one of the options below:

- o Yes, I want to participate and take the survey □
- o No thanks, I do not wish to participate

[IF A PARTICIPANT SELECTS "NO," THEY ARE REDIRECTED TO A THANK YOU MESSAGE AND THE SURVEY IS CLOSED]

[QUESTIONS WITH AN ASTERISK (*) ARE MANDATORY AND CANNOT BE SKIPPED.]

In order to match your responses with any follow-up surveys, we are asking you to generate your own personalized ID so we can match responses but not identify you. (Your personalized ID is only used to match survey responses and not to identify students – all surveys are anonymous).

*Q2. Please type the first four numbers of your UCSB perm number followed by the month and day you were born in mm/dd format (Example: If my perm number is 1234567 and I was born on January 9, my ID is 12340109).

_____

BACKGROUND INFORMATION

*Q3. What is your gender?

- o Male
- o Female

*Q4. Please list your age:

*Q5. What is the ethnicity you MOST identify with? □

- o African-American/Black □
- o Asian/Pacific Islander □
- o Mexican/Latino/a
- o Middle Eastern □
- o Native American/American Indian □
- o White/Caucasian
- o Multiethnic/Mixed□
- o Other (please specify): _____

*Q6. What is the highest level of formal education obtained by your mother?
_____ 1) Grammar school or less
_____ 2) Some high school
_____ 3) High school graduate
_____ 4) Some college
_____ 5) Associate degree
_____ 6) Bachelor's degree
_____ 7) Graduate degree (master's, doctoral, or professional)
_____ 8) Don't know, not applicable

*Q7. What is the highest level of formal education obtained by your father?
_____ 1) Grammar school or less
_____ 2) Some high school
_____ 3) High school graduate
_____ 4) Some college
_____ 5) Associate degree
_____ 6) Bachelor's degree
_____ 7) Graduate degree (master's, doctoral, or professional)
_____ 8) Don't know, not applicable

*Q8. Are you currently?
- o Single
- o Married
- o Separated, divorced, or widowed

Q9. Military Status:
- o Not applicable
- o ROTC, cadet, or midshipman at a service academy
- o In active duty
- o Reserves/national guard
- o Individual ready reserve (IRR)
- o A discharged veteran NOT serving in active duty, reserves, or national guard

COMMUNITY COLLEGE INFORMATION

*Q10. What community college did you transfer from? If you attended multiple schools, please choose the college where you have taken the MOST classes.

[DROP DOWN MENU INCLUDES ALPHABETICAL LISTING OF CALIFORNIA COMMUNITY COLLEGES, AN "OUT-OF-STATE" AND "NOT LISTED" OPTION]

*Q11. Which of the following comes closer to the TOTAL amount of time you attended the community college system prior to transfer?

- o 1 to 1.5 years

- 2 to 2.5 years
- 3 to 3.5 years
- 4 to 4.5 years
- 5 to 5.5 years
- More than 5.5 years
- Other (please specify) _____

*Q12. Did you complete an A.A./A.S. degree before transferring to UCSB?

- No, I did not complete an AA/AS degree
- Yes, I completed an AA/AS to Transfer degree (AA-T or AS-T) as part of my major requirements
- Yes, I completed multiple AA/AS degrees
- Yes, I completed an AA/AS degree
- Other (please specify) _____

*Q13. Taking into consideration ALL your community college experience, how often did you do the following?

1 – Never, 2 – Not often, 3 – often, 4 – Very often, Not applicable

- Seek academic assistance from your peers outside of class
- Seek academic assistance from your instructors outside of class
- Seek academic assistance from a counselor
- Meet with a transfer center counselor for information on the transfer process
- Seek out tutoring services
- Take notes during class

*Q14. How often did you use the following services at your community college?

1 – Never, 2 – Not Often, 3 – Often, 4 – Very Often, 5 – Not Applicable

- Transfer Center
- Financial Aid Office
- Equal Opportunity Program (EOP)
- Counseling
- Career Center
- Tutoring Center
- Other (please specify) _____

Q15. Did you participate in any CSU/UC student transfer agreements (Example: TAG, TAP, IGETC)? (Check ALL that apply):

- Transfer Admission Guarantee (TAG)
- Transfer Alliance Program (TAP)
- Intersegmental General Education Transfer Curriculum (IGETC)

- I did not complete any CSU/UC transfer agreements
- Other (please specify)

ED 118 PARTICIPATION

*Q16. Did you take ED 118 The Research University and the Transfer Student Experience with Dr. Don Lubach last quarter (i.e., Fall 2014)?

- Yes
- No

[SKIP LOGIC DIRECTS ED 118 PARTICIPANTS TO NEXT SECTION AND DIRECTS NON-COURSE SURVEY PARTICIPANTS TO Q. XX]

ED 118 PARTICIPANTS

*Q17. Would you recommend ED 118 to NEW transfer students?

