

**A MULTI-INSTITUTIONAL STUDY OF BLACK AND LATINA/O COMMUNITY
COLLEGE STUDENTS' TRANSFER INTENTIONS: A THEORY OF PLANNED
BEHAVIOR RECONCEPTUALIZATION**

by

Christopher James Nellum

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Higher Education)
in The University of Michigan
2014

Doctoral Committee:

Professor Phillip J. Bowman, Chair
Associate Professor Deborah F. Carter, Claremont Graduate University
Professor Emeritus Mark Chesler
Professor Janet H. Lawrence

DEDICATION

This research and dissertation is dedicated to my family. To every ancestor and descendent of a Nellum, Mouton, Davila, White, Mercadel, Webb, Streets, Hughes, and McClain, I hope this small contribution is reflective of our collective sacrifice, resilience, and merits.

TABLE OF CONTENTS

DEDICATION	ii
LIST OF TABLES	v
LIST OF FIGURES	vii
LIST OF APPENDICES	viii
ABSTRACT	ix
Chapter One: Introduction	1
History of Community Colleges and the Transfer Function.....	2
Statement of the Problem.....	4
The Cooling-Out Thesis.....	7
Research Aims	8
Chapter One Summary.....	10
Chapter Two: Literature Review I	12
Theoretical Approaches to Studying Upward Transfer	13
Status Attainment Models.....	13
College Impact Models	19
Interactionalist Models.....	25
Empirical Research on Upward Transfer.....	29
Student Background Characteristics	30
Institutional Factors.	37
Collegiate Experiences.....	42
Limitations of sociological research on upward transfer	51
The Need for An Integrated Social Psychological Model of Upward Transfer	55
Chapter Two Summary	58
Chapter Three: Literature Review II.....	60
Expectancy-Value Models	60
The Theory of Reasoned Action (TRA)	61
The Theory of Planned Behavior (TPB).....	64
The Role of Background Factors	67
Limitations of the Theory of Planned Behavior (TPB)	68
Predicting intentions from personal beliefs and attitudes: Empirical support	70
Predicting behavior: Empirical support	74

Chapter Three Summary	74
Chapter Four: Research Methods.....	75
Research Design.....	75
Research Questions.....	76
Data Collection Procedures.....	77
Research Sites	79
Research Sample.....	80
Survey Instrument.....	84
Measurement of Latent Constructs and Variables	84
Endogenous variable: Transfer Intentions (direct measure)	85
Behavioral, Normative, and Control Beliefs.....	85
Exogenous variables: Direct Measures of Attitudes, Subjective Norms, and Perceived Behavioral Control.....	86
Moderators: Policy-Relevant Collegiate Experiences	88
Analytic Strategy	91
Analytic Phases.....	92
Chapter Four Summary.....	102
Chapter Five: Results	103
Phase 1 - Research Question 1.....	103
Phase 2 - Preliminary analysis for structural models.....	119
Phase 3 - Research Question 2.....	121
Phase 4 - Research Question 3.....	127
Phase 5 - Research Question 4.....	133
Chapter Six: Conclusions & Discussion.....	139
Summary of the present study.....	139
Interpretation of Findings	141
An Emerging Integrated Psychosocial Model of Upward Transfer.....	142
Study Limitations.....	152
Implications for Future Research & Institutional Practice and Policy	153
Implications for Future Research.....	153
Implications for Institutional Practice and Policy.....	156
Concluding Thoughts.....	158
APPENDICES	160
REFERENCES	185

LIST OF TABLES

Table 2.1. Summary of Categories and Predictors of Upward Transfer.....	29
Table 4.1 Comparison of full study sample with Black and Latino subgroups (N = 1,872)	82
Table 5.1. Reliability coefficients of TPB factors	105
Table 5.2. Refined reliability coefficients of TPB factors	108
Table 5.3. Means and standard deviation of indicator variables for each factor by sample of interest.....	111
Table 5.4. Measurement model item loading for TPB constructs, standardized values and invariance test	115
Table 5.5. Attitude, subjective norms, perceived behavioral control and transfer intentions: Summary statistics (means, standard deviations, and correlations).....	119
Table 5.6. Transfer intentions as a function of racial group differences in attitude, subjective norm, perceived behavioral control: Summary statistics (means, standard deviations, and univariate F-test)	120
Table 5.7. Comparison of base form TRA and TPB models. Fit indices and results of LR-Test between models by racial group	122
Table 5.8. Direct effects of TRA constructs on transfer students –Black students (n = 154).....	124
Table 5.9. Direct effects of TPB constructs on transfer intentions – Latino students (n=831) ..	125
Table 5.10. TPB constructs as a function of enrollment length, developmental education participation, and perceived transfer climate differences: Summary statistics (means, standard deviations, and univariate F-Tests).....	128

Table 5.11. Direct effects of TPB constructs on transfer intentions. Multi-group comparison across policy-relevant collegiate experiences.	131
Table 5.12. Mean behavioral belief strengths and outcome evaluation, and correlations of belief x evaluation product with intention to transfer (behavior).	134
Table 5.13. Mean normative belief strength and motivation to comply, and correlations of belief x motivation product with intention to transfer (behavior).....	136
Table 5.14. Mean control belief strength and power of control factors, and correlations of belief x power product with intention to transfer (behavior)	137

LIST OF FIGURES

Figure 2.1. The Blau-Duncan Model of Status Attainment	14
Figure 2.2. The Wisconsin Model of Status Attainment	16
Figure 2.3. Berger-Milem Model of Organizational Impact on Student Outcomes	22
Figure 3.1. The theory of reasoned action	63
Figure 3.2. The theory of planned behavior.....	65
Figure 4.1. Hypothesized TPB measurement component.....	94
Figure 4.2. Hypothesized structural model of transfer intentions.....	98
Figure 5.1. Structural model of Black students' transfer intentions (TRA).....	124
Figure 5.2. Structural model of Latino students' transfer intentions (TPB)	126
Figure 6.1. An Emerging Integrated Psychosocial Model of Upward Transfer	144

LIST OF APPENDICES

APPENDIX A - RECRUITMENT EMAIL SCRIPT	161
APPENDIX B – INFORMED CONSENT.....	162
APPENDIX C – SURVEY OF COMMUNITY COLLEGE STUDENTS ATTITUDES AND BELIEFS.....	163

ABSTRACT

Community colleges currently enroll over one-third of all undergraduates and serve as the gateway to postsecondary education for increasing numbers of Americans in the 21st century, especially students of color. A significant portion of community college students aspire to transfer to a four-year college or university, but only 23% to 40% make this transition within six years of initial enrollment with disturbing racial/ethnic disparities. Existing studies offer sociological explanations for the persistent disparity in upward transfer rates between White community college students and lower rates for African American and Latino community college students. This “racial/ethnic transfer gap” is especially troubling because African American and Latino students not only rely disproportionately on community colleges for higher education access, but also report similar transfer aspirations to Whites upon entry.

The present theory-driven study aims to better explicate the social psychological factors that motivate community college students interested in upward transfer. This study seeks to better understand whether the constructs central to the Theory of Planned Behavior (TPB) explain variation in African American and Latino students’ intentions to transfer from a community college to a four-year college or university. Structural equation modeling was used with a sample of 154 African American and 831 Latino community college students enrolled at 6 institutions across the United States to test and extend the theory of planned behavior. Additional questions assessed whether policy-relevant collegiate experiences such as length of enrollment at a college, participation in developmental education, or perceptions of transfer climate moderate intentions to transfer.

Study findings support the importance of racial/ethnic-specific patterns, with clear distinctions between TPB predictors of transfer intentions for African American and Latino students. For Latino community college students, transfer intentions were predicted from attitudes, subjective norms, and perceived behavioral control; however, the model was only significant and meaningful for the Latino sample but not for African Americans. For the Latino students, significant attitudes reflected underlying beliefs about the instrumentality of transfer (e.g., leading to a better job and increased self-worth); subjective norms reflected expectations of non-academic (e.g., family members and close friends) and academic (e.g., counselors and faculty members) individuals; and control considerations included lack of academic capacity (e.g., study skills and developmental coursework) and financial constraints (e.g., insufficient money). The results also show that students who participated in developmental education courses or had a positive perception of transfer climate report differences in intentions to transfer. Future

research should go beyond TPB concepts to better understand social psychological mechanisms that motivate transfer intentions for African American community college students. The theory-driven findings on Latino community college students have important policy-relevant implications for targeted interventions to improve and support intentions to transfer and for future research on upward transfer.

Chapter One: Introduction

A key purpose of postsecondary education is to provide opportunities for individuals to pursue their educational goals¹. The emergence of community colleges in 1901 (then junior colleges) promised an alternate route to a baccalaureate degree for individuals who otherwise would have been excluded from postsecondary education (Brubacher & Rudy, 1997; Cohen & Brawer, 2008; Dougherty, 2001; Quigley & Bailey, 2003; Thelin, 2004). Since then, scholars have contentiously debated community colleges' contributions to eventual individual educational attainment², and their intended beneficiaries (P. M. Blau & Duncan, 1967; Dowd & Melguizo, 2008; Dowd, 2003; Rouse, 1995, 1998). Within that debate, the transfer function deserves special attention because it is supposed to be the mechanism that links community college students' educational goals to a baccalaureate degree (Clark, 1960; Grubb, 1991; Karabel & Halsey, 1977).

Although community colleges serve as the gateway to postsecondary education for increasing numbers of Americans in pursuit of a baccalaureate degree, only a select group of those students ultimately transfer to a four-year college or university (Bailey & Morest, 2006). Despite several crucial gaps in our understanding of the transfer function, extant research about community colleges has generated considerable knowledge about the range of factors that support or hinder the transfer of community college students to four-year institutions. Unfortunately, current research is unable to explain the imbalance in the use of the transfer

¹ Various referred to in existing literature as educational expectations, aspirations, goals, intentions, and ambitions (Ajzen, 1985; Bailey, Jenkins, & Leinbach, 2005; Conway, 2010).

² For this study, educational attainment refers to the highest level of education that an individual desires or has completed. Upward transfer or transfer represents a form of educational attainment, and refers to the educational transition that community college students must complete in order to enroll at a four-year institution.

function by different social groups (Karabel & Halsey, 1977; Karabel, 1974). In this inquiry, I utilize an attitudinal and motivational framework to better understand students' agency in the transfer process and why so few community college students make the important transition to a four-year college or university.

History of Community Colleges and the Transfer Function

The history of community colleges is intertwined with ideological debates about the original purpose and mission of these particular higher education institutions. For example, sociologists and higher education scholars continue to dispute whether early community colleges were characterized by an academic (e.g., transfer-oriented) or terminal (e.g., vocational- and certificate-oriented) curricula (Dougherty, 2001). This dispute continues to impact contemporary research on community colleges, and in some ways, reflects the historical evolution of these institutions.

Historians maintain that the larger discourse among education leaders early in the twentieth century serves as the best means to understand the origins of community colleges. In the broadest sense, education leaders of the time grappled with how to restructure and realign the evolving educational ladder in the United States (Thelin, 2004). William Harper, president of the University of Chicago, advanced a proposal which gave community colleges “the most enduring appeal” (Brubacher & Rudy, 1997, p. 254). Harper envisioned utilizing local initiatives to create lower academic colleges that would provide students with the opportunity to complete the first two years of baccalaureate education before enrolling at a four-year institution (Brubacher & Rudy, 1997; Thelin, 2004). This proposal appealed to other leaders because it reserved upper division coursework, and “otherwise advanced thinking”, for research institutions (Brubacher & Rudy, 1997, p. 254). As a result, Harper worked to establish Joliet Junior College

in 1901 which offered a liberal arts curriculum representing the first two years of work for the bachelor's degree. The campus attracted students "who otherwise would have never attended college" (Brubacher & Rudy, 1997, p. 256), and these students soon transferred with advanced standing to the University of Chicago, the University of Illinois, and even crossed the border and attended the University of Michigan (Quigley & Bailey, 2003).

Over time, the community college idea spread throughout the country, and because the colleges were primarily local initiatives, some of the new institutions had an academic mission that mirrored Joliet's, while others had a less academic emphasis (Brubacher & Rudy, 1997; Quigley & Bailey, 2003; Thelin, 2004). Historians highlight two other trends that emerged between 1940 and 1990 that had long-term impacts on the concept of community colleges in the United States. First, the Second World War ended and more of the American public demanded access to postsecondary education; they maintain that without community colleges, it would have been impossible to accommodate the increase in college-going numbers (Brubacher & Rudy, 1997; Cohen & Brawer, 2008; Thelin, 2004). Second, due to heightened demand for vocational jobs, an increase in technical curricula eclipsed "the original transfer mission of community colleges" (Thelin, 2004, p. 151). These developments assisted America's massification of higher education and transformed community colleges into multi-purpose access-oriented institutions.

The contemporary community college landscape reflects the historical evolution and multi-faceted utility of these institutions. Community colleges now have multiple, and often, competing missions that include transfer preparation, vocational-technical education, continuing education, community service and outreach, and developmental/remedial education (Cohen & Brawer, 2008). Also, community colleges enroll students whose behaviors indicate that they use

these institutions for a variety of reasons that include transfer preparation, vocational and technical interests, and leisure study (Bahr, 2010b).

The community college sector is the most complex and contradictory segment of American higher education (Cohen & Brawer, 2008). As such, the students who enroll in these institutions have varying goals, aspirations, and purposes for enrolling (Eagan & Jaeger, 2009). Therefore, it is important to acknowledge that the focus on upward transfer, the movement of a student from a community college to a four-year college or university, is not intended to imply that transfer is the only worthy objective at community colleges. In fact, there is a growing body of literature that emphasizes the social and economic benefits of the educational and terminal options offered by community colleges (Belfield & Bailey, 2011). Nonetheless, because community colleges are the primary point of access to postsecondary education for so many Americans that aspire to attain a baccalaureate degree, I propose that understanding student use of the transfer function is especially important because these institutions should be true to their original mission of offering access to real educational and social mobility (P. M. Blau & Duncan, 1967; Brubacher & Rudy, 1997; Shaw & London, 2001).

Statement of the Problem

Today, community colleges enroll 35% to 40% of all undergraduates (approximately 8 million students) in American postsecondary institutions (American Association of Community Colleges, 2013). A disproportionate amount of these undergraduate are students of color, students of low socioeconomic status, students who are the first in their families to attend college, and underprepared students (Bailey & Morest, 2006; Dowd, 2007; Kolesnikova, 2010; Voorhees, 1987). While it remains true that the students who enroll at a community college do so for a variety of reasons, approximately two-thirds of these students indicate transfer to a four-

year institution and earning a baccalaureate degree as their ultimate goal. Yet, only 23% to 40% (only 500,000 of the approximately 5 million bachelor's degree aspirations) of these students make this transition within four to six years of initial enrollment (Cohen & Brawer, 2008; NCES, 2001, 2003, 2008). Notwithstanding a number of policies intended to strengthen the transfer function, historically underserved students (e.g., low income and students of color) who attend community colleges are the least likely to transfer successfully to a four-year institution, despite reporting similar educational goals (Bailey & Morest, 2006; Dowd, 2003). Examining the complexities related to educational attainment in the community college context is of enormous importance given the role that these institutions play in providing access postsecondary education and the opportunity to earn a baccalaureate degree (Karabel, 1986; NCES, 2008).

In addition to the urgency of the demographic trends and social inequities outlined above, the transfer function continues to serve as a critical indicator for state and federal governments that express a renewed interest in institutional accountability and commitment to support upward transfer (Cohen & Brawer, 2008; Goldhaber, Gross, & DeBurgomaster, 2008; McLendon, Tuchmayer, & Park, 2009; Roksa & Keith, 2008; Roksa, 2009). Although community colleges serve many purposes, the recent accountability movement emphasizes student outcomes (e.g., transfer and degree completion) and complicates these institutions' historic commitment to providing access to postsecondary education (Dougherty, 2001). Contemporary consideration of the transfer function is driven primarily by the perceived decline in transfer rates to four-year institutions, the need to increase the number of American baccalaureate degree holders in order to remain competitive in a global economy, and a desire to promote a diverse educated citizenry in a post-affirmative action era (Bender, 1991; Bernstein, 1986; Grubb, 1991; Hebel, 2000; NCES, 2001; The White House, 2010). For these reasons, there are also economic and social

imperatives that contribute to continued concern with the role of the transfer function as a vehicle for educational attainment and economic prosperity (Bailey & Morest, 2006).

Significance of the Problem

The fact that students' educational interests and goals change or shift during the undergraduate experience is not a novel concept. Interest in improving our understanding of community college students' educational and degree goals emerged as a major concern half a century ago (Baird, 1971; Clark, 1960). Indeed, an undergraduate education has long been portrayed as a period of exploration and growth, characterized by students who change their program of study numerous times, stop out or dropout of college, or decide to pursue graduate education (Pascarella & Terenzini, 2005). Specific to the community college sector, however, a substantial and seemingly systematic lowering of educational goals at college entry by community college students post-matriculation has particularly troubled scholars.

Perhaps the reason scholars were (and remain) worried about the "effect" of these institutions on eventual educational attainment (e.g., transfer success) was spawned by the long-standing ideological debate which considered why community colleges were established (Clark, 1960; Karabel, 1986; Long & Kurlaender, 2009; Melguizo, 2009). For example, on the one hand some scholars argued that community colleges were founded out of necessity, given the expansion of the college-age population and a need to provide education to the masses (Clark, 1960). These scholars contend that community colleges emerged as a byproduct of society's need to maintain the occupational order. On the other hand, subsequent theorists draw attention to the assertion that the establishment of community colleges formed a bottom track of higher education defined by inter-institutional and social stratification (Cohen & Brawer, 2008; Dougherty, 2001; Karabel & Halsey, 1977; Karabel, 1986). These scholars contend that even

though community colleges are characterized commonly as institutions that provide an alternative route to a baccalaureate degree, few lower socioeconomic status students or students of color who enroll in the two-year sector of postsecondary education ever transfer to a four-year institution (Cohen & Brawer, 2008; Dougherty, 2001; NCES, 2001). This inconsistency is even more troubling when one considers evidence which suggests the educational goals of students who choose to enter a community college have remained high overtime (Cohen & Brawer, 2008).

The Cooling-Out Thesis

One of the most provocative claims about community colleges and community college students' educational goals is that a *cooling out* of students' educational ambitions occurs once students enroll in these institutions (Dougherty, 2001). In his seminal study, Burton Clark, observed what he characterized as a mass disengagement from initial educational ambitions (i.e., the transfer track) and offered a hypothesis with which he attempted to make sense of what he described as the major function of community colleges. Clark (1960) hypothesized that students with higher academic and life goal expectations were subtly but effectively reoriented away from the transfer track in favor of more vocational alternatives. The lynchpin of Clark's cooling out thesis was that academic counselors at community colleges were responsible for identifying students with unrealistically ambitious, disengaging them from their academic pursuits (e.g., upward transfer), and redirecting them to "appropriate" educational endeavors (e.g., terminal or vocational credentials). Though untested systematically at the time, Clark believed that the cooling out process was occurring at most community colleges in the United States (Clark, 1980). There remains a longstanding ideological debate among scholars about the reasons for cooling out students, but what is clear from Clark's argument is that educational goals are

important for future academic success and that various aspects of the academic environment can negatively affect these goals.

As a result, there have been numerous attempts to estimate the impact of the cooling out process on students' educational goals (Romano, 2004). The vast majority of empirical attention to this problem has interrogated whether students cool out (i.e., lower educational aspirations) or "warm up" (i.e., raise educational aspirations) while enrolled at a community college (Bahr, 2008a; Baird, 1971; Clark, 1960, 1980; Conway, 2010; Romano, 2004; Rosenbaum, Deil-Amen, & Person, 2006). While the evidence is mixed, most scholars contend that attendance at a community college diminishes educational goals, but offer few explanations for that reduction.