- Yes
- No
- Maybe
- Other (please specify)

*Q18. Please rate the following statements:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

- ED 118 has helped facilitate my transition to UCSB
- ED 118 has introduced me to academic resources on campus
- ED 118 has introduced me to campus clubs/organizations
- ED 118 has better prepared me for my undergraduate career at UCSB
- ED 118 has taught me the mission/purpose of the research university
- ED 118 has encouraged me to seek out research opportunities
- ED 118 has provided me with a sense of belonging
- ED 118 has provided me with an avenue to form new friendships
- ED 118 has encouraged me to use campus resources and services
- ED 118 has helped me build skills to be successful at UCSB

Q19. If you believe ED 118 has helped you academically, please share and/or describe how ED 118 has helped you academically:

Q20. If you believe ED 118 has helped you socially, please share and/or describe how ED 118 has helped you socially:

ED 118 NONPARTICIPANTS

Q21. If you were not enrolled in ED 118, The Research University and the Transfer Student Experience, this past fall quarter, please indicate why you chose not to enroll in ED 118:

FOUR-YEAR UNIVERSITY INFORMATION

*Q22. Please list the quarter and year you were admitted to UCSB (example: Fall 2014):

*Q23. Please list your major as was indicated on your application to UCSB:

[DROP DOWN MENU OF UNDERGRADUATE MAJORS AT UCSB AND INCLUDES AN "UNDECLARED" OPTION]

*Q24. What was your cumulative grade point average (GPA) at the time you applied for admission at UCSB?

*Q25. What is the highest degree that you intend to obtain at any institution (not just at UCSB)?

- o Bachelor's degree (BA, BS)
- o Master's degree (MA, MS)
- o PhD or EdD
- o Medical degree (MD)
- o Juris degree (JD)
- o Other (please specify)_____

Q26. If you are working, how many hours do you work per week?

- o Not applicable
- o 10 or fewer
- o 11-20 hours
- o 21-30 hours
- o 31-40 hours

*Q27. What was your cumulative grade point average (GPA) at the end of the Fall 2014 quarter?

*Q28. Please rate the following statements using the scale below:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

_____I know how to use the services at the library
_____I know where to go for academic counseling
_____I know where to go for information about my major's requirements
_____I know where to go for the information I need
_____I have familiarized myself with the campus

_____I am aware of the free tutoring services offered by the Center Learning Assistance Services (CLAS)
_____I am aware of the services offered at the Student Resource Building (SRB)
_____I am aware of the counseling services offered on campus (e.g. stress management, substance abuse)

*Q29. Please rate the following statements using the scale below:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

- I am aware of the Transfer Student Association (TSA)
- I am aware of the transfer student resources at UCSB
- I am aware of the EOP Transfer/Continuing Students Program (T/CSP)
- I am aware of the Transfer Mentor Team
- I am aware of the Transfer Student Mentor Program

*Q30. How likely are you to do the following while at UCSB?

1 – No chance, 2 – Very little chance, 3 – Some chance, 4 – Very good chance

[ACADEMIC AND SOCIAL ACTIVITIES]

- Join a student club and/or organization
- Meet with professors during office hours
- Ask questions during lectures
- Look for research opportunities
- Meet with TAs during office hours
- Look for work internships
- Apply for research positions
- Seek tutoring for challenging courses
- Ask questions during TA discussion sections
- Seek academic counseling from your department
- Enroll in a research assistant position/opportunity
- Start your own student club/organization

*Q31. In terms of your transition to UCSB, please rate the following statements:

1-Strongly disagree, 2-Somewhat disagree, 3-Somewhat agree, 4-Strongly agree

- I have established more than one network of friends
- I have had an easy transition into UCSB
- I am comfortable approaching professors
- I find the environment at UCSB welcoming
- I am having difficulty making new friends
- I attend professor office hours
- I often feel lonely

- I am having difficulty meeting other transfer students
- I have adjusted to the quarter system
- I attend TA office hours
- I can relate to the people around me
- I find it difficult/overwhelming to ask questions in lectures
- I often worry about balancing work with school
- I often feel isolated
- I find it difficult/overwhelming to ask questions in TA discussion sections

OPTIONAL OPEN-ENDED QUESTIONS

Q32. Reflecting on your experience, what are some of the challenges/difficulties you have experienced as a transfer student at UCSB? (Your responses will be very helpful to future transfer students at UCSB).

Q33. Reflecting on your experience, what can UCSB do to facilitate the transition of NEW transfer students? (Your responses will be very helpful to future transfer students at UCSB)

Q34. Is there anything else you would like to share with UCSB about your transfer experience?

OPTIONAL INTERVIEW PARTICIPATION

Thank you for your participation in the Transfer Student Transition Survey (TSTS) study. As part of this study, researchers would like to conduct short follow-up interviews. Your decision to participate in an interview and your contact information will not be connected with your answers in any way. Your participation in follow-up interviews is completely voluntary.

Note: Interviews to be scheduled during summer and/or fall 2014 and/or based on your availability.

*Q35. Would you like to participate in a follow-up interview?

- Yes
- No

CONTACT INFORMATION

*Q36. Please enter your name (last name optional):

*Q37. At what email address can you be contacted? Please enter.