Research Aims

To improve the use of the transfer function, it is necessary to possess a deeper understanding of community college students' considerations when making decisions related to educational goals. In particular, if we can determine under what conditions students remain committed to upward transfer and what conditions hinder that commitment, more effective intervention strategies can be designed, piloted, and implemented to support these students' success (Davis, Ajzen, Saunders, & Williams, 2002a). Aside from Clark's assertion that academic counselors may affect students' educational goals (1960), little is known about what influences students' educational goals or why they change after matriculation at a community college. There is, however, considerable empirical evidence that identifies characteristics, variables, and experiences that contribute to or detract from students' probability of upward transfer (Cohen & Brawer, 2008; NCES, 2001, 2003, 2008). However, much of this literature is

unable to provide substantive insights into the student-level psychosocial processes³ that occur prior to the observation of eventual behavior.

Some scholars do acknowledge the role of psychosocial factors and use variables such as educational aspirations to study upward transfer (Cabrera, Burkum, & La Nasa, 2005; Dougherty & Kienzl, 2006; Lee & Frank, 1990; Peng, 1978; Wang, 2010). These approaches have not proved useful for alleviating students' multiple and competing reasons for enrolling in a community college or predicting future behavior (i.e., upward transfer) as suggested by the persistent low transfer rates. The present study seeks answers to some of these questions by examining the building blocks (i.e., psychosocial factors) that contribute to individual motivation – assessed as transfer intention – which is theorized to ultimately influence behavior such as transfer (Ajzen & Fishbein, 1980; Ajzen, 1985, 1991, 2005, 2012a; Fishbein & Ajzen, 1975, 2009).

The main premise of this study is that in order to understand and reduce the observed gap between students' expressed educational goals and actual behavior, researchers must distinguish the act of transfer from the antecedents that are fundamental to the act. Thus, rather than employ a statistical model to identify variables that predict transfer (the act), this study relies on a well-established theoretical framework to consider the beliefs and attitudes that contribute to Black American and Latina/o American⁴ community college students' intentions (an antecedent) to transfer to a four-year college or university. The overarching goal of this study is to deepen our understanding of psychosocial factors in relation to the educational goal of upward transfer and

³ Psychosocial factors relate to one's psychological processes in, and interaction with, a social environment.

⁴ The phrases Black American and Latina/o American are preferred, but Black and Latino will be used throughout the remainder of this dissertation for simplicity.

situate the findings in existing transfer research. Recognizing the inability of extant literature to explain transfer behavior, the three research aims of the present study include:

- The first aim of this study is to determine whether behavioral intention (i.e., transfer intentions) is a valid construct to describe the educational goal of upward transfer.
- The second aim of this study is to explore the structure and determinants of transfer intentions. In addition, this study assessed if the relationship between the determinants of behavioral intentions (i.e., attitudes, subjective norms, and perceived behavioral control) and actual transfer intentions differed based on students' collegiate experiences.
- The third aim of this study is to identify specific beliefs and considerations that contribute to the development of transfer intentions.

Informed by the theory of planned behavior (Ajzen, 1985), the focus on behavioral (i.e., transfer) intentions was warranted because a number of existing studies establish that the best predictor of a behavior such as upward transfer is the intention to perform that behavior (Fishbein & Ajzen, 1975). As such, this study explored the relationship between three types of predispositions (i.e., attitudes, social norms, and perceived behavioral control) and community college students' transfer intentions. Furthermore, this study identified whether the theoretical relationships outlined by Ajzen might explain the observed relationships between demographic characteristics, particular collegiate experiences, and characteristics of institutional climate and the likelihood of transfer identified by existing research.

Chapter One Summary

In this chapter, I discussed the imbalance between the number of baccalaureate degree aspirants who enter postsecondary education via a community college and those who attain at their desired level. I also offered statistics that suggest Black and Latino students are especially challenged in utilizing the transfer function to reach a four-year institution. I also presented a brief history of community colleges, the transfer mission, and the cooling-out thesis to provide

context to the issue of dismal transfer rates, which remains at the forefront of contemporary policy discussions. Finally, I outlined the research aims for the current study.

In the next two chapters, I provide a comprehensive review of theoretical and empirical literature pertaining to community college transfer and emphasize critical gaps that provide a context for the present study. In the Chapter Two, I review and critique the dominant, mainly sociological, theoretical frameworks used to study transfer, while I use Chapter 3 to introduce an alternative social psychological perspective that might drive future research on upward transfer. While these theories draw from distinct intellectual traditions, it is important to cover the extant frameworks and empirical work on transfer in order to demonstrate how the present study adds to and departs from the more traditional approaches to studying transfer.

Chapter Two: Literature Review I

The purpose of this chapter is to introduce, summarize, and critique the dominant theoretical frameworks used by scholars and researchers to study upward transfer, and to present the accompanying empirical evidence. From this comprehensive review of existing literature pertaining to upward transfer, one should recognize that sociological frameworks (e.g., status attainment, organizational, and interactionalist) are the primary lenses through which researchers have attempted to understand upward transfer. It is also true that an understanding of psychosocial factors (e.g., students' attitudes and beliefs related to the decision to transfer) is almost entirely absent from current transfer research. Moreover, studies that do consider psychosocial factors in the current literature, namely those that discuss educational goals, often utilize the concept of aspirations or expectations in an attempt to conceptualize motivation in relationship to some future behavior. Such an approach fails to incorporate important theoretical distinctions between aspirations, a concept that reflects idealistic goals for the future, from expectations, a construct that refers to realistic appraisals of one's future trajectory (Jacob & Wilder, 2010; Morgan, 2006). This major limitation of extant literature will be discussed in some detail at the end of this chapter.

According to Murnane and Willett (2010), a theory is a system of ideas intended to explain individual or group phenomena. The emphasis on theoretical frameworks in this chapter is important for researchers because theory guides the types of questions asked, identifies constructs to measure, and points to relationships among constructs (Kezar, 2006; Murnane & Willett, 2010). Psychological, sociological, economic, organizational, and interactionalist

models are among the most popular frameworks used to study educational attainment (Braxton, Sullivan, & Johnson, Jr., 1997; Perna & Thomas, 2008). This review, however, focuses specifically on examples of theories that are used most frequently by researchers and provide important insight into the constructs and variables used in the empirical literature on a particular type of attainment, upward transfer.

Theoretical Approaches to Studying Upward Transfer

Status Attainment Models

The Blau-Duncan Model of Status Attainment

The sociological tradition of studying the stratification of opportunity in a systematic and replicable manner is attributed to Peter M. Blau and Otis D. Duncan (Haller & Portes, 1973; Kerckhoff, 1984; Sewell & Hauser, 1972). In their seminal study, *The American Occupational Structure*, Blau and Duncan (1967) set out to understand what determines eventual status attainment, and to what extent positions in the social hierarchy are maintained across generations⁵. As a result, Blau and Duncan proposed a model that established a causal link between educational attainment and subsequent occupational attainment. Moreover, they identified the importance of social origins as one of the primary mechanisms that facilitated educational attainment.

The model advanced by Blau and Duncan consists of ascribed and achieved characteristics thought to impact eventual occupational attainment. Ascribed characteristics refer to social origins such as a family's socioeconomic status, measured by father's education and occupation; achieved characteristics refer to an individual's own achievements, measured by educational attainment. As depicted in the figure below (see Figure 1.1), Blau and Duncan

⁵ Occupational attainments were considered to be indicator of prestige or status in a stratified society (Sewell, Haller, & Portes, 1969).

(1967) determined that a family's socioeconomic status (father's education and occupation) has direct impacts on both occupational (first job and occupation in 1962) and educational attainment (respondent's education) of the child. However, the results also indicate that while the variables representing social origins have some direct effect on occupational attainment, the primary influence of socioeconomic status is *indirect* and operates via educational attainment (Haller & Portes, 1973, p. 57). In other words, the level of educational attainment one achieves significantly impacts occupational attainment, but educational attainment is primarily impacted by socioeconomic status.

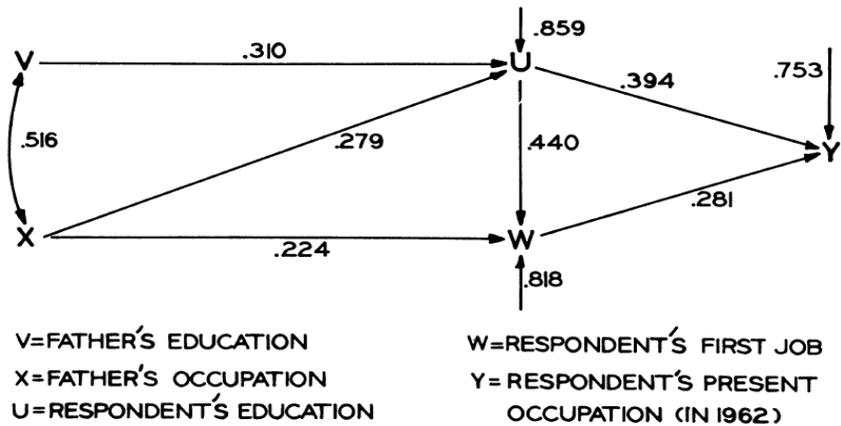


Figure 2.1. The Blau-Duncan Model of Status Attainment

Unlike previous conceptions that viewed the American occupation structure as egalitarian and equitable (Clark, 1960; Parsons, 1959), the Blau and Duncan (1967) analysis demonstrated that status was transmitted from one generation to another (Knottnerus, 1987; Otto & Haller, 1979). Moreover, they confirmed that a son's educational and occupational attainments were not independent of his family's, and that education played an important role in legitimizing social status. Although the Blau-Duncan model of status attainment established a causal relationship between social origins and educational attainment (and to a lesser extent, occupational

attainment), the model was unable to explain the “causal processes” behind the observed relationships (Haller & Portes, 1973, p. 58).

The Wisconsin Model of Status Attainment.

William H. Sewell, Archibald O. Haller, and Alejandro Portes (1969) conceptualized an important extension of the Blau-Duncan model of status attainment known as “the Wisconsin model.” The authors wanted to understand why a connection would be expected between the input variables, father’s education and occupation, and subsequent attainments. Education emerged as the primary mechanism for facilitating stratification of opportunity by Blau and Duncan, therefore Sewell et al. (1996) began their examination with an interest in explaining the identified association between social origins and educational attainment (Kerckhoff, 1976, 1995). As such, the remaining summary of this model will focus primarily on Sewell et al.’s (1996) causal process related to educational attainment.

In addition to the associations identified by Blau and Duncan (1967), Sewell et al. (1969) added measures such as: significant others’ influence, mental ability, academic performance, educational and occupational aspirations, and a composite measure of socioeconomic status to the status attainment model. The figure below (see Figure 1.2) illustrates the refined model of status attainment.

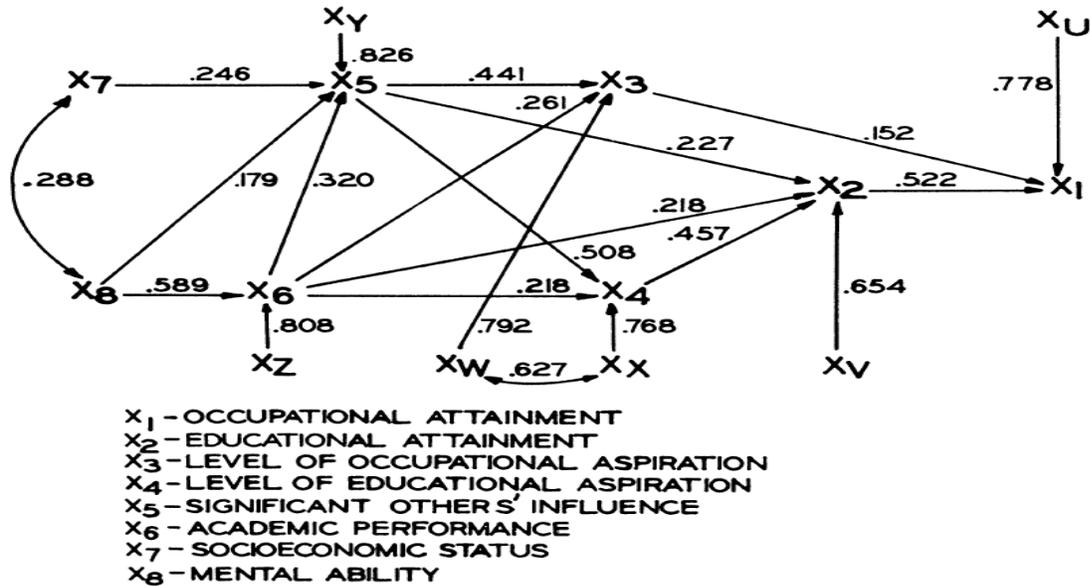


Figure 2.2. The Wisconsin Model of Status Attainment

One of the major contrasts with the Blau-Duncan model is that with the addition of the social-psychological measure of significant others' influence to the model, the impact of socioeconomic status on educational attainment is no longer direct. Notably, the effect of socioeconomic status on educational attainment is now indirect and operates via significant others' influence which impacts the formation of educational aspirations and educational attainment directly. Furthermore, the results demonstrate that there is a reciprocal relationship between the child's mental ability and academic performance, which also reveals that academic performance impacts significant others' influence.

Based on these findings, the Wisconsin model is characterized as a social-psychological model of status attainment and is used to explain the process through which children inherit attainment-related attitudes and learned behaviors (Otto & Haller, 1979; Picou & Carter, 1976; Sewell & Shah, 1967). Specifically, the model established that "practically all the effect that family's socioeconomic status has on a person's educational and occupational attainment is due to its impact on the types of attainment-related personal influences that the person receives..."

(Haller & Portes, 1973, p. 62). The model assumes that it is through social interactions, constrained by socioeconomic status, that children learn to value education and form educational aspirations.

The influence of significant others is important because these individuals serve as role models and share expectations for the child's subsequent status attainment. In turn, the model suggests that a child forms aspirations based on the feedback received from significant others as well as their own academic performance, and that both impact attainment (Picou & Carter, 1976; Sewell & Hauser, 1972; Sewell & Shah, 1967). The indirect effect of socioeconomic status on attainment continues to operate throughout the process of aspiration formation by "structuring" social interaction. As a result, the child interacts primarily with individuals who are "drawn from socioeconomic positions somewhat similar to those of the youth's parents", share similar values, and influence their educational aspirations (Otto & Haller, 1979, p. 888).

Both models confirm the transmission of status from one generation to the next. The Blau-Duncan model, however, fails to explain the mechanisms through which socioeconomic status truly influences educational and occupational attainment. Thus, the major contribution of the Wisconsin model is to clarify that socioeconomic status impacts a child's interactions with others which in turn, contribute to the formation of aspirations that impact attainment.

Limitations of status attainment models. The models of status attainment described in this chapter not only empirically confirm that the opportunity structure in the United States is stratified, but also provide a systematic means of understanding and predicting educational and occupational attainment. Nonetheless, the models are limited in important ways. Soon after the emergence of the models of status attainment, some critics warned that the research lacked theoretical grounding and relied too heavily on statistical methods (Coser, 1975).

The emergence of the Wisconsin model, however, which borrowed from socialization theories, provided a theoretical foundation to explain the identified relationship between social origins and attainment (Kerckhoff, 1984; Wilson & Portes, 1975). Other scholars also argue that the ideas about occupational attainment advanced by Blau and Duncan (1967) draw from historical facts and theory regarding the organization, function, and structure of society (Hanson, 1971; Horan, 1978).

Another limitation of status attainment research is that the models do not adequately explain the process of attainment for ethnic minorities or women⁶ (K. L. Alexander & Eckland, 1974; Kerckhoff & Campbell, 1977a, 1977b; Portes & Wilson, 1976). Kerckhoff and Campbell (1977b) question the validity of status attainment models and find differences in the cultivation of educational aspirations between White Americans and Black Americans. They note, for example, that the model was unable to explain why Black Americans from lower social origins had educational aspirations similar to those of White Students from higher social origins. In addition, Alexander and Eckland (1974) found gender differences in the attainment process and determined that women with high cognitive skills attained at levels below their otherwise similar male counterparts.

A third and related limitation is that the status attainment models do not adequately explain status attainment for “cross-pressured” individuals (e.g., those from low social origins but high in ability, or vice versa) (Sewell & Shah, 1967, p. 2). The latter, individuals with relatively high attainment, who come from high social origins but are low in ability, are particularly problematic because they challenge the notion that merit (e.g., achievement) is central to the attainment process in the United States (Carter, 2002). Cases such as these suggest

⁶ The original Blau-Duncan and Wisconsin models contained samples that consisted primarily of Caucasian males.

that parents transmit something other than attainment-related behaviors to their children and that those other factors are important in the process of attainment.

Another major limitation of the social-psychological models of status attainment is that they ignore the importance of social structure (Kerckhoff, 1976). Kerckhoff asserted that it is inappropriate to assume that ascribed characteristics and attainment-related behaviors such as educational aspirations fully explain attainment. He critiques the social-psychological models for assuming an “open” system in which attributes such as social class, gender, race, aptitude, and ambition primarily influence attainment. Instead, Kerckhoff put forth an “allocation model” of status attainment that highlights the significant role played by socially legitimate sorting mechanisms (e.g., schools) in the attainment process (Kerckhoff, 1976, p. 377). He argues that the social-psychological models of status attainment ignored the impact of schools and other social structures that can shape individuals as they navigate society (Kerckhoff, 1976, 1984).

College Impact Models

The literature on organizational behavior is voluminous, complex, and often provides conflicting approaches to understanding organizational impact (Berger & Milem, 2000). Thus, this section provides an overview of a particular type of model that emphasizes the importance of the structural/functional aspects of an organization when studying college impact on student outcomes.

Weidman and Organizational Socialization.

An underlying assumption of the college impact model discussed later in this section is that in order to understand organizational impact on student outcomes, we must recognize the various sources of influence that impact students (Weidman, 2006). This important piece of the model is borrowed from the work of Weidman (1989) who was one of the first researchers to

propose a socialization model of organizational impact. Socialization is commonly defined as “the process through which individuals acquire knowledge, skills, and value orientations that will be useful in the future” (Brim, 1966; Dey, 1997, p. 97). As a result, Weidman advanced a theory grounded in organizational sociology that emphasizes the socializing influence of organizations on student outcomes.

At the organizational level, the theory assumes that institutional characteristics carry meaning and that the impact of the organization is transmitted to members of the university community through a series of *social processes* (Weidman, 1989). For example, the mission of a college (an organizational characteristic) provides a statement of an institution’s purpose that drives resource allocation and establishes educational objectives. Thus, the model suggests that an institution’s mission conveys normative expectations communicated to students through their interactions with faculty, staff, and their peers. Moreover, the model indicates that students reconcile their own predispositions and goals with the normative pressures of the university community as they change or maintain their own attitudes and values (Dey, 1997; Weidman, 1989).

The Berger-Milem Model of Organizational Impact on Student Outcomes.

Many studies empirically demonstrate that institutions vary in important and typically overlooked ways that impact student outcomes, but the Berger and Milem (2000) framework was one of the first models to provide conceptual insight into the ways in which institutions affect student outcomes (Terenzini & Reason, 2005). Ultimately, Berger and Milem (2000) proposed a model of organizational impact that attempts to explain the mechanisms through which features of an institution influence students’ collegiate experiences and outcomes.

In their review of existing research on organizational effects, Berger and Milem (2000) concluded that “structural-demographic features” and “organizational behavior dimensions” of institutions are important variables that impact student outcomes (p. 301). Structural-demographic features refer to institutional characteristics such as size, selectivity, control, location, and mission. The organizational behavior dimensions describe organizational behavior, culture, and climate and were measured using a typology of organizational environments (e.g., bureaucratic, collegial, political, symbolic, and systemic). As illustrated below (see Figure 2.3), the dashed boxes in the model suggest that the combined influence of these organizational characteristics on student outcomes is *indirect*. The authors claim that institutional characteristics directly affect: (a) the type of students who enter an institution (via college choice processes) thus forming a peer group, and (b) “the student experience”, which in turn affect student outcomes (Berger & Milem, 2000, p. 308).

In a review of college impact models, Terenzini and Reason (2005) assert that the student composition of an institution is a central concept to college impact models because the peer climate “embodies the system of dominant and normative values, beliefs, attitudes, and expectations that characterize a campus’ student body” (p. 11). The Berger and Milem model assumes that peers influence students’ perceptions, attitudes and values, and that students adjust their behaviors, including academic performance because of social interaction. Since the Berger and Milem (2000) model is an extension of Weidman’s (1989) undergraduate socialization model, the peer climate of an institution is important because it is viewed as an important socializing mechanism.

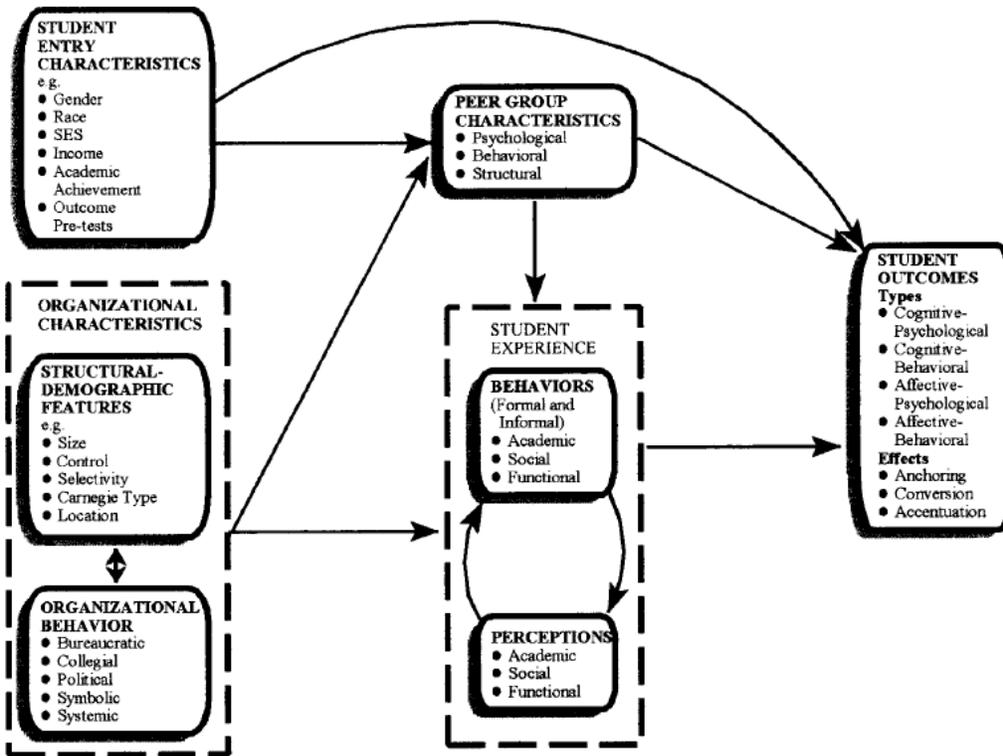


Figure 2.3. Berger-Milem Model of Organizational Impact on Student Outcomes

A key element linking the organizational characteristics (e.g., structural-demographic features) to the development of an institution's peer climate is borrowed from the college choice literature (Berger & Milem, 2000). The authors explain that students make choices about college attendance based on institutional features and characteristics. For example, a considerable body of literature indicates that campus size is an important consideration when students choose a college (Pascarella & Terenzini, 2005). According to the model, a campus with a weak organizational environment, one that promotes varied student behaviors, attracts a more heterogeneous peer group and has weaker effects on student outcomes.

The second way institutional characteristics and features impact student outcomes is through the powerful role institutional configurations have in shaping the collegiate environment. Berger and Milem (2000) claim that this is important because students' experiences with and

perceptions of the environment are critical pieces of information when studying student outcomes. There are many theories (Astin, 1984; Pascarella, 1985; Tinto, 1987, 1993) that hypothesize about the nature of student-institution interaction and the implications for student outcomes (one is discussed in the next section); the Berger-Milem model incorporates salient features of interactionalist theories and assumes that the more a student is engaged in the college environment, the more likely the student is affected by the campus environment. Thus, Berger and Milem take into consideration measures of student involvement in the academic and social systems of a college and focus on the impact of the institution on those components of a campus community.

Similar to the discussion above, Berger and Milem describe the relationship between institutional characteristics and student involvement/engagement. The authors claim that structural-demographic characteristics of an institution can affect student involvement by shaping the availability and nature of students' involvement/engagement with the college environment. They note, for example, that faith-based institutions may require participation in religious activities by virtue of their mission and that such involvement has implications for student outcomes. Moreover, using their typology of organizational behavior, Berger and Milem found that different institutional types (e.g., bureaucratic) can impact student involvement by setting clear expectations for students.

The Berger-Milem model demonstrates that the impact of an organization's structural and behavioral features on student outcomes is *indirect* and operates through its powerful role in shaping "the social processes that bring about college impact" (Weidman, 1989, p. 293). Moreover, the focus of the model is not on "the organization" and its "behavior," but rather on

understanding the ways in which institutional characteristics constrain or sustain interaction between individuals (Berger & Milem, 2000, p. 273).

Limitations of the Berger-Milem model. A major criticism of the Berger and Milem model is that the framework lacks specificity with regard to precisely how features and characteristics of an institution distal to the student experience affect students' behaviors and outcomes (Terenzini & Reason, 2005). Berger and Milem (2000) rely on the concept of organizational cues, defined as the manifestation of patterns of organizational behavior, to link the features of an institution "to more proximal aspects of the students experience such as student perception and behavior" (p. 312). In doing so, they suggest that organizational cues result in practices and policies that directly influence the student experiences and other social processes, but provide few specific examples to illustrate this relationship.

Another criticism of Berger and Milem's model is that the model emphasizes social processes within an institution, but ignores the psychological changes that often accompany social interaction. There is a substantial body of literature that describes the impact that social interaction within a college environment can have on students' psychological development, including the cultivation of academic self-efficacy (Awad, 2007; Bracken & Lamprecht, 2003; Chemers, Hu, & Garcia, 2001; Cokley, 2000; McMahon, Wernsman, & Rose, 2009; Pajares, 1996). These researchers contend that students with a high degree of perceived academic self-efficacy have positive outcomes related to a number of educational endeavors such as persistence and achievement. Future research should explore whether psychological changes occur as a result of community college students' interactions within the college environment, and include measures of psychological constructs in studies on upward transfer.

A third criticism of the Berger-Milem model is that the model does not account for the influence of individuals and communities outside of the university that also have normative expectations that impact student outcomes. In fact, in his original model, Weidman (1989) asserts that “institutions are not encapsulated environments,” and that a student’s performance in college may be affected by “problems at home and other community settings” (p. 300). Moreover, others (Padgett et al., 2010) note that the inclusion of socializing influences external to the college experience, such as parents and other groups (e.g., parents, churches, and other community organizations), are important when studying college impact because they continue to influence students throughout college.

A final criticism of the Berger-Milem model is that the model does not consider how the impact of an institution might differ for various subgroups on college campuses. Many studies in the four-year context demonstrate that there are systematic and important differences with regard to the college experience for ethnic minorities, women, and other non-traditional students (e.g., older students) (D’Augelli & Hershberger, 1993; Hurtado & Carter, 1997; Hurtado & Ponjuan, 2005). These findings suggest the importance of adjusting future research in ways that account for different patterns of organizational impact (Weidman, 1989, 2006).

Interactionalist Models

The theories reviewed thus far contribute to our understanding of the ways in which student background characteristics and the structural and behavioral features of institutions influence student outcomes. An additional source of information relevant for the study of student outcomes stems from the interactionalist models which focus on the student experience within an institution.

Many prominent models examine the student experience within the institution (Astin, 1984; Pascarella, 1985; Tinto, 1987, 1993). One of the most studied, cited, and revised of these theories is that of Vincent Tinto (1987, 1993) who advanced his Theory of Student Departure. Tinto's theory is typically used in persistence and retention studies, but researchers also use his concepts to study other college outcomes (e.g., upward transfer) (Hagedorn, Cypers, & Lester, 2008; Hurtado & Carter, 1997; Nora & Rendón, 1990).

Tinto's Theory of Student Departure.

The work of Tinto (1975, 1987, 1993) is an extension of Spady's (1970, 1971) application of Emile Durkheim's (1951) sociological studies of suicide in higher education research. According to Tinto (see Figure 2.4), students enter postsecondary education with varying background characteristics and experiences, including initial dispositions and intentions with regard to personal and academic goals (e.g., upward transfer). These intentions and commitments are "subsequently modified and reformulated on a continuing basis through a longitudinal series of interactions between the individual and the structures and members of the academic and social systems of the institutions" (Terenzini, 1987, p. 25). Tinto used the terms academic integration and social integration to describe the result of student interactions with the formal and informal aspects of the academic and social environments. Although measured inconsistently (Hurtado & Carter, 1997), indicators of academic integration typically refer to students' academic performance as well as their interactions with faculty and staff affiliated with academic endeavors. Similarly, indicators of social integration typify students' interactions with peers outside of the classroom and involvement in extracurricular activities (R. Deil-Amen, n.d.; Karp, Hughes, & O'Gara, 2010).

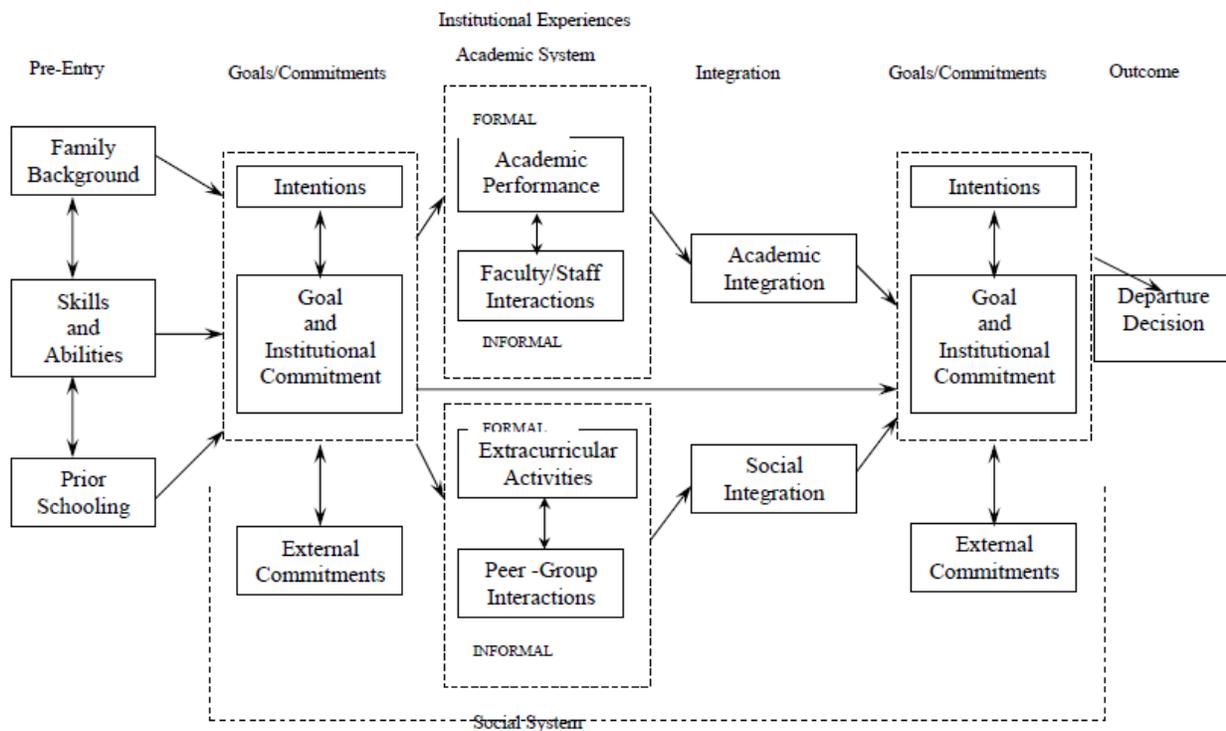


Figure 2.4. Tinto's (1993) Theoretical Model of Student Departure

An underlying, often overlooked, assumption of Tinto's model is that positive academic and social experiences reinforce students' commitments to the institution and educational goals and result in academic and social integration. Thus, students persist when they perceive academic and social congruence between themselves and the values, social rules, and academic quality of the college community (R. Deil-Amen, n.d., p. 2). Students who experience incongruence with the institution as well as those isolated from the campus community experience a weakening of institutional and educational goal commitments and will likely choose to leave the college environment.

In later revisions to his model, Tinto (1993) acknowledges the influences of financial resources, connections with the external community (e.g., family and/or work), and classroom experiences on students' decisions to persist. Moreover, he asserts that full integration into the

academic and social systems of an institution is not necessary, but that some degree of integration must occur in order for continued goal commitment and persistence.

Limitations of Tinto's model of student departure. A significant limitation of Tinto's Model of Student Departure is that the model, which assumes students must disconnect from a home community before integrating into the college community (Van Gennep, 1960), does not adequately describe minority students' departure decisions (Hurtado & Carter, 1997; Tierney, 1999). In response, others scholars recommend more culturally sensitive approaches to understanding these students (Rendón, 1995). A related critique is that the model applies only to traditional students at residential campuses (Bers & Smith, 1991). In particular, some researchers assert that community college students often remain in their home community while also interacting with the institution, and draw attention to the fact that academic and social integration might look different in the community college context (R. Deil-Amen, n.d.; Karp et al., 2010).

Another criticism of Tinto's model is higher education researchers' imprecise and inconsistent use of the academic and social integration constructs. Hurtado and Carter (1997), for example, fault Tinto for not providing a clear distinction between behavior (e.g., participation) and a psychological sense of integration (R. Deil-Amen, n.d., p. 5). Hurtado and Carter (1997) note that the unclear and inconsistent use of academic and social integration as concepts could stem from the lack of clarity given that Durkheim's concepts were applied to the higher education context.

Summary

Collectively, the theories I reviewed in this section offer a comprehensive, albeit limited view of the influences and experiences that affect students, and describe how those multiple

forces impact students' ability to transfer to a four-year institution. The status attainment theories and interactionist theories explain that background characteristics and precollege experiences impact students in important ways that contribute to their behavior once enrolled in postsecondary education. Moreover, Tinto noted that social and academic experiences during postsecondary education exert considerable influence on educational attainment and presented his framework for interpreting these effects. Finally, the organizational impact theories emphasized the relevance of institutions and the impact that components of the college campus can have with regard to shaping the student experience.

Empirical Research on Upward Transfer

Guided largely by the theoretical frameworks discussed above, the available body of research on upward transfer identifies a number of factors that support or hinder students' ability to transfer from community colleges to four-year institutions. Findings from these studies show that individual and institutional characteristics, as well as experiences once enrolled in a community college, impact students interested in attaining a baccalaureate degree by using the transfer function. In this section, I summarize these findings and critiques of extant higher education and sociological literature on upward transfer. The variables and constructs with the most empirical evidence in the literature are reviewed in this section (see Table 2.1).

Table 2.1. Summary of Categories and Predictors of Upward Transfer

Student Background Characteristics	Institutional Factors	Collegiate Experiences	
Socioeconomic status	Campus size	Major	Employment
Academic preparation	Urbanicity	Academic performance	Faculty interaction
Educational aspirations	Institutional orientation	Enrollment patterns	Counselor interaction
Gender	Student composition	Gateway courses	
Racial background	Faculty composition	Remediation	
Age	Expenditures	Completion of credentials	
Immigration status	Articulation agreements	Academic/social integration	

Student Background Characteristics

Most scholarship documents a relationship between student background characteristics such as demographic traits, academic history, and upward transfer (Moore, Shulock, & Offenstein, 2009). Examples of these variables include socioeconomic status, academic preparation, educational aspirations, gender, racial background, age at college entry, and immigration status.

Socioeconomic status.

The impact of socioeconomic status (SES), or social class on whether community college students transfer to a four-year university is thoroughly documented by social scientists (Cabrera et al., 2005; Calcagno, Crosta, Bailey, & Jenkins, 2007; Dougherty & Kienzl, 2006; Goldrick-Rab & Pfeffer, 2009; Hagedorn et al., 2008; Lee & Frank, 1990; Peng, 1978; Roksa & Calcagno, 2010; Roksa, 2006a; Velez & Javalgi, 1987; Wang, 2010). A frequently cited study in this body of work is that conducted by Lee and Frank (1990), who concluded that it is “social disadvantage that impedes community college students from transferring” (p. 191). Many studies’ findings replicated these results and found a consistent gap in the rate of transfer between students from lower and upper social backgrounds, even after statistical adjustments were made to consider other important social and academic background characteristics (e.g., race, age, and gender) (Cabrera et al., 2005; Calcagno et al., 2007; Dougherty & Kienzl, 2006; Hagedorn et al., 2008; Peng, 1978; Roksa & Calcagno, 2010; Roksa, 2006a; Velez & Javalgi, 1987; Wang, 2010).

Although there is apparent consensus with regard to the impact of socioeconomic status and its impact on upward transfer, some scholars also attempt to determine how or why upper-middle social class advantages community college students interested in a baccalaureate degree.

These researchers suggest that the benefits of upper-middle social class are realized, in part, through academic preparation during high school (Hagedorn et al., 2008; Lee & Frank, 1990) and educational aspirations formed prior to enrolling in postsecondary education (Dougherty & Kienzl, 2006). A particularly relevant study is that of Dougherty and Kienzl (2006) who used two national datasets to document the significant impact of social class on transfer. Using step-wise logistic regression to explore the impact of several mediating variables on upward transfer, the authors assert that “if the addition of one of these potential variables substantially reduces the coefficient for a background variable, we know that new variable is carrying part of the influence on transfer of that background variable” (p. 463). As a result, Dougherty and Kienzl (2006) corroborated the work of Lee and Frank (1990), and concluded that social disadvantage impedes transfer indirectly through its effect on academic behaviors and attitudes associated with transfer (e.g., academic preparation, aspirations, and performance).

Academic preparation.

Because students enter community colleges with a range of academic resources and ability levels, a number of researchers explore the ways in which prior academic preparation influences upward transfer (Bailey & Weininger, 2002; Cabrera et al., 2005; Dougherty & Kienzl, 2006; Hagedorn et al., 2008; Lee & Frank, 1990; Peng, 1978; Roksa & Calcagno, 2010; Roksa, 2006a; Velez & Javalgi, 1987; Wang, 2010). Many scholars advocate that indicators such as: scores on state assessments (e.g., math and reading scores), college entrance exams (e.g., SAT/ACT) (Bailey & Weininger, 2002; Crisp & Nora, 2010; Dougherty & Kienzl, 2006; Roksa, 2006a), high school grade point average (GPA) (Holmstrom & Bisconti, 1974; Velez & Javalgi, 1987), high school track (e.g., academic track vs. vocational track) (Lee & Frank, 1990; Velez & Javalgi, 1987), and students’ self-ratings of their academic ability (Dougherty & Kienzl,

2006), serve as proxies for the quality and rigor of students' academic histories (Arbona & Nora, 2007). Regardless of the variables employed, the results of these studies demonstrate consistently that the academic background of students contributes to variation in the use of the transfer function.

Bailey and Weininger (2002), Dougherty and Kienzl (2006), and Roksa (2006a) each emphasize the enhanced prospects of transfer to a four-year institution enjoyed by students who perform well on precollege state assessments and college entrance examinations. Specifically, Bailey and Weininger (2002) found that higher scores on mathematics and reading assessments were significantly related to transfer, while Crisp and Nora (2010) and Dougherty and Kienzl (2006) found that taking mathematics courses, but not reading courses in high school, were important for students interested in transfer to a four-year institution. In addition, the work of Lee and Frank (1990) and Dougherty and Kienzl (2006) provide insight about less traditional measures such as students' self-rating of academic preparation and parental involvement in high school (e.g., help studying) that ultimately improve students' chances for upward transfer.

As mentioned above, it is important to note that several scholars (Cabrera et al., 2005; Hagedorn & Lester, 2006; Roksa & Calcagno, 2010) echo the work of Dougherty and Kienzl (2006) who stress that a considerable part of the differences in academic preparation are due to socioeconomic status. In other words, future researchers should interrogate their assumptions about the use of variables that represent academic preparation in future work on upward transfer because the interrelationships are complex and difficult to disentangle.

Educational goals.

Sociologists and higher education researchers commit extensive empirical attention to understanding the impact of educational goals on academic outcomes. In the context of

community colleges, identifying students with “high” educational goals, conceptualized educational as heightened aspirations (e.g., baccalaureate degree seeking) is important because the transfer function is intended to provide an alternate route to a baccalaureate degree (Grubb, 1991). As one might expect, empirical evidence confirms that community college students with aspirations to attain a baccalaureate degree have higher odds of transferring to a four-year institution compared to students who do not aspire to reach the same level of education (Cabrera et al., 2005; Dougherty & Kienzl, 2006; Lee & Frank, 1990; Peng, 1978; Wang, 2010).

Some studies also find that educational aspirations differ significantly by socioeconomic and racial background. For example, students from lower socioeconomic backgrounds express, on average, lower educational aspirations than students from middle and upper socioeconomic backgrounds (Bailey, Jenkins, & Leinbach, 2005; Cabrera et al., 2005). With regard to race, some research finds that Black and Latino community college students have higher degree aspirations than similar White students (Cabrera et al., 2005). These statistics are important because scholars who interrogate the complex intersection of these student characteristics find that the independent negative effect of variables that represent socioeconomic status and racial background on upward transfer is mediated or reduced for students who have baccalaureate degree aspirations (Bailey et al., 2005; Dougherty & Kienzl, 2006). Future research must account for the confounding influence of social class, racial background, and educational aspirations when studying upward transfer particularly because many of the students who choose community colleges are simultaneously persons of color from lower-income families and communities.

Gender.

Several studies explore the impact of gender on upward transfer. Earlier studies (Surette, 2001; Velez & Javalgi, 1987) used national data on students entering community colleges in the 1970s and found significant gender differences in the use of the transfer function. Despite the inclusion of statistical controls for family responsibilities, proximity, monetary costs, and ability, Surette (2001) and Velez and Javalgi (1987) each found that women were less likely to transfer than men. The results from Surette's seminal study also indicated that domestic responsibilities, such as child rearing, placed more of a constraint on women's ability to transfer to a four-year university than for men. These findings documented inequality in the use of the transfer function and also revealed the complex relationship between gender, family responsibilities, and upward transfer.

Subsequent research on upward transfer find gender equity in the use of the transfer function (Anderson, Sun, & Alfonso, 2006; Crisp & Nora, 2010; Eagan & Jaeger, 2009; Hagedorn et al., 2008; Lee & Frank, 1990; Roksa & Calcagno, 2010; Roksa, 2006a; Wang, 2010). These findings are robust across three decades of state-specific and national data (e.g., 1980s – 2000s) as well as statistical models. Two exceptions include Bailey and Weininger (2002) who found an increased likelihood of transfer for women, and Sheldon (2009) who found that men were more likely to transfer than women. These studies, however, each used state-level data and the findings may be limited to California and New York.

Few studies have revisited the complex association between marital status, domestic responsibilities, and upward transfer, but the available evidence suggests there is not a persistent association between marital status and upward transfer. There have been conflicting results with regard to the impact of child rearing on upward transfer, but overall these studies suggest gender

equality in the use of transfer function for post-1970 cohorts of community college students (Dougherty & Kienzl, 2006; Roksa, 2006a).

Racial background.

The current body of literature paints an interesting picture with regard to the relevance of racial background and upward transfer. At the state-level, four studies found a “race effect” when studying upward transfer. On the one hand, Sheldon (2009) concluded that underrepresented students in California transferred more often to for-profit institutions than White students. While on the other hand, Eagan and Jaeger (2009) found that Latino students in California transferred to four-year institutions less often than Asian students and more often than their White counterparts. Similarly, Roksa and Calcagno (2010) determined that all underrepresented students in Florida exhibited a lower likelihood of upward transfer, and Bailey and Weininger (2002) found that Black students in New York experienced a disadvantage when it came to transfer.

Research employing older national data also demonstrates that race impacts the use of the transfer function (Peng, 1978; Velez & Javalgi, 1987). Velez and Javalgi (1987) and Peng (1978) used the same dataset, but Velez and Javalgi (1987) found that Black and Latino students had higher probabilities of transfer than otherwise similar White students. Conversely, Peng (1978) found that White students experienced a greater likelihood of transfer than Black students and that Black students had a greater chance of transfer than Latino students. These findings were challenged soon by a number of more recent national studies that found no racial differences in the use of the transfer function (Anderson et al., 2006; Dougherty & Kienzl, 2006; Lee & Frank, 1990; Roksa, 2006a; Wang, 2010). An important caveat to these findings is Wang’s (2010) illustration of Black students’ disadvantage in their ability to transfer despite having

baccalaureate degree aspirations. Specifically, Wang found that Black students who were otherwise similar to their White peers had lower transfer rates to four-year institutions.

Age.

Scholars recently equipped with data that permits disaggregation of educational attainments by age supply useful insight about older students and students who delay entry into postsecondary education. According to these studies (Calcagno et al., 2007; Dougherty & Kienzl, 2006; Hagedorn et al., 2008; Roksa & Calcagno, 2010; Sheldon, 2009), age at college entry is an important determinant of upward transfer. In particular, older students are less likely to transfer than their younger counterparts. On the one hand, evidence suggests that vocational ambitions or a disinterest in a baccalaureate level degree decrease the likelihood of transfer for older students (Hagedorn et al., 2008). On the other hand, Dougherty and Kienzl (2006) found external demands and inconsistent enrollment patterns exhibited by older students as possible explanations for the discrepancies in transfer between younger and older students. These results require careful consideration in light of the many purposes of community college discussed above. In either case, one of the most troubling set findings is that despite having adequate academic preparation (Hagedorn & Lester, 2006) and baccalaureate degree aspirations (Dougherty & Kienzl, 2006), older students remain disadvantaged with regard to upward transfer.

Immigration status.

The impact of community college students' immigration status on their ability to transfer to a four-year institution remains largely unexplored. The evidence from three studies indicates that immigration status effects not only whether students transfer (Bailey & Weininger, 2002; Roksa, 2006a), but also the transfer destinations of immigrant community college students

(Sheldon, 2009). Bailey and Weininger (2002) provide one of the most nuanced evaluations of the impact of immigration status on upward transfer. Using a representative sample of City University of New York (CUNY) students who initially attended a community college, they found that immigrant students who graduated from U.S. high schools experienced a greater likelihood of transfer than their non-immigrant counterparts. Moreover, an examination of gender differences revealed that immigrant women exhibited a reduced likelihood of transfer when compared to immigrant men. Considering the often celebrated role community colleges play in providing educational opportunity to immigrants (Bailey & Weininger, 2002), future research should continue to explore the unique barriers faced by these students (B. C. Alexander, Garcia, Gonzalez, Grimes, & O'Brien, 2007).

This review of student background characteristics uncovers the importance of individual traits and experiences that precede enrollment in postsecondary education and suggests that these variables are related in important ways that are not considered adequately in existing literature. Nonetheless, the main finding offered by this review is that individual traits and experiences have a powerful impact on students and their use of the transfer function. Some researchers even claim that background characteristics have the strongest impact on student outcomes (Calcagno, Bailey, Jenkins, Kienzl, & Leinbach, 2008), but some researchers (Bailey et al., 2004) note that variables such as institutional factors can improve our understanding of this phenomenon.

Institutional Factors.

Many researchers explore the impact of institutions, such as community colleges, on educational attainment. As Karabel (1986) suggested two and a half decades ago, researchers interested in assessing institutional effectiveness find that community colleges differ in important ways that impact upward transfer (Calcagno et al., 2008; Wassmer, Moore, & Shulock, 2004).

Frequently cited institutional factors include campus size, urbanicity, institutional orientation, student and faculty composition, expenditures, and the presence of articulation agreements.

Campus size.

There is scant research available that explores whether campus size, measured typically by the number of full-time equivalent (FTE) students enrolled at a college, is related to students' ability to transfer (Calcagno et al., 2008; Wassmer et al., 2004). Calcagno, Bailey, Jenkins, Kienzl, and Leinbach (2008) divided institutional characteristics into four groups that included: general institutional characteristics (e.g., size, faculty-student ratio), compositional characteristics of the student body (proportion minority students, proportion full-time), financial variables related to revenue and expenditures (e.g., tuition expenditures on student services), and fixed location characteristics (e.g., urbanicity). Using logistic regression models to control for the various institutional characteristics, Calcagno, Bailey, Jenkins, Kienzl, and Leinbach (2008) observed "an inverse relationship between school size and students' likelihood of completing a degree or transferring to a four-year college" (p. 644). Blau (1999), however, observed a positive relationship between school size and upward transfer for Black American community college students. Due to the insight of a rare qualitative study of institutional ideology and culture, Shaw and London (2001) assert that both small and large institutions can implement successful transfer policies and programs.

Urbanicity.

Another organizational characteristic with an apparent relationship with upward transfer is the degree of urbanicity (e.g., urban, suburban, and rural) of the community college (Eagan & Jaeger, 2009). According to Adelman (2002), because "urban [continues to] mean poor and minority, suburban middle class and white, [and] rural a mystery" (p. 39), urbanicity is a flawed

proxy for differences in educational opportunity because it simplifies important variation. Still, this trichotomy may be particularly relevant for community college students since most attend campuses close to their home communities (Cohen & Brawer, 2008). Currently, however, there is no consensus on this topic. For example, a study based on Florida community college students found no differences in upward transfer between students enrolled in urban, suburban, or rural institutions, (Calcagno et al., 2008), while another study that used California data concluded that students enrolled in rural institutions were less likely than suburban students to transfer to a four-year institution (Eagan & Jaeger, 2009). The only national study on the topic suggests that urbanicity matters more for women than for men; the author concluded that the effect of living in an urban area was positive for women due to proximity to other community colleges (Surette, 2001).

Institutional orientation.

Inspired by the early ideological debates concerning the evolving functions of community colleges (Brint & Karabel, 1989; Karabel & Halsey, 1977), some researchers have explored the effect of institutional “orientation” on upward transfer (Wang, 2010, p. 5). These studies assume that colleges with a vocational focus, measured by the proportion of certificates or vocational associates degrees awarded, may hinder students’ ability to access transferable coursework and other important academic resources (Roksa, 2006a). Empirical research interrogating these assertions find no evidence of a disadvantage when community colleges offer vocational credentials (e.g., certificates or associates degrees) (Calcagno et al., 2008; Roksa, 2006a); this finding holds when examining a Black American sample of community college students (J. R. Blau, 1999). Despite these results, other studies find that attending a hybrid community college (located on the campus of a four-year university) or a community college with a “culture of

transfer” (defined broadly) impact upward transfer (Bailey & Weininger, 2002; Sheldon, 2009; Suarez, 2003).

Student and faculty composition.

To determine whether the socio-demographic composition of the faculty and student bodies affect transfer probability, researchers estimate whether the proportion of full-time or historically underrepresented students enrolled at a community college is significantly related to the number of students at an institution who transfer. At the institutional-level, Wassmer, Moore, and Shulock (2004) found that campuses with a higher proportion of either Black American or Latino students had lower transfer rates. Similarly, studies that used student-level data and control for a host of individual and institutional variables found a negative relationship between an institution’s minority student enrollment and upward transfer (J. R. Blau, 1999; Calcagno et al., 2008). With regard to enrollment status, Anderson et al. (2006) found a positive association between the percentage of full-time students enrolled at community colleges and upward transfer. Future research should investigate these associations more closely since previous research established a positive relationship between minority student enrollment and other student outcomes in the community college context (Eaton, 1988; Hagedorn, Chi, Cepeda, & McLain, 2006)

Scholars also have investigated how exposure to part-time faculty affects upward transfer (Banks, 1994; Calcagno et al., 2008; Eagan & Jaeger, 2009). Using institutional-level data to assess the impact of institutional compositional characteristics, Banks (1994) found a positive association between the proportion of full-time faculty and community college transfer rates. Furthermore, Eagan and Jaeger (2009) used hierarchical generalized linear modeling (HGLM) to consider the joint impact of student- and institutional-level variables on upward transfer.

Consistent with Calcagno et al. (2008), Eagan and Jaeger (2009) found a “significant and negative relationship between exposure to part-time faculty instruction and students’ chances of transferring” (p. 182). Because community colleges rely increasingly on the use of part-time faculty, scholars should continue to investigate the ways in which exposure to part-time faculty impacts student outcomes.

Expenditures.

The relationship between the expenditures of community colleges and upward transfer receives inadequate attention from scholars. In general, researchers expect that increased expenditures will have a positive impact on many student outcomes by increasing the resources available on a campus. An early institutional-level national study conducted by Center for the Study of Community Colleges (CSCC) of upward transfer found that community colleges “with the greatest expenditures per student have fewer transfer students” (Banks, 1994, p. 256). Subsequent student-level work determined that expenditures on instruction, student services, and administrative functions had no effect on upward transfer, but found that expenditures on academic support had a significant and negative association with the probability of transfer to a four-year university (Calcagno et al., 2008). The authors concluded that, unlike four-year institutions (Pascarella, 1985; Titus, 2004), there is a weak association between the financial characteristics of community colleges and the educational outcomes of students.

Articulation agreements.

State-level articulation agreements represent important policy levers intended to bolster transfer opportunities for community college students by ensuring a formal path to a baccalaureate degree (Barkley, 1993; Knoell & Medsker, 1965; Rifkin, 1996). Several researchers claim that articulation agreements promote transfer by inducing transfer-related

activities on campuses (Knoell & Medsker, 1965; Rifkin, 1996). Efforts to estimate the impact of these policies, however, find no association between attendance at a community college in a state with articulation agreements and student transfer to a four-year university (Anderson et al., 2006; Roksa, 2006a, 2009). Each of the studies employed national data, controlled for a number of student background characteristics, student behaviors, institutional variables, strength of articulation agreements, and used logistic regression models, but found no relationship between state-level articulation policies and students' probability of transfer to a four-year institution. This conclusion held even for a restricted sample of baccalaureate aspirants (Anderson et al., 2006) as well as for students who attended community colleges in states with strong articulation policies (Roksa, 2006a, 2006b).

My review of studies that explore the impact of institutional factors on students demonstrates that various features of community colleges impact upward transfer. Some scholars assert that institutional features explain why otherwise similar students, in terms of background characteristics, experience different rates of transfer to four-year institutions (Karabel & Astin, 1975). Still, other researchers find that decisions and experiences post-matriculation have a strong impact on students interested in upward transfer (Velez & Javalgi, 1987).

Collegiate Experiences

There is also a growing recognition by researchers interested in upward transfer to examine students' curricular decisions, social interactions, and other experiences during their time in college. Examples of variables and constructs used to determine the impact of these factors include: a student's major, academic performance including grade point average and

completion of gateway courses or other credentials, enrollment status, credit accumulation, remediation, and interactions with peers, counselors, and faculty members.

Major.

Some scholars suggest that the choice to major in a vocational subject rather than an academic field of study presents a significant barrier to upward transfer (Brint & Karabel, 1989; Roksa, 2006a). Consistent with this hypothesis, Dougherty and Kienzl (2006) and Eagan and Jaeger (2009) each found that selection of a vocational major adversely impacts the decision to transfer to a four-year university. The most insightful findings on the topic emerge from the work of Dougherty and Kienzl (2006) who found that racial minorities and older students are significantly more likely to choose vocational majors; this finding suggests that students differ in important ways that impact their decisions once they enroll in postsecondary education.

Academic performance.

Similar to the research that finds high school academic preparation is significantly related to upward transfer, researchers also have explored whether academic performance, once enrolled, impacts upward transfer. To conduct this research, scholars used measures such as grade point average (GPA) (Dougherty & Kienzl, 2006; Eagan & Jaeger, 2009; Peng, 1978; Sheldon, 2009; Velez & Javalgi, 1987) and a ratio of course completion (Hagedorn et al., 2008; Moore et al., 2009; Ponticelli & Russ-Eft, 2009) to proxy for students' achievement during college. Most scholars assert that a record of high academic performance in college, whether measured by GPA or by a ratio of course completion, define one's prospects for upward transfer (Dougherty & Kienzl, 2006; Eagan & Jaeger, 2009; Hagedorn et al., 2008; Moore et al., 2009; Peng, 1978; Ponticelli & Russ-Eft, 2009; Sheldon, 2009; Velez & Javalgi, 1987). Pertaining to GPA, early research by Velez and Javalgi (1987) determined that high school academic

preparation, while important, impacts upward transfer indirectly through its effect on college GPA. This research suggests that there is a cumulative advantage with regard to academic preparation and performance.

Enrollment patterns.

Research conducted by Adelman (1999, 2006) demonstrated that enrollment intensity, referred to as the level of engagement (e.g., units enrolled) in academic coursework per semester, among students at four-year universities played a critical role in earning a baccalaureate degree. Similarly, scholars interested in student outcomes at the community college level explore whether enrollment status (e.g., full-time versus part-time) and credit accumulation impact upward transfer (Crisp & Nora, 2010; Dougherty & Kienzl, 2006; Doyle, 2009; Eagan & Jaeger, 2009; Hagedorn et al., 2008; Moore et al., 2009; Roksa & Calcagno, 2008, 2010; Wang, 2010). From this research, we learn that continuous enrollment, at or close to, full-time status (e.g., 12 credit hours) (Crisp & Nora, 2010; Dougherty & Kienzl, 2006; Doyle, 2009; Roksa & Calcagno, 2010; Roksa, 2006a) as well as the accumulation of credit hours (Roksa & Calcagno, 2010), advantages students with regard to transfer.

Doyle (2009) used matching estimators and found that enrollment intensity causally impacts upward transfer. In his study, Doyle (2009) demonstrates that students who attempt six, nine, and twelve credit hours are more likely to transfer than students who attempt fewer credit hours each term; the effect on upward transfer was strongest for students enrolled in twelve credit hours (e.g., full-time status). The current literature misinterprets these findings by linking course completion to upward transfer (Crisp & Nora, 2010; Dougherty & Kienzl, 2006), but this evidence suggests simply that students who enroll in more credit hours each term are more likely to transfer than those who enroll in fewer units (e.g., continuous enrollment). This is a

misinterpretation because it may be that students who continue to enroll, regardless of course completion, exhibit certain traits (e.g., intrinsic motivation) that make them successful in the transfer process.

A recent study by Calcagno and Roksa (2010) considered credit accumulation specifically and found that students who meet the twenty-four credit hour, thirty-six credit hour, and forty-eight credit hour thresholds are more likely to transfer than their peers who complete fewer units; the effect on transfer was strongest for students who earned forty-eight credit hours. Moreover, several researchers emphasize the importance of reaching credit thresholds in a timely fashion (Hagedorn et al., 2008; Lee & Frank, 1990; Roksa & Calcagno, 2008).

Gateway courses.

In addition to the other curricular choices made by community college students, the completion of gateway courses, typically mathematics and English, is pivotal for bolstering upward transfer (Cabrera et al., 2005; Lee & Frank, 1990; Moore et al., 2009). Notably, several researchers employ transcript and/or term-by-term analysis to identify the gateway courses that impact upward transfer (Hagedorn & Lester, 2006; Moore et al., 2009; Roksa & Calcagno, 2010). Hagedorn and Lester (2006) employed data from the Transfer and Retention of Urban Community College Students (TRUCCS) study to explore factors that contribute to “transfer readiness” which they defined as taking the necessary courses deemed important for upward transfer (p. 835). They argue that characterizing upward transfer as an academic pursuit that evolves over time rather than a dichotomous measure of success allows scholars to identify and measure the academic “progress of community college students on the path to transfer” (p. 835).

Hagedorn and Lester (2006) and others (Moore et al., 2009; Roksa & Calcagno, 2010) who employ variations of this type of analysis, overwhelmingly reveal that the completion of

college-level mathematics courses *early* in a student's college career contributes to transfer readiness and improves the likelihood of upward transfer. There is also suggestive evidence that completion of science (Cabrera et al., 2005; Lee & Frank, 1990) and English (Roksa & Calcagno, 2010) courses positively affect upward transfer, and that English courses may be uniquely important for the upward transfer of Latino students (Hagedorn et al., 2008; Hagedorn & Lester, 2006).

Remediation.

A growing proportion of students entering postsecondary education require developmental education or remediation (i.e., coursework that is not college level) (Merisotis & Phipps, 2000). Community colleges now provide the majority of remediation services for students seeking further education or to enter the labor market (Bettinger & Long, 2005). There have been many attempts to determine the effectiveness of remediation (Hagedorn, 2010; Moore & Shulock, 2009; Roksa, 2006a; Sheldon, 2009; Wang, 2010), but few studies consider transfer as a specific indicator of success (Bahr, 2008b; Bettinger & Long, 2005; Cabrera et al., 2005; Dougherty & Kienzl, 2006; Ponticelli & Russ-Eft, 2009).

Contrary to common rhetoric about remediation, Bahr (2008b) and Bettinger and Long (2005) each find that students who completed the mathematics remediation sequence had transfer outcomes similar to students who reached college-level mathematics without remedial coursework. Others suggest that simply taking remediation mathematics courses does not negatively affect students' ability to transfer (Cabrera et al., 2005; Dougherty & Kienzl, 2006). In addition, Ponticelli and Russ-Eft (2009) find remediation to be effective in facilitating upward transfer for students with cognitive, physical, and emotional disabilities. These encouraging findings must be tempered by the fact that nearly three-fourths of students who begin remedial

coursework do not finish the necessary sequence(s) (Bahr, 2008b; Cohen & Brawer, 2008; Merisotis & Phipps, 2000). Moreover, Bahr (2008b) concludes that eighty percent of the students who attrite from the mathematics remedial sequence do not transfer.

The evidence regarding remedial reading coursework is less encouraging (Bettinger & Long, 2005). In a historical review and synthesis of literature on remediation, Merisotis and Phipps (2000) explain that the need for remediation in reading substantially reduces the likelihood of college success generally. Likewise, Cabrera et al. (2005) determined that remedial coursework in reading reduced the prospects for upward transfer for most students. The effects, however, were positive for low-income students, but the authors offered no explanation for the differential impact of remedial reading courses for this subgroup.

In addition to evaluating the effectiveness of remedial coursework in relation to student outcomes such as upward transfer, future research must explore the impact of these courses on different types of students and consider ways to improve the success rate for students who enter a remedial sequence in general.

Completion of a credential/associate's degree.

Recent trends indicate that most students who transfer to a four-year university do so without earning an associate's degree (NCES, 2008). Even so, evidence provided by Roksa and Calcagno (2010) and Eagan and Jagan (2009) affirm the importance of earning an associate's degree because they found that these students are significantly more likely to transfer than their counterparts who do not complete an associate's degree. Importantly, Sheldon (2009) found that students who earned an associate's degree in a vocational field (e.g., computer science or business) were more likely to transfer to for-profit universities. Future research should attempt

to determine what skills and knowledge students who complete an associate's degree gain that is beneficial for upward transfer.

With regard to other credentials, Bahr (2008b), in an evaluation of the effectiveness of mathematics remediation, found that the “typical college math completer and remedial math completer have roughly [an equal] chance of transferring without or without a credential” (p. 437). Additional research is necessary to determine the impact of completing a credential on upward transfer for all students.

Academic integration.

Some scholars also borrow explicitly from the work of Tinto (1987, 1993) and use several measures of academic integration to predict upward transfer (Dougherty & Kienzl, 2006; Nora & Rendón, 1990). For instance, Dougherty and Kienzl (2006) used measures of “conditions facilitative of a commitment to the academic life” of a community college (p. 462). Variables representing academic integration included: whether students talked to an academic advisor, talked about academic matters with faculty outside of class, attended career-related lectures, or participated in study groups with other students. Only one of the variables, “participated in study groups with other students,” had a significant impact on upward transfer. The authors concluded that the academic integration variables “proved to have very little impact on transfer between community colleges and four-year colleges” (p. 479).

Another set of researchers (Nora & Rendón, 1990) hypothesized that constructs from Tinto's model of student retention also affect students' predisposition to transfer (e.g., behaviors and attitudes exhibited during community college enrollment). Using structural equation modeling (SEM), the authors determined that academic integration is causally related to a students' predisposition to transfer. In sum, Nora and Rendón (1990) asserted that students with

higher levels of academic integration had a higher probability of transfer than students with lower levels of academic integration.

Social integration.

Like the work referenced in the section on academic integration, there are also researchers who explore whether social integration in college impacts upward transfer. Velez and Javalgi (1987) used indicators of social integration such as on-campus employment and living on-campus and found that these variables positively influence upward transfer. The authors concluded that social interaction improved students' chances for transfer because they were integrated into campus life.

Later work by Nora and Rendón (1990) investigated whether measures of social integration are associated with predisposition to transfer. In their study, social integration included activities such as: involvement with extracurricular activities, reading the school newspaper, and participating in freshmen orientation. The authors concluded that students with higher levels of social integration were more likely to “have better attitudes about transferring and to have engaged in some form of transfer behavior while at the [community college]” (p. 248).

Employment during college.

A number of studies question whether students at four-year universities, who were employed during college, experienced negative educational outcomes. At the community college level, two studies concluded that employment reduces the likelihood of transfer (Crisp & Nora, 2010; Dougherty & Kienzl, 2006) and that the negative effect of employment is exacerbated as the number of hours worked per week increases (Dougherty & Kienzl, 2006).

However, an earlier study by Velez and Javalgi (1987) found that students with on-campus work-study positions were more likely to transfer than students who worked off-campus, suggesting that not all employment adversely affects the pursuit of utilizing the transfer function. The influence of teaching faculty.

Some researchers find that the behaviors, attitudes, and pedagogical practices of community college teaching faculty affect students interested in transfer. In particular, a synthesis of qualitative research assessing students' perceived barriers to transfer found that students believed faculty watered down courses and presented material that would not prepare them for university-level coursework (Rendón & Mathews, 1989). Students also indicated that faculty were not knowledgeable about transfer policies, which forced them to turn elsewhere for advice about transfer. In another qualitative study, Rendón and Valadez (1993) reported that cultural differences between White faculty and students of color negatively impacted students' academic goals, including transfer. The vast majority of literature on student-faculty interaction, however, affirms consistently the importance of this relationship in light of key educational outcomes (Endo & Harpel, 1982; Kuh & Hu, 2001; Lampion, 1993; Lundberg & Schreiner, 2004). Specific to community college students, there is also a limited body of quantitative research that suggests student-faculty interaction can have a positive effect on community college students' quality of effort in coursework, intellectual growth, and desire to transfer (Cejda & Kaylor, 2001; M. D. Thompson, 2001; Volkwein, King, & Terenzini, 1986).

A review of these studies reveals that there are important differences in the use of the transfer function given students' experiences during the time they are enrolled in a community college. Scholars argue that these findings provide guidance to practitioners and policymakers

by drawing attention to points at which interventions can be implemented to improve students' likelihood of upward transfer (Moore & Shulock, 2009).

Limitations of sociological research on upward transfer

The existing literature is limited in that it often fails to consider psychosocial frameworks in studies related to upward transfer. Such frameworks have the potential to improve our understanding of the relationship between individual-level psychosocial factors and actual behaviors (e.g., transfer). Moreover, as discussed in the introduction to this chapter, when researchers have considered psychosocial factors in extant empirical literature, current conceptualizations of the educational goal of upward transfer are insufficient. These are the primary limitations the present study sought to explicate in order to augment sociological frameworks and improve future studies on upward transfer.

In particular, most studies on upward transfer do not recognize the theoretical distinctions between two types of cognitive beliefs, aspirations and expectations, when assessing the educational goal of upward transfer. These distinctions are important because, when utilized appropriately, these beliefs are reliable and valid predictors of future behavior (Ajzen, 1985, 1991; Boxer, Goldstein, DeLorenzo, Savoy, & Mercado, 2011). On the one hand, the use of level of aspiration (Lewin, Dembo, Festinger, & Sears, 1944), an affective or value construct, related to an educational goal, considers the extent to which an individual would like to reach some level of educational attainment and reflects how they feel toward that goal (Morgan, 2006). Several researchers have linked levels of aspiration to the psychological experience of being attracted to (or repulsed by) an object or activity (Wigfield, Tonks, & Klauda, 2009). Critics of aspirational constructs note that such evaluations of educational goals are influenced heavily by societal norms (e.g., American college for all mantra), and do not include an assessment of

reasonable constraints (e.g., lack of expertise/knowledge, low acceptance rates by a university) that may prevent a someone from reaching a particular goal (Carter, 2002; Jacob & Wilder, 2010).

On the other hand, the use of expectations related to an educational goal, a cognitive construct, aims to reflect realistic appraisals of whether a student thinks he or she will reach a particular goal (Morgan, 2006). Unlike aspirations, an assessment of educational goals that incorporates expectations includes a consideration of potential constraints that may hinder educational attainment. Despite these theoretical provisions detailing differences between the two constructs, researchers tend to use the terms expectations and aspirations interchangeably (Jacob & Wilder, 2010; Morgan, 2006). Perhaps researchers tend to use the terms interchangeably because they recognize that both aspirations and expectations attempt to capture motivational cognitions that researchers believe will influence students' behaviors and academic trajectories (Morgan, 2006). The desire to do so is understandable, given that constructs are conceptually proximate (Boxer et al., 2011). Unfortunately, these distinctions are not merely theoretical.

Aside from the conceptual differences, there are also empirical implications that extend from either the use of aspirations or expectations to determine students' educational goals. To ask a student what his or her goals are, without consideration of perceived or real constraints, often results in a situation where aspirations exceed expectations (Carter, 2002; Jacob & Wilder, 2010). In practice, the use of aspirations to gain insight into students' educational goals may not take into account lack of academic aptitude and/or structural constraints beyond the control of students. For example, upon entry into postsecondary education via a community college, nearly three-fourths of the students state that they aspire to transfer to a four-year college or university.

Yet, it is clear from existing empirical research that less than one-fourth of those students ultimately transfer (Cohen & Brawer, 2008; NCES, 2001, 2003, 2008). It is conceivable that we observe such a gap between community college students' stated aspirations and future behavior because they are typically not given the opportunity to consider the many reasons why transfer may not be a reasonable expectation (e.g., poor institutional support, inadequate academic preparation). The present study was designed to garner information about the multiple dimensions of educational goals related to transfer (e.g., transfer intentions) to incorporate these realities.

There are also other limitations of this existing literature that are not dealt with specifically in this study, but must be acknowledged. In general, there is a lack of qualitative research in the community college context and as a result, few (Rendón & Valadez, 1993; Shaw & London, 2001; Suarez, 2003) studies examine the specific social processes related to upward transfer. For example, evidence indicates that completion of gateway courses is related significantly to upward transfer (Calcagno et al., 2007; Roksa & Calcagno, 2010), but we have little insight into what happens in those courses that benefit students interested in transfer. Qualitative methodologies are well suited to provide researchers with explanations for the relationships between variables uncovered by quantitative methodologies.

Additionally, the available data sources are limited in important ways that constrain researchers interested in learning more about the transfer function. For instance, the studies that employ institutional- and state-level data on upward transfer describe context specific trends (Bahr, 2009a, 2009b, 2010a; Kraemer, 1995; Leinbach & Jenkins, 2008; Roksa & Calcagno, 2010), but the researchers are unable to make claims that are generalizable to community college students in other contexts. Similarly, although data from the National Center for Education

Statistics (NCES) are national longitudinal surveys of American postsecondary students, the data are not representative of all community college students (Dougherty & Kienzl, 2006; Roksa, 2006a). For example, the National Educational Longitudinal Study (NELS) contains information on students who entered postsecondary education immediately after high school, but does not allow scholars to explore the impact of age on upward transfer (Dougherty & Kienzl, 2006).

Another important limitation of existing research on upward transfer is related to the use of racial background and other demographic characteristics such as gender or socioeconomic status in statistical models. Although many of the studies find that “differences exist” (e.g., minorities are less likely to transfer), we know very little about whether the identified factors differentially affect various subgroups of students (Zuberi & Bonilla-Silva, 2008). For example, we know that lower socioeconomic status students do not use the transfer function as frequently as their more advantaged peers, but current research offers few explanations for this difference. While there is a functional value to the simple construction of various background characteristics (e.g., summarization and description), the narrow use of dichotomous measures of these traits understates the experience of the groups the variables are intended to represent. Thus, rather than including statistical “controls” for racial background or socioeconomic status, future researchers should consider the theoretical and socio-historical underpinnings of the variables included in models of upward transfer. The use of use separate models or interaction terms would highlight the important intersection between demographic characteristics (e.g., socioeconomic status and racial background).

In addition, although many of the questions posed by researchers interested in studying upward transfer intend to determine whether “one thing leads to another,” few (Calcagno et al., 2008; Doyle, 2009) of the studies reviewed offer evidence of causal relationships between

variables (Murnane & Willett, 2010). Because typical regression techniques (e.g., ordinary least squares, logistic regression) are unable to “control for” omitted variable bias (OVB) we cannot be certain that the observed relationships are not a result of some impact of unmeasured variables on upward transfer (e.g., intrinsic motivation). It may not be important to identify a causal relationship between demographic characteristics and upward transfer, but future research should attempt to determine the causal impact of programs, services, and other policy interventions under the control of community colleges.

The Need for An Integrated Social Psychological Model of Upward Transfer

The particulars and limitations of the dominant theoretical frameworks – status attainment models, organizational impact models, and interactionist models – that guide much of the empirical work on transfer have already been discussed. Rather than reiterate these points in detail, this section draws attention to the contributions and commonalities across the frameworks, with a specific focus on aspects of the models that highlight the need for an integrated psychosocial model of transfer. Whereas psychosocial factors are secondary concerns in existing approaches, such an integrated psychosocial model should include an intentional consideration of psychosocial factors that also influence transfer.

Status attainment theories. Status attainment theories elevate the importance of psychosocial factors (e.g., educational aspirations), particularly for less advantaged people, but the theories offer little insight to understand what influences (impacts) students’ educational goals once they enter postsecondary education. In general, the tradition of status attainment describes the cumulative advantage conferred to children based on their familial experiences. These theories add to our understanding of the empirical relationships between the student background characteristics and upward transfer. Concepts from the Wisconsin model provide

higher education researchers with a more robust conceptualization of some of the variables identified as important factors related to upward transfer (e.g., educational aspirations). For example, Sewell, Haller, and Portes (1969) suggest what we can assume about students with various levels of educational aspirations. Their model explains that individuals with “high” educational aspirations (e.g., those who intend to transfer) grew up in socially and economically advantaged families, had a good history of academic performance, and received support and role modeling for their educational endeavors from their parents and significant others. However, one of the most cited limitations of status attainment theories is that the models are unable to predict or explain why “cross pressured” individuals, such as racial minorities or those from lower socioeconomic backgrounds, develop higher educational aspirations (Sewell & Shah, 1967). These theories highlight the powerful role of educational aspirations (goals) earlier in the life cycle, but fall short in their ability to provide a long-term framework to conceptualize educational goals and the role they play in the attainment process later in life, including during the collegiate years.

Organizational impact theory. There are also several components of the Berger-Milem Model of College Impact that underscore the need for an integrated psychosocial model of transfer. In general, the theory broadly describes the impact that institutions can have on student outcomes. For example, Berger and Milem (2000) argue that the more “homogenous, congruent, and consistent organizational features (e.g., mission, resources, and program) are with the characteristics of the students on campus, the more likely the institution is to produce some sort of accentuation or conversion effect on student outcomes” (p. 315). In other words, the theory suggests that the ideal environment for positive student outcomes is an institution with a particular mission (e.g., liberal arts education) that attracts students with goals and values similar

to that mission. Applying these assertions to the community college context highlights important challenges for these institutions. By definition, community colleges are campuses with varied and often competing missions that attract students with a variety of goals and aspirations. As such, Berger and Milem would characterize community colleges as “weak environments” and argue that such institutions tend to reinforce existing patterns of beliefs and behaviors among students (known as anchoring effects). Similar to the status attainment theories, the organizational impact model discussed here suggests that “goals” are key for student outcomes (e.g., transfer), and more specifically that shared goals among members of the college environment are critical. However, the theory is imprecise as to how conceptualize and measure educational goals, and also offers little perspective on how and why shared goals influence student outcomes.

Interactionist theory. Although Tinto’s (1975, 1987, 1993) Theory of Student Departure is used typically to study persistence and is heavily critiqued, there are aspects of the theory that can contribute to higher education researchers’ understanding of the psychological results of the academic and social experiences of community college students. Generally, Tinto notes that students enter postsecondary education with a variety of previous academic experiences and personal characteristics that affect not only their initial commitments or dispositions (e.g., educational goals) and preparation for college, but also their experiences with and perceptions of the academic and social systems of a college. The cornerstone of Tinto’s model with regard to the present study is that students modify their initial educational goal commitments as a result of collegiate experiences (negative or positive). Applying Tinto’s ideas about goal commitment and student interactions with the academic system of a college, we can assume that as a result of positive interactions with the academic system of a community college

(e.g., academic success, positive interactions with faculty), students reevaluate their commitment to the goal of transfer to a four-year institution. The conceptual shortcoming of this model is the inability to provide theoretical specificity to define students' subsequent goal commitments.

Questions that remain include: How are these subsequent goal commitments formed? Why do these commitments change? and In what ways do these commitments change? In the context of community colleges and the goal of transfer, answers to these questions would improve our ability to understand how and why students, who initially intended to transfer, change or modify that goal.

The takeaway from the brief review of the contributions and shortcomings of the dominant frameworks that guide research on transfer is that decisions to transfer (or not) may be better understood if we seek both sociological and psychological explanations. Although the status attainment, organizational impact, and interactionist theories are primarily sociological in tradition and approach, each of them recognizes or incorporates the role of psychosocial explanations or processes in relation to student outcomes (Bean & Eaton, 2000; Bean, 1982a). The role of these psychosocial/subjective variables, however, is often secondary to the role of more objective influences on student outcomes.

Chapter Two Summary

The current body of literature on upward transfer is a rich source of information related to the transfer function. Three categories of variables – student background characteristics, institutional characteristics, and collegiate experiences – receive the majority of the attention from researchers. Unfortunately, the common theoretical frameworks and resultant constructs and variables identified by empirical research do not provide adequate explanations for why we observe so few students making the transition from a community college to a four-year college

or university (Hagedorn, 2010). The lack of attention to psychosocial factors and the relationship between subjective beliefs and future behavior in extant literature presents an opportunity to deepen examinations of community college students' educational goals. However, use of either affective constructs (e.g., aspirations) or cognitive constructs (e.g., expectations) is incomplete without the other as a complement, especially to understand future behavior. The next chapter considers and explains a model that integrates each of these elements.

Chapter Three: Literature Review II

The theoretical and empirical literature reviewed in the previous chapter identified broad sociological, organizational, and experiential explanations for the subpar transfer rates observed among community college students. The review also revealed that it is necessary to include social psychological perspectives in future work on upward transfer, and to do so with theoretical specificity in order to capture the multidimensional motivational aspects of students' educational attainment process.

Given the limitations of existing literature, the current chapter discusses a theory that emphasizes the theoretical distinctions between aspirations and expectations, and supplements these constructs with other psychosocial factors that jointly provide better explanations for students' goals (e.g., intentions) and future behavior (Wigfield, 1994). What follows is a summary and critique of two expectancy-value theories, the theory of reasoned action (TRA) and the theory of planned behavior (TPB), for the purpose of improving the study of upward transfer.

Expectancy-Value Models

Expectancy-value models provide a framework for a deeper understanding of community college students' behavior. Importantly, expectancy-value theories offer superior theoretical grounding for future empirical research on upward transfer than current frameworks because these theories integrate value (e.g., aspirations) and expectancy (e.g., expectations) beliefs into a unified framework. For example, a student may value transfer (e.g., additional education), but may not feel capable of completing the necessary tasks (e.g., pass remedial coursework) and expect to fail. According to expectancy-value theories, this student will be less likely to engage

in the necessary tasks to become eligible to transfer. As such, expectancy-value theories reflect a general cognitive perspective on motivation and future behavior (Wigfield, 1994, p. 47).

According to expectancy-value theories, attitudes toward an object or behavior are the key determinants of individual behavior (Feather, 1982; Fishbein & Ajzen, 1975). In these models, attitudes are defined as a combination of expectancies and values. Expectancies or expectations are individuals' beliefs and judgments about whether a particular action can be performed to some standard of success. These expectations are sometimes referred to as efficacy expectations, reflecting an assessment of the subjective probability that the individual will succeed (Bandura, 1977). Similarly, broad definitions of values refer to the beliefs individuals have about the potential outcomes (e.g., positive or negative consequences) that may occur following the action (Feather, 1992, p. 110). Other researchers have used definitions that are more specific and discuss the importance of task value to describe the qualities of various tasks assigned by individuals (Wigfield & Eccles, 2000; Wigfield et al., 2009). In both cases, values are subjective because individuals' assign different values to the same outcome or task and the goal is to assess how the value assigned to an outcome or task will influence an individual's desire to do the task (Wigfield & Eccles, 2000). By conceptualizing expectations and values within an integrated framework, expectancy-value theories describe and explain cognitive motivational processes central to the understanding and prediction of human behavior (Bohner & Wanke, 2002; Wigfield, 1994).

The Theory of Reasoned Action (TRA)

The theory of reasoned action (TRA), developed by Martin Fishbein and Icek Ajzen (1975), is one of the original expectancy-value models (Bohner & Wanke, 2002). TRA was derived from the social psychology discipline; the authors wanted to better understand the

determinants of attitudes and to ultimately predict individuals' behavior. As was demonstrated in the previous chapter, researchers interested in upward transfer tend to emphasize a range of variables from student background characteristics on one end of the spectrum, to the impact of the college or university on the other end of the spectrum, to predict transfer. However, social psychologists "have tended to focus on an intermediate level, the fully functioning individual whose processing of available information mediates the effects of biological and environmental factors on behavior" (Ajzen, 1991, p. 179). Researchers who apply TRA assume that individuals process information, form underlying attitudes toward a behavior, and ultimately act (or not) in a rational manner. More importantly, social psychologists and others use the theory to understand and predict behaviors such as upward transfer (Montaño & Kasprzyk, 2008). Though the name suggests otherwise, the theory does not focus solely on rational behaviors. Rather, Fishbein and Ajzen (1975) argue that individuals weigh various options and consider the implications of action or inaction prior to behaving in a particular way (i.e., reasoned action).

According to the theory of reasoned action, the most important determinant of human behavior is behavioral intentions (BI), which are influenced by attitudes about the particular behavior and social normative perceptions regarding that behavior (Fishbein & Ajzen, 1975; Montaño & Kasprzyk, 2008). These intentions are presumed to capture motivational aspects of human cognitions that influence behaviors through an individual's willingness to try hard and plan to exert effort in order to perform the behavior (Ingram, Cope, Harju, & Wuensch, 2000, p. 215). It is assumed that attitudes and social norms contribute to intentions as an individual considers salient beliefs about whether engaging in the behavior under consideration will result in a particular outcome (Madden, Ellen, & Ajzen, 1992). In other words, the model can be applied to the study of motivation of students in relationship to a variety of relevant outcomes.

The figure below (see Figure 3.1) is a schematic representation of behavioral intention formation.

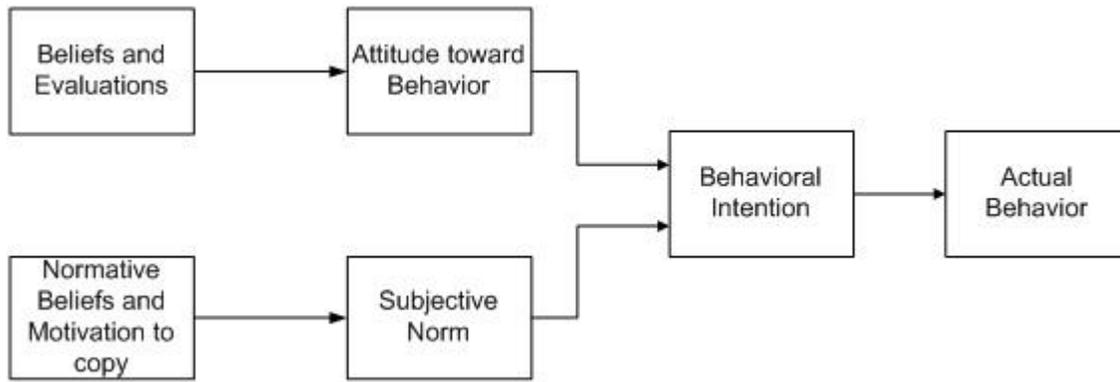


Figure 3.1. The theory of reasoned action

The first determinant of behavioral intention (BI) is attitude toward to the behavior (ATB). Attitude, a value construct toward the behavior, is assumed to reflect an individual's underlying, yet accessible, behavioral beliefs regarding the likelihood that the behavior will result in a particular outcome or set of outcomes, as well as, a person's evaluation of each salient outcome (Ajzen, 1991, 2005; Bohner & Wanke, 2002; Fishbein & Ajzen, 1975, 2009). Simply put, attitude toward the behavior refers to the individual's general assessment that a particularly behavior is worthy or unworthy. For example, a community college student may believe that transfer to a four-year college or university will result in more opportunity, and thus hold positive views of the tasks necessary to transfer. The second determinant of behavior intentions are subjective norms (SN) or the expectations of others about the behavior. Whereas attitudes reflect the personal nature of intention formation, subjective norms reflect the social influence on intentions.

Subjective norms reflect an individual's accessible normative beliefs regarding a particular behavior. It is assumed that normative beliefs are influenced by an individual's

motivation to comply with a set of significant referents who may approve or disapprove of them performing a specific behavior (Ajzen, 1991, 2005; Bohner & Wanke, 2002; Fishbein & Ajzen, 1975, 2009). In other words, subjective norms refer to a person's beliefs of whether important people would want them to engage in a particular behavior (or not). For example, a student's spouse may disapprove of their desire to transfer to a four-year college or university, and if the student values the opinion of his/her spouse, he/she might feel less inclined to pursue transfer-related courses or opportunities. In general, individuals will form intentions to engage in a certain behavior when they evaluate it positively and when they believe that important others think they should engage in the behavior (Ajzen & Fishbein, 1980, p. 6). Taken together, the theory suggests that the combined influence of one's attitude toward a behavior and subjective norms about that behavior will result in favorable or unfavorable behavioral intentions.

The Theory of Planned Behavior (TPB)

Although the theory of reasoned action made significant contributions to the study of attitudes and behaviors, Ajzen and Madden (Ajzen & Madden, 1986; Ajzen, 1991) proposed the theory of planned behavior (TPB), an extension to TRA, that improved the explanation and prediction of behavioral intentions and actual behavior. Like TRA, the theory of planned behavior maintained that behavioral intentions (BI) are central determinants of actual behavior and are influenced by attitudes (ATB) and subjective norms (SN). However, a review of the figure below (see Figure 3.2) reveals some important additions to the model.

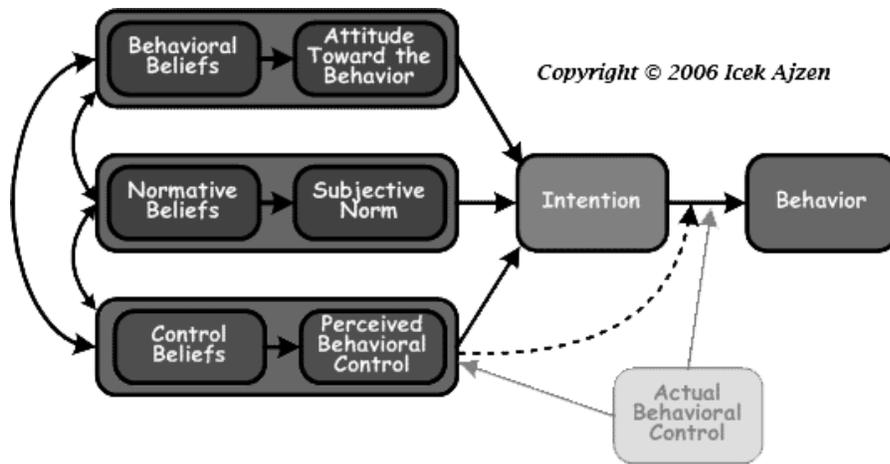


Figure 3.2. The theory of planned behavior

Ajzen and Madden's (1986) conceptual refinements of the model recognized that TRA was empirically insufficient when one considered behaviors over which individuals had incomplete volitional control (e.g., complex behaviors that require extensive planning or preparation). They identified internal factors (e.g., skills, abilities, planning), as well as external factors (e.g., time, opportunity, dependence on others), as examples of issues that might affect control over an intended behavior (Ajzen & Madden, 1986; Böhner & Wanke, 2002).

Accordingly, Ajzen and Madden put forth the theory of planned behavior in an attempt to ensure better prediction behaviors over which individuals have limited control (Ajzen & Madden, 1986, p. 456). They added a third determinant of behavioral intentions (BI) to the model, perceived behavioral control (PBC)⁷, to explain behaviors for which individuals held positive assessments (i.e., attitude), received encouragement from important referents (i.e., subjective norms), but encountered some impediment that prevented the intended behavior. Like the other major determinants of behavior, perceived behavioral control is assumed to reflect accessible underlying control beliefs which represent the individual's perception that they have the

⁷ Ajzen (1991, p. 184, 2012, p. 17) argues that the concept of perceived behavioral control is conceptually equivalent to Bandura's (1977) perceived self-efficacy construct used commonly in traditional higher education research.

capability to carry out the intended behavior (Ajzen, 2005; Madden et al., 1992; Montaña & Kasprzyk, 2008). Prior experience with the intended behavior may inform these control beliefs, though it is more common that observing others experiences with the behavior, second-hand information about the behavior, or other factors that will affect the perceived ability to perform the intended behavior, inform such control beliefs (Ajzen, 2005, p. 125).

It is important to note that the theory of planned behavior does not consider actual behavioral control. This could be attributed to measurement difficulties, but Ajzen (1991) emphasizes that the perception of behavioral control is conceptually more relevant because of its impact on intentions and actions (i.e., behavioral goals). Nonetheless, perceived and actual behavior control are related. For example, when an individual believes they have the resources and opportunity to perform the intended behavior, the more likely they are to form intentions to perform that behavior (i.e., increased motivation). The arrow in Figure 3.2 extending from perceived behavioral control (PBC) to behavioral intention (BI) represents this relationship. Similarly, the actual resources and opportunities afforded to people tends to dictate the probability of performing an intended behavior (Ajzen, 1991, 2005). When perceptions of control are an accurate appraisal of actual control, we expect a direct relationship between perceived behavioral control (PBC) and actual behavior (AB) (Ajzen, 2005; Montaña & Kasprzyk, 2008). In other words, perceived behavioral control can influence behavior indirectly, via heightened motivation (intentions), and it can also be used to predict behavioral directly because it may be considered a partial substitute for a measure of actual control (Ajzen, 2005, p. 119). Thus, the higher the level of compatibility between perceived and actual behavioral control, the more useful knowledge of perceived behavioral control would be in assessing behavioral intentions (BI). The arrow in Figure 3.2 that extends from perceived behavioral

control (PBC) to behavior, through the shaded actual control box, represents this relationship.

Taken together, the theories of reasoned action (TRA) and planned behavior (TRB) provide grounded insight into the theoretical and observed connection between human attitudes, intentions, and behavior. An understanding of the three major constructs of the theories offers an opportunity to determine the relative importance of each for various behaviors, draft targeted policy recommendations, and design interventions to influence behavioral intentions (Ajzen, 2005; Montaña & Kasprzyk, 2008). In fact, TRA and TRB have been used by researchers to predict behavioral intentions (i.e., motivation) across a variety of behavioral domains with exceptional precision, explaining between 40% to 50% of the variation in intentions, depending on the behavior under study (Ajzen, 2005; Armitage & Conner, 2001, 2001). With regard to student transfer behavior, the theories offer an opportunity to better evaluate and understand the gap we observe between community college students' stated educational goals and reality (NCES, 2003).

The Role of Background Factors

Although not depicted in Figure 3.2, the role of background or demographic factors in the context of the theory of planned behavior is an important consideration of the model. A major assumption of the TPB is that the underlying beliefs (i.e., behavioral, normative, and control beliefs) theorized to contribute to the primary constructs (e.g., attitudes, subjective norms, and perceived behavioral control) are not innate, but are actually formed as a result of interactions with society (Ajzen, 2005; Fishbein & Ajzen, 2009). Put differently, the theory asserts that variations in demographic characteristics do not cause or explain observed differences in behavior (e.g., upward transfer). However, Fishbein and Ajzen (2009) do recognize the importance of background factors, but note that there are a wide variety of factors that could be

considered. They emphasize that it is important for researchers to consider a particular demographic factor only if there is empirical research that points to the importance of a particular characteristic. In other words, the dotted lines in the model suggest that whether a demographic characteristic impacts a given set of attitudes and beliefs is an empirical question that can be explored in the context of the theory of planned behavior. The preferred approach is to compare the attitudes and beliefs for subgroups of the population that behave differently or for which there is some inequitable trend in outcomes. As such, one goal of the present study was to attempt to provide insight into Black and Latino students' attitudes and beliefs about transfer, in hopes of providing insight into why they transfer at lower rates than their White peers.

Limitations of the Theory of Planned Behavior (TPB)

As with any theoretical framework, TPB has some limitations in predicting behavior relevant for the present study. First, there is some concern that the TPB does not deal explicitly with the issue of context and opportunity structures as they relate to eventual behavior (Ajzen, 2012a, 2012b). The current study attempted to extend the theory by adding a measure, "perceptions of transfer climate," to give participants an opportunity to appraise the programs, services, and individuals thought to provide support for those interested in transfer. As discussed above, the TPB does not explicitly consider actual behavioral control, which excludes any integration of objective measures of resources and opportunities that could support the translation of intentions to behavior. As a social psychological model of motivation and behavior, the model only includes cognitive appraisals at the individual-level (i.e., perceived behavioral control) of whether a person believes he/she can perform a behavior, given adequate resources and the ability to overcome obstacles (Ajzen, 2002). Unfortunately, the theory includes no subjective assessment of the social structures, including aspects of schools, which

Kerckhoff (1976, 1984) noted as key determinants of attainment when commenting on earlier social psychological status attainment models. Ajzen and other researchers have responded to this limitation, suggesting that intentions be viewed as behavioral plans that, in conjunction with appropriate opportunities and resources, enable attainment of a behavioral goal (Ajzen & Madden, 1986; Conner & Armitage, 1998).

Another issue worth noting relates to disagreement among researchers regarding the perceived behavioral control construct that is central to the TPB. Several researchers challenge Ajzen's (1991, 2012a) claim that perceived behavioral control is conceptually equivalent to Bandura's (1977) concept of perceived self-efficacy (Armitage & Conner, 2001; Conner & Armitage, 1998). In particular, some have argued that the two are not synonymous and that perceived behavioral control can be separated into two distinct control processes that reflect internal (i.e., self-efficacy) and external (i.e., controllability) control over behavior (Armitage & Conner, 2001, p. 1439). To be sure, Ajzen (2002) revisited this issue and provided a few clarifications and suggestions for future research. First, Ajzen recommended that perceived behavioral control be read as "perceived control over performance of a behavior" which refers to "people's expectations regarding the degree to which they are capable of performing a given behavior, the extent to which they have the requisite resources and believe they can overcome whatever obstacles they may encounter" (Ajzen, 2002, pp. 676–677). He further stated that whether resources and obstacles are internal or external to the person is immaterial and that Bandura (1977) never indicated that self-efficacy beliefs were restricted to internal factors. However, Ajzen (2002) recognized that it is possible to assess whether performance of behavior is dependent on internal and/or external factors, and suggested that both self-efficacy and controllability may reflect beliefs about the presence of internal and external factors related to

the target behavior. Nonetheless, he encouraged future researchers to treat this as an empirical question.

Another important criticism is that TPB empirical studies rely on behavioral self-reports rather than objective measures of future behavior (Fishbein & Ajzen, 2009). The concern with self-reports of behavior is that this information may include inaccurate memory recall and/or bias in favor of socially desirable activities. Indeed, some researchers demonstrated stronger relationships between various TPB constructs and self-reported behavior than with objective measures of behavior (Armitage & Conner, 2001).

A final noteworthy issue is the possibility of including additional constructs that might improve the prediction of intentions and behavior. Some examples of constructs used to extend the TPB include: belief salience, self-identity/racial identity, past behavior/habit, variants of PBC construct, moral norms, and affective beliefs (Conner & Armitage, 1998; Davis et al., 2003). Each of these constructs are supported by empirical evidence, improving the prediction of intentions and behavior in various contexts, and as a result, suggest that the TPB constructs are necessary, but not sufficient determinants of intentions and behavior (Bagozzi, 1992; Conner & Armitage, 1998).

Predicting intentions from personal beliefs and attitudes: Empirical support

Despite such limitations, the utility of the theories of reasoned action and planned behavior is supported by two decades of empirical research that demonstrates the predictive validity of behavioral intentions (Fishbein & Ajzen, 2009). A review of Armitage and Conner (2001), the most cited meta-analysis of research that utilized the planned behavior framework, provides a robust indication of the flexibility and utility of the theory to understand intentions and predict a wide range of behaviors (e.g., condom use, smoking cessation, physical activity,

etc.)⁸. The first of the major findings central to this discussion is that the addition of the perceived behavioral control (PBC) construct to the various models accounted for an additional and significant amount of variance (~2%), beyond the reasoned action constructs. Second, the authors highlighted an average intention-behavior correlation of .47 (across 48 independent studies) accounting for 22% of the variance in behavior (Fishbein & Ajzen, 2009). Ultimately, the authors concluded that use of the theory of planned behavior returns medium to large effect size results, and thus, is a viable framework for the prediction and understanding of intentions and behaviors (Armitage & Conner, 2001).

Use of the Theory of Planned Behavior to Predict Academic Intentions & Behaviors

While researchers have used the theory of planned behavior to understand a variety of intentions and predict behaviors, there are relatively few investigations of academic decisions using samples of students. Yet, Larry Davis and his colleagues (Davis, Ajzen, et al., 2002a; Davis, Johnson, Cribbs, & Saunders, 2002; Davis et al., 2003) utilized the theory of planned behavior in three empirical studies to examine academic-related intentions of Black American students in high school. The first of these studies confirmed that each of the theory of planned behavior constructs accurately predicted intentions to persist through the current academic year and identified perceived behavioral control to be the strongest contributor to the formation of intentions. Moreover, the authors were able to use intention to complete the current school year and perceived behavior control to explain 25% of the variance in high school graduation (i.e., actual behavior) three years later (Davis, Ajzen, et al., 2002a). A second study determined that only two of the theory of planned behavior constructs (i.e., attitudes and perceived behavioral control) predicted 50% of the variance in intentions to complete the current school year. In

⁸ Other, less frequently cited meta-analyses, have produced similar results (Notani, 1998; Randall & Wolff, 1994; Sheeran, 2002).

addition, the authors explored the impact of other constructs on intentions and found that a measure of self-esteem improved the prediction of intentions by 2% over the theory of planned behavior constructs (Davis, Johnson, et al., 2002). Similar to the first two studies, a third study found each of the theory of planned behavior constructs explained 52% of the variance in intention to complete the school year. The authors also hypothesized and confirmed that several measures of perception of self (e.g., self-esteem, racial self-esteem, academic self-efficacy) would improve the prediction of intentions to complete the school year. Finally, the researchers found that attitudes toward school differed by gender and these attitudes were more important for intention formation for males (Davis et al., 2003). Collectively, these studies provide insight into the various influences on Black American youths' intentions across a variety of domains, and, in some cases, provided substantial predictive power of future behaviors.

Researchers have also used the theory of planned behavior with samples of undergraduates to explore academic decisions including: intentions to attend lectures, strive for good grades, to cheat, or to apply graduate school (Ajzen & Madden, 1986; Ingram et al., 2000; Mayhew, Hubbard, Finelli, Harding, & Carpenter, 2009). In an early test of the theory of planned behavior, Ajzen and Madden (1986) confirmed that it provided a better prediction of intentions and behavior than the theory of reasoned action. Specifically, they found that the addition of the perceived behavioral control construct improved the explanation of intentions to attend lectures and get good grades, and that intentions provided an accurate estimate of subsequent behavior. Driven by an interest to understand unethical behavior, Mayhew and his colleagues (2009) modified the theory of planned behavior by adding measures of moral obligation and high school cheating behavior to predict undergraduate intentions to cheat. In addition, they borrowed from Kohlberg's (1976) theory of moral reasoning to compare the

predictive power of the theory for students in different developmental stages. The authors concluded that the modified version of the theory of planned behavior was a viable framework to understand what influences cheating intentions and that the impact of the constructs operated differently depending on one's stage of moral identity development.

The final study discussed in this section is most closely related to the study of community college students' transfer intentions. Ingram, Cope, Harju, and Wuensch (2000) used the theory of planned behavior to predict student' intentions to apply to graduate school and actual application behavior. As the theory predicts, attitudes, subjective norms, and perceived behavioral control each contributed uniquely to the prediction of students' intention to apply to graduate school. Of these, attitudes had the highest correlation with intentions, suggesting that beliefs about the benefits of graduate school greatly influenced intentions to apply. The authors also demonstrated that knowledge of intentions and perceived behavioral control were both correlated with actual application behavior.

Though unrelated to academic outcomes, other studies have focused on undergraduate students to explore a variety of non-academic intentions such as binge drinking, exercise behavior, bus usage, leisure choice, and weight loss. These studies were generally successful in explaining intentions and predicting future behavior with considerable accuracy (Ajzen & Driver, 1992; Bamberg, Ajzen, & Schmidt, 2003; Norman, 2011; Rhodes & Courneya, 2003; Schifter & Ajzen, 1985). Together with the studies of academic behaviors, these studies tell us that to some extent, the theory of planned behavior can be used to predict a variety of college students' academic and non-academic behaviors, that additional constructs may improve the accuracy of prediction for some intentions, and that behavioral intentions emerge as the most significant predictor of many behaviors.

Predicting behavior: Empirical support

Although the prediction of actual behavior is not the focus of the present study, it is important to highlight that the TPB has also been successful in predicting behavior, given the theoretical foundations applied to assess behavioral intentions. As explained by the TPB, behavioral intentions remain behavioral dispositions until, at the appropriate time and opportunity, an attempt is made to translate the intention into behavior (Ajzen, 2005, p. 99). Across a variety of behavioral studies, two meta-analytic reviews of empirical research using the TPB indicate the model has been used to explain, on average, between 19% and 39% of the variance in self-reported and observed behavior (Conner & Armitage, 1998; Sutton, 1998).

Chapter Three Summary

The theory of planned behavior was reviewed in this chapter in an attempt to fill the void in extant higher education literature that includes only limited psychosocial perspectives proven useful in other disciplines for understanding and predicting educational attainment. Though the TPB is limited in consequential ways, the theory offers future researchers an opportunity to better understand qualities, such as community college students' motivation (i.e., intention) to transfer to a four-year college or university, that enable some students to be successful while others are not. The next chapter includes a discussion of the research questions guiding the proposed study, research settings, research design, the sample, the data collection plan, key measures, and the approach to data analysis.

Chapter Four: Research Methods

The current state of higher education literature draws heavily on sociological theories as the foundation for the dominant narratives used to explain whether community college students transfer to a four-year college or university. However, the review of social psychological literature in the previous chapter provides an alternative perspective that could be used to buttress future attempts to understand and to explain students' behavior. With regard to upward transfer, psychosocial frameworks frame the act of transfer as a behavior and further assume that behavior is psychologically motivated (Bean & Eaton, 2000). As such, the goal of this study is to contribute to the higher education literature by examining a key psychosocial factor -- transfer intention -- that can be used to understand students' motivation and is associated with behavior such as the act of transferring to a four-year college or university. Closer examination of students' transfer intentions will provide insight into the psychosocial factors that might also explain the process of why a student transfers or not.

Research Design

The method of inquiry for this study is a cross-sectional correlational design. The purpose of the study is to understand how Black and Latino community college students' attitudes and beliefs inform our understanding of their intentions to transfer to a four-year college or university. A cross-sectional design was appropriate for this study because the goal was to be exploratory and descriptive, testing the relationships between three sets of theory-driven constructs and transfer intentions, and ultimately describing the motivational factors that contribute to community college students' decisions to transfer (Babbie, 1990). The analysis

was limited to Black and Latino students' transfer intentions because, despite reporting similar aspirations and expectations to transfer, there remains a disparity in the number of these students who transfer successfully when compared to their non-White counterparts (The Civil Rights Project/Proyecto Derechos Civiles, 2013). Included in this chapter are coverage of the research questions, research sites, study design, the data collection procedures, sample composition, key measures, the analytic approach employed, and limitations of the present study.

Research Questions

Informed by a robust body of research on transfer that has uncovered a number of individual, institutional, and collegiate experiences associated with upward transfer, this study extends current approaches and examines Black American and Latina/o American community college students' personal beliefs and attitudes about their transfer intentions. The broad question guiding this study is: Do concepts central to the theory of planned behavior help explain variations in Black American and Latina/o American student intentions to transfer from a community college for a four-year institution? The following are sub-questions that guide this study:

1. What aspects of the theory of planned behavior model (e.g., attitudes, subjective norms, perceived behavioral control) emerge as important for understanding and predicting community college students' intentions to transfer to a four-year college or university?
2. Do community college students' attitudes and beliefs explain intentions to transfer to a four-year college or university? If so, what is the strength of the relationships between predisposition factors and transfer intentions?
 - Do the theory of reasoned action or theory of planned behavior constructs provide a superior explanation of community college students' transfer intentions?
3. Do policy-relevant collegiate experiences (e.g., enrollment in development coursework, time enrolled, and perceptions of institutional transfer climate) moderate the relationships between the students' attitudes and beliefs and intentions to transfer to a four-year college or university?

4. What is the relationship between aspects of the theory of planned behavior model (i.e., attitudes, social norms, and perceived behavior control) and students' accessible behavioral, normative, and control beliefs related to upward transfer?

Data Collection Procedures

The University of Michigan (UM) Institutional Review Board (IRB) approved this study on November 13, 2012. Following receipt of UM IRB approval, I identified an initial set of community colleges using convenience sampling methods (Babbie, 1990) drawing from my professional network. At the same time, I posted a request for campus participation on the National Community College Council for Research and Planning (NCCCRP) ListServ. The NCCCRP is an affiliated group of the Association for Institutional Research (AIR), so its members are institutional research and planning professionals employed at community and two-year colleges. Once a community college expressed interest in participating in the study, I worked with campus- or district-level research office directors to seek IRB approval from each of the campuses. IRB requirements varied slightly by campus, but the basic approval process included submission of a research summary detailing the goals of the study, a draft of the survey instrument, and a copy of UM's IRB approval. Following receipt of IRB approval, institutional representatives were crucial in identifying study-eligible students at each campus.

Due to restrictions mandated by the Family Education Rights and Privacy Act (FERPA), campus representatives did not provide me with direct access to rosters or email distribution lists in order to identify study-eligible students (i.e., students who expressed some interest in upward transfer). Instead, I worked with each institutional representative to specify criteria for identifying study-eligible students. Indicative of the national debate concerning the best method to define a transfer student cohort (Bailey et al., 2005), these criteria were campus-specific and required close cooperation with each institutional representative. Most campuses projected

students' interest in upward transfer either from some explicit indication (e.g., direct report of transfer interest during registration) or from enrollment in a transfer-preparatory course or Associate's-level courses during the last academic term. The goal of this process was to exclude students with no apparent interest in upward transfer (e.g., certificate-oriented students), while also acknowledging that students' educational goals evolve or change over time.

After each campus defined a study-eligible sample of students, I provided the institutional representative with an email script (Appendix A) used to invite students to participate in the study and directed them to a web link in order to view the informed consent form (Appendix B) and complete the survey instrument (Appendix C). When the institutional representatives contacted students via email, they were notified that participation was voluntary and that participation or non-participation would not have an effect on their status as a student at the college. Furthermore, once a student agreed to participate in the study, they had the opportunity to opt out of individual survey questions and were able to exit the survey at any time. It is important to note, however, that after students completed the informed consent, they were asked to provide an email address. These email addresses were used so that participants could return to complete the questionnaire at a later time, if needed, and so that reminders could be sent throughout the data collection period. At the end of the survey, participants had the opportunity to enter a raffle for one of several iPads or \$25 Amazon gift cards.

A final step in the data collection process required that each of the institutional representatives provide me with the number of study-eligible students who received the email script inviting them to participate in the study. The counts for each campus were revised at a later date to account for invalid email addresses and for students who were no longer enrolled at

the institution (e.g., stop outs or dropouts) (Vehovar & Manfreda, 2008). This information was used to calculate the study response rate at the conclusion of the data collection period.

Research Sites

Six community colleges were selected as research sites for this study. A campus was selected only if an institutional representative was willing to assist in the process of identifying study-eligible students and follow the steps outlined above in order to invite students to participate. The six campuses selected were dispersed across the United States; two campuses were on the West Coast, two in the Midwest, one in the Southwest, and one in the Southeast. Within those regions, four of the campuses were in urban areas, one in a suburban area, and one in a rural community. More information about the student enrollment at each campus is included below⁹:

Midwest Community College 1, a single-standing campus, was established in 1965 and is located in a midsized urban city. The campus enrolled approximately 14,000 students, of which 60% are enrolled part-time. The racial and/or ethnic composition of the college was: 16% Black or Black American, 3.5% Latina/o American, 2.5% Asian American, 64% Caucasian, and 14% others or unidentified.

Midwest Community College 2, a single-standing campus, was established in 1923 and is located in a midsized rural city. The campus enrolls approximately 10,300 credit and non-credit students, of which 63% are enrolled part-time. The racial and/or ethnic composition of the college is: 20% Black or Black American, 4% Latina/o American, >1% Asian American, 60% Caucasian, and 14% other or unidentified.

⁹ Pseudonyms are used to mask the identity of the campuses. Campus statistics were retrieved from the Integrated Postsecondary Education Data System (IPEDS).

Southeast Community College, a single-standing campus, was established in 1965 and is located in a midsized suburban city. The campus enrolls approximately 4,000 credit and non-credit students. The racial and/or ethnic composition is: 6% Black American, 1.5% Latina/o American, 88% Caucasian, and 4.5% other or unidentified.

Southwest Community College, part of a multi-campus district, was founded in 1977 and is located in a midsized urban city. The campus enrolls 10,000 credit and non-credit students, of which 70% are part-time. The racial and/or ethnic composition is: 21% Black American, 31% Latina/o, 12% Asian/Pacific Islander, and 36% Caucasian.

West Coast Community College 1 and *West Coast Community College 2* were founded in 1915 and 1985 respectively and are members of the West Coast Community College District (WCCCD), which is situated between two midsized urban cities. West Coast Community College 1 enrolls over 20,000 credit and non-credit students. The racial and/or ethnic composition of the college is: 2% Black American, 60% Latina/o American, and 16% Caucasian. West Coast Community College 2 enrolls approximately 19,000 credit and non-credit students. The racial and/or ethnic composition of the college is 2% Black American, 30% Latina/o American, and 43% Caucasian.

Research Sample

A total of 1,872 students across the six community colleges completed the survey, resulting in a 31% response rate which is unexpectedly high for online survey research (Nulty, 2008). However, the sample of interest (i.e., Black and Latino students) was drawn from the full sample for this study. The study sample of interest included 985 students, 154 Black students (16%) and 831 Latino students (84%).

Table 4.1 presents select demographic and educational characteristics of the Black and Latino samples. Reflecting national statistics in college enrollment of Black and Latino students, both samples were more likely to be female, traditional aged, and single (never married) (NCES, 2013). Although Black and Latino students were similar with regard to age and gender distribution, the Black sample had more non-traditional aged (i.e., 31 or older) students than the Latino sample, whereas the Latino gender gap was less pronounced than the Black sample. Both samples were also similarly distributed across the three lowest income groups, suggesting that many of the respondents grew up in lower-income households. A notable difference between the two samples was that Latino students were more likely to be first generation college students while the Black students were more likely to report having at least one parent with a bachelor's degree or higher. Comparing the educational characteristics of the two samples, both were fairly evenly distributed across the grade point average (GPA) and the number of semesters enrolled categories. Black students, however, were more likely to report enrollment in developmental education courses than the Latino students sampled.

Table 4.1 Comparison of full study sample with Black and Latino subgroups (N = 1,872)

	<u>Selected Demographic & Educational Characteristics</u>	<u>Full Study Sample</u>		<u>Black Sample (n = 154)</u>		<u>Latina/o Sample (n = 831)</u>	
		<i>n</i>	% of <i>n</i>	<i>n</i>	% of <i>n</i>	<i>n</i>	% of <i>n</i>
Racial/Ethnic Background	Black/African American (non-Hispanic)	154	8.39%				
	Hispanic, Latina/o, Chicana/o	831	45.29%				
	Asian American	197	10.74%				
	Native Hawaiian, Other Pacific Islander	22	1.20%				
	White, Caucasian (non-Hispanic)	611	33.30%				
	American Indian, Alaska Native	20	1.09%				
Gender	Female	1,180	64.17%	112	73.20%	553	66.79%
	Male	659	35.83%	41	26.80%	275	33.21%
Age	14-17 years old	2	0.11%	0	0%	1	0.12%
	18-24 years old	1,248	69.57%	83	56.08%	641	79.43%
	25-30 years old	267	14.88%	28	18.92%	95	11.77%
	31 or older	277	15.44%	37	25.00%	70	8.67%
Family Income (growing up)	\$15,000 or less	311	16.89%	31	20.13%	158	19.13%
	\$15,001-\$30,000	453	24.61%	39	25.32%	287	34.75%
	\$30,001-\$50,000	344	18.69%	29	18.83%	150	18.16%
	\$50,001-\$70,000	203	11.03%	12	7.79%	65	7.87%
	More than \$70,000	259	14.07%	19	12.34%	46	5.57%

	Don't know	271	14.72%	24	15.58%	120	14.53%
Marital Status							
	Single, never married	1,444	78.48%	111	72.55%	686	82.95%
	Married or domestic partnership	300	16.30%	30	19.61%	114	13.78%
	Widowed	2	0.11%	0	0%	0	0%
	Divorced	75	4.08%	9	5.88%	18	2.18%
	Separated	19	1.03%	3	1.96%	9	1.09%
First Generation Status							
	First generation student	1,013	53.26%	52	33.77%	611	73.53%
	Not first generation student	889	46.74%	102	66.23%	220	26.47%
Grade Point Average							
	3.50 to 4.00 (A Average)	528	29.32%	46	30.26%	135	16.75%
	3.00-3.49 (B average)	627	34.81%	48	31.58%	286	35.48%
	2.50-2.99 (C average)	442	24.54%	41	26.97%	248	30.77%
	2.00-2.49 (C- or D average)	146	8.11%	11	7.24%	97	12.03%
	Below 2.0 (D- or F average)	58	3.22%	6	3.95%	40	4.96%
Developmental Education Status							
	Enrolled in Developmental Education Courses	695	38.61%	82	53.95%	333	41.42%
	No Developmental Education Courses	1,105	61.39%	70	46.05%	471	58.58%
No. Semesters Enrolled at CC							
	1-2 Semesters	765	42.69%	58	38.16%	370	46.25%
	3-4 Semesters	476	26.56%	52	34.21%	190	23.75%
	5-6 Semester	292	16.29%	26	17.11%	132	16.50%
	7 or more semesters	259	14.45%	16	10.53%	108	13.50%

Survey Instrument

The source of data for this study was a twelve-part theory-driven survey instrument designed to collect self-reported information from participants (Appendix C). The survey instrument included sections that gathered demographic data, measures of attitudes and beliefs related to upward transfer, estimates of pro-transfer behaviors, and measures of perceived institutional transfer climate. The survey instrument was pretested and piloted with a sample of diverse community college students, community college administrators, and survey methodologists for the purpose of determining respondents' comprehension of the language used and identifying ambiguity of the survey items (Babbie, 1990). Following the pretest, an updated version of the survey instrument was piloted with a separate sample of community college students to assess the effectiveness of the proposed data collection procedures, to estimate the time needed to complete the survey, and to obtain preliminary psychometric information about the measures included on the survey instrument (Babbie, 1990). The final version of the survey instrument reflects minor changes to survey items based on feedback received from the pretest and pilot samples. The survey was available to participants via Qualtrics, the leading online survey distribution and collection service.

Measurement of Latent Constructs and Variables

Each of the latent constructs was developed based on the extant theoretical and empirical higher education and social psychological literature reviewed in Chapters 3 and 4. Moreover, the latent constructs were measured in accordance with the conventions described by Fishbein and Ajzen (Fishbein & Ajzen, 2009). The constructs and measures central to each of the research questions are defined and specified in this section.

Endogenous variable: Transfer Intentions (direct measure)

The items selected to measure students' motivation to transfer – assessed as transfer intention – reflect the tripartite (multidimensional) perspective of intentions, which included intentions-as-expectations, intentions-as-plans, and intentions-as-wants (Ajzen, 1985; Södurlund & Öhman, 2006). This type of measurement recognized that there are various conceptions about what it means to be motivated in relationship to transfer (Sellers, Rowley, Chavous, Nicole, & Smith, 1997). Five items were used to assess transfer intentions within the next two years. Students were asked to indicate, on a 7-point *agree-disagree* scale, to what extent they expect to, intend to, will try to, are determined to, and might not (reverse coded) transfer to a four-year college or university within two years (Davis, Ajzen, Saunders, & Williams, 2002b). The transfer intentions construct served as the endogenous (explained) variable for this study.

Behavioral, Normative, and Control Beliefs

According to the theory of planned behavior, there is a relationship between attitudes and behavioral beliefs, subjective norms and normative beliefs, and perceived behavioral control and control beliefs (Ajzen, 1991). During the pretest and pilot phases of the study, a diverse sample of community college students and community college administrators were asked to list possible motivations one might have to transfer, ideas about who might be supportive or discourage those interested in transfer, and who or what might act as a barrier for students interested in transfer. The goal of these elicitation questions was to identify salient behavioral, normative, and control beliefs that, according to expectancy-value literature, are underlying but can be used to explain the psychosocial determinants (e.g., attitudes, subjective norms, perceived behavioral control) of transfer intentions (Ajzen, 1991). The most frequently mentioned and relevant beliefs based on prior research were retained for the final survey.

Behavioral beliefs. Accessible outcomes were identified to estimate factors that underlie students' attitudes toward transfer to a four-year college or university. Students were asked first to evaluate potential outcomes associated with transfer on a 7-point *unlikely-likely* scale, the likelihood (i.e., belief strength) that transfer to a four-year college or university would result in each of the potential outcomes. The second component necessary to determine students' attitudes toward transfer was an evaluation of each of the potential outcomes. Students were asked on a 7-point *good-bad* scale (e.g., transfer to four-year college or university will...) to evaluate each potential outcome.

Normative beliefs. To determine normative beliefs in relation to important referents, students were asked on a 7-point *unlikely-likely* scale, the likelihood that various important referents think they should transfer to a four-year college or university (e.g., my counselor thinks I should transfer.). Using the same scale, students were asked to assess their motivation to comply with those referents (e.g., I want to do what my counselor thinks I should do.).

Control beliefs. Two sets of questions were used to evaluate students' control beliefs. The first questions asked, on a 7-point *unlikely-likely* scale, the likelihood that the various factors would be present (e.g., I will interact with faculty members over the next two years). The second question assessed, on a 7-point *disagree-agree* scale the extent to which the presence of the various factors would impede their ability to transfer (e.g., interacting with a faculty member within the next two years will make it harder for me to transfer).

Exogenous variables: Direct Measures of Attitudes, Subjective Norms, and Perceived Behavioral Control

One of the primary benefits of the theory of planned behavior is that it postulates that direct measures of attitudes, subjective norms, and perceived behavioral control can be used to

predict intentions to perform a behavior (and actual behavior) (Fishbein & Ajzen, 2009). These direct measures are hypothesized to mediate the influence of the underlying behavioral, normative, and control beliefs discussed in the previous section. This section describes how each of these direct measures was constructed.

Attitudes. A series of 8 evaluative semantic differential scales were used to measure students' attitudes toward transfer to a four-year college or university. These items reflect the two interrelated aspects of attitudes, instrumental and experiential evaluations of transfer. The instrumental evaluative items were intended to measure anticipated consequences of transfer, while the experiential evaluative items were included to assess experiences perceived to be associated with transfer (Fishbein & Ajzen, 2009). Study participants were asked to indicate, on a 7-point scale, whether or not they felt that transferring to a four-year college or university would be *bad-good*, *useless-useful*, or *unimportant-important* (instrumental items) and *boring-exciting*, *unsatisfying-satisfying*, or *difficult-easy* (experiential items). Items were reverse scored when necessary to make positive responses coincide with higher values (Davis, Ajzen, et al., 2002a). The attitudes construct served as one of the primary exogenous (explanatory) variables for this study.

Subjective Norms. Six items were used to evaluate students' perceived social pressure to transfer within the next two years. Each of the items was presented using an evaluative semantic differential scale (Davis, Ajzen, et al., 2002a). Reflecting the multidimensional nature of subjective norms, the included items measured both injunctive and descriptive aspects of norms. Injunctive norms refer to the perceptions of important referents about whether the participant should transfer, whereas descriptive norms refer to the perception that similar peers will or will not transfer. To measure the injunctive dimension of subjective norms, participants were asked to

indicate, on a 7-point scale, the extent to which important references expect them to transfer, would be disappointed if they did not transfer, and think they should transfer. In order to measure descriptive norms, the items asked participants, on a 7-point scale, the extent to which people like them *will transfer*, *want to transfer*, and *think that transfer is a good idea*. The subjective norms construct served as one of the primary exogenous (explanatory) variables for this study.

Perceived behavioral control. Researchers assert that measures of perceived behavioral control (PCB) reflect internal (capacity) and external (autonomy) dimensions of the PCB construct (Ajzen, 2002; Fishbein & Ajzen, 2009, p. 168). The capacity dimension of the construct refers to participants' assessment of their ability to transfer. To measure this dimension, participants were asked to indicate, on a 7-point scale, the extent to which they were *confident they can transfer*, *can overcome any problems that could keep them from transferring*, and *have the ability to transfer*. The autonomy dimension refers to whether the participants' assessment of whether transferring is under their control or completely up to them. The items intended to measure this dimension asked participants the extent to which it was mostly up to them to transfer, they have complete control over whether or not they transfer, and whether something or someone will keep them from transferring. The perceived behavioral control construct served as one of the primary exogenous (explanatory) variables for this study.

Moderators: Policy-Relevant Collegiate Experiences

In addition to establishing the relationships between the theory of planned behavior constructs and students' transfer intentions, a major goal of this study was to examine under what conditions the relationships are influenced by various collegiate experiences. The selection of collegiate experiences as potential moderators was driven by the notion that students might modify their transfer intentions -- that is, hold more or less favorable attitudes and beliefs related

to transfer -- as a result of these experiences. For example, much of the literature indicates a lower probability of transfer for students who take developmental education courses (Bahr, 2008b; Bettinger & Long, 2005; Cabrera et al., 2005; Dougherty & Kienzl, 2006; Ponticelli & Russ-Eft, 2009), but offer no insight about the psychological changes that also occur as a result of taking such classes. As a result, three moderators were selected for this study to explore some of those variations. The first, inspired by the cooling out literature and thus defined by number of semesters enrolled, was intended to reflect the cumulative experiences students had with the campus environment. The second experience was defined by a particular collegiate experience, enrollment in developmental education courses. This moderator was included based on the literature questioning the impact or efficacy of developmental coursework.

The final moderator, perceived transfer climate is an adaptation of Lewin, Lippert, and White's (1939) conception of climate which has been used to describe individuals' subjective appraisals of their environments. In the college context scholars have studied academic climate which is a reflection of students' perceptions of their academic experience. For this study, perceived transfer climate is a type of academic climate and reflects students' evaluations of the transfer pathways and various campus supports intended to encourage transfer. Previous studies have shown that student perceptions of the academic climate influence a variety of academic outcomes (e.g., persistence and success) (Graham & Gisi, 2000; Reid & Radhakrishnan, 2003). A related type of climate that is studied most frequently in the college context is racial climate which is defined by students' perceptions of their experience on a campus as racial minorities (Hurtado & Ponjuan, 2005). Some studies have found that racial minority students tend to perceive a more negative academic climate than their White peers (Allen, 1985; Hurtado & Carter, 1997). Campus climate, racial or academic, can be perceived as supportive or non-

supportive, controlling or open, or embodying particular ideologies or philosophies that guide the way students form attitudes and beliefs that in turn influence behavior (Chavous, 2005).

Time enrolled. Student self-reports were used to measure the number of semesters students were enrolled at the community college. Responses were collapsed into two categories, students enrolled fewer than three terms and students enrolled more than three terms. The purpose of this moderator was to explore what changes might be occurring as a result of students' cumulative objective experiences with the college environment and to identify the psychosocial factors that could provide insight into the cooling out literature.

Participation in developmental education. Student self-reports were also used to determine whether students had enrolled in developmental coursework. Responses were collapsed into two categories, students who reported ever enrolling in developmental education courses and those who did not report enrollment in a developmental education course. Enrollment in developmental education was selected as a moderator because it reflects a particular type of experience and the type of changes in attitudes and beliefs related to transfer that occur for students who report taking such classes.

Perceived Transfer Climate. The Climate for Transfer Module (CTM) of the Diverse Learning Environments (DLE) Survey (Hurtado, Cuellar, & Guillermo-Wann, 2011) assesses perceived transfer climate by asking students about practices at two-year institutions regarding the transfer pathway and climate of support (Ruiz & Pryor, 2012). Responses were measured on a 4-point strongly agree-strongly disagree scale. The CTM is typically used to measure institutional transfer climate which requires individual student perceptions at a particular campus to be aggregated and act as a sociological measure. However, the present study, which is interested in psychological influences on transfer intentions, maintains the conceptualization of

perceived transfer climate at the individual level. Though related, institutional transfer climate and perceived transfer climate are not only measured distinctly, but operate at different levels (institutional versus individual). Questions from the CTM were utilized for this study to measure students' perceptions of community college programs and services that could hinder or aid in efforts to transfer to a four-year college or university.

Analytic Strategy

A combination of descriptive and multivariate analytic techniques was used to address each of the research questions. Although multiple linear regression is commonly used to model the TRA and the TPB, structural equation modeling (SEM) was the main analytic technique used for this study (Savalei & Bentler, 2006). Structural equation modeling offers a researcher more appropriate techniques to utilize empirical data (i.e., covariance matrix) to test the assumptions of a theoretical framework (Byrne, 2011; Hankins, French, & Horne, 2000). In particular, SEM is an improvement over traditional regression techniques because it can be used to both determine how well latent, unobserved constructs, are measured and the extent to which the latent constructs relate to each other (Lei & Wu, 2007; van den Putte & Hoogstraten, 1997). The method also allows a researcher to assess and correct for measurement error, providing explicit estimates of error variance parameters (Byrne, 2011). Structural equation modeling is suitable for the present study because a primary aim is to determine whether and how the constructs defined by the TPB operate when applied to a sample of community college students to understand better the educational goal of upward transfer.

There are two primary building blocks of structural equation modeling. The first component, the measurement model, is intended to estimate how, and to what extent, observed variable indicators (e.g., survey items) are linked to an underlying latent construct (e.g., transfer

intentions) (Byrne, 2011). A measurement model provides an estimate of the extent to which observed responses to survey items are “caused” or generated by the underlying latent construct. In the SEM framework, confirmatory factor analysis (CFA) is used to determine the relationships between observed variables and latent constructs. The second component, the structural model, is intended to estimate relationships among latent constructs using the covariance matrix. The structural model provides an estimate of the regression structure (e.g., structural path coefficients) between latent constructs and allows a researcher to hypothesize the impact of one latent construct on another. A structural model is often referred to as a full model because it includes both the measurement model and structural model when depicted for publications.

Utilization of SEM in the classical sense requires that a researcher take a confirmatory (i.e., hypothesis-testing) approach to the analysis of some theory that attempts to explain a phenomenon. Another advantage of SEM over other regression techniques is that the method allows a researcher to estimate hypothesized direct, indirect, and total effects (or path relationships) between constructs in a given model. Finally, SEM provides techniques that allow a researcher to test for moderation, or make group comparisons, of hypothesized effects (Acock, 2013; Byrne, 2011).

Analytic Phases

Several analytic phases were employed to better understand the theory-driven framework used to examine community college students’ intentions to transfer to a four-year college or university. All analyses were conducted using STATA 12.

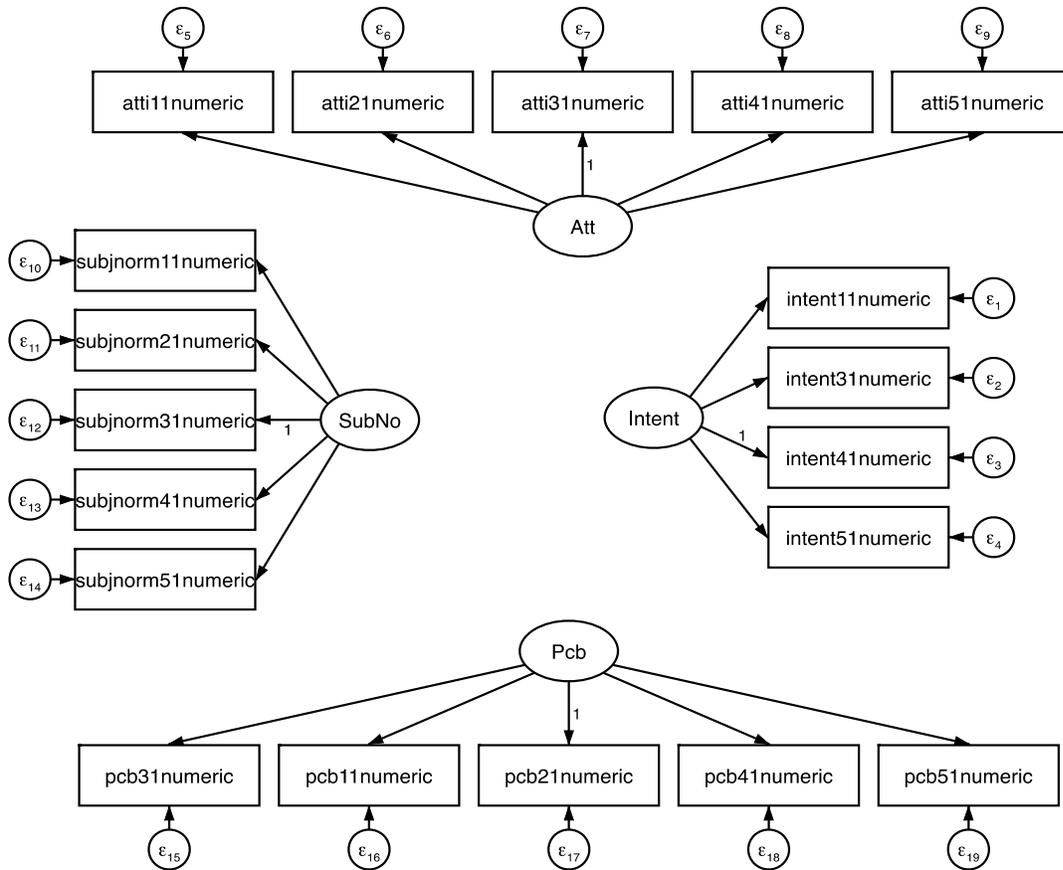
Phase One: Psychometric Analysis & Multigroup Invariance Analysis. The first analytic phase included the use of exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to test the theory-driven relationships between the observed variable indicators

and their respective underlying latent constructs. Although not a necessary step in the SEM framework, principal component EFA was applied to the remaining half of non-study sample data (i.e., non-Black and Latino students sampled) to explore the various type of validity (i.e., content, discriminant, and convergent) of the latent constructs. In addition, EFA provided preliminary evidence that the constructs operated as hypothesized with a sample of community college students. Eigenvalues were utilized to identify distinct factors and the reliability of the constructs was assessed based on Cronbach's alpha statistic (B. Thompson, 2004). The use of EFA allowed for the identification of a more refined set of observed variable indicators for each latent construct based on factor analysis results.

The next step involved the use of confirmatory factor analysis (CFA) or measurement model with the study sample (i.e., Black and Latino community college students) to validate the hypothesized latent constructs. One advantage of using CFA over EFA is the ability to evaluate the factorial structures based on goodness-of-fit indices to determine how well each model fits the data (see below for more information). Another advantage is the ability to generate unstandardized and standardized measurement coefficients (factor loadings), standard errors for each coefficient estimate, and a z test with a confidence interval for each coefficient estimate. A final advantage is the use of the ρ ("rho") statistic to assess construct reliability which provides more accurate estimates than the Cronbach's alpha statistic (Acock, 2013; Savalei & Bentler, 2006). Acceptable ρ scores should be higher than .70 for satisfactory construct reliability. The hypothesized measurement component for this study is depicted in Figure 4.1. The observed surveys items are shown in rectangles, each of the four latent TPB constructs in ellipses, measurement errors in circles, and arrows show the direction of the effects. Recall, the measurement model is intended to measure the extent to which the underlying latent construct

“caused” the students’ responses to the particular survey items. The arrows extending from the latent construct to the each of the observed survey items illustrate this relationship.

Figure 4.1. Hypothesized TPB measurement component.



Another goal of this analytic phase was to determine whether the latent constructs had “the same or very similar meanings for each [sub]group of interest” before comparing the structural models (Acock, 2013, p. 211). The conventional procedures for testing multigroup invariance were proposed by Jöreskog (1971). According to Jöreskog, the first step when testing

for factorial invariance (or equivalence of factor loadings) requires that the researcher fit separate baseline models for each subgroup of interest, often referred to as a two-group comparison model. Once the baseline models for each group were established, a configural model, which was a pooled (or multigroup) representation of the baseline models, was established (Byrne, 2011, p. 206). The configural model allows estimates for each group to vary freely. The fit of the configural model provides the baseline value against which the subsequent model, that included a test for equivalence of factor loadings, was compared. In order to test for factorial invariance, factor loadings across the subgroups of interest were constrained statistically to be equal, establishing the invariant loading model (Acock, 2013).

A likelihood-ratio test (chi-square difference test) was used to compare the invariant loading model, the model with the factor loading constraint, and the configural model, the model with no equality constraints. Given the nesting of the invariant loading model in the configural model, when the likelihood-ratio test comparing the two models is not significant ($p \leq 0.5$), there was statistical evidence of measurement invariance (Acock, 2013). In other words, the invariant loading model is preferred because it does not fit the data significantly worse than the configural model (i.e., the model with separate estimates for each group). As such, it was possible to assert that there was not a statistically significant difference between the subgroups in the meaning of a particular latent construct given the observed indicator variables (i.e., equivalent factor loadings). If the measurement model showed factorial invariance for each of the subgroups, all of the necessary paths were constrained to be equal (Acock, 2013). Without evidence of factorial invariance, it is preferable to fit separate structural models in order to reflect the distinct factor loadings for each group (Acock, 2013; Byrne, 2011).

Evaluation of Model Fit

The evaluation of model fit for the CFA and full structural models (discussed below) used for this study were based on conventional goodness-of-fit indices that provided various perspectives with regard to whether the theoretical model adequately fit the sample data (Crockett, 2012). While there is no agreement on the “best” indices for evaluating model fit, Kline (2005) recommends the use of the chi-square test (χ^2), the root mean squared error of approximation (RMSEA), and comparative fit index (CFI) as essential measures of fit. The χ^2 statistic is reported in most publications, but is sensitive to sample size, and often disregarded when used with samples over 200 (Crockett, 2012). The RMSEA statistic compares the model proposed by a researcher (theoretical model) and the model observed with the sample data, and makes adjustments for model complexity (e.g., added factor loadings). An acceptable range for the RMSEA is ≤ 0.05 for a good fit and ≤ 0.08 for a reasonably close fit, with smaller values indicating better fit (Acock, 2013; Crockett, 2012; Hu & Bentler, 1999). Others (MacCallum, Browne, & Sugawara, 1996) have used 0.01, 0.05, and 0.08 to indicate excellent, good, and mediocre fit, respectively. The CFI statistic compares the theorized model with a baseline model that assumes there is no relationship among the exogenous and endogenous variables in the model (Acock, 2013). The fit index for the CFI ranges from 0 to 1; a 0.90 cutoff value for the CFI is often used, but 0.95 is becoming more widely used (Acock, 2013; Crockett, 2012).

There were also times when it was interesting or necessary to compare alternate or nested models. In addition to comparing improvement of the goodness-of-fit indices (e.g., χ^2 , RMSEA, CFI), it is useful to compare a likelihood-ratio test that tests the difference in chi-square statistics for nested models. The Akaike’s information criterion (AIC) and Bayesian information criterion (BIC) have also been offered to compare models with the same set of variables but are not nested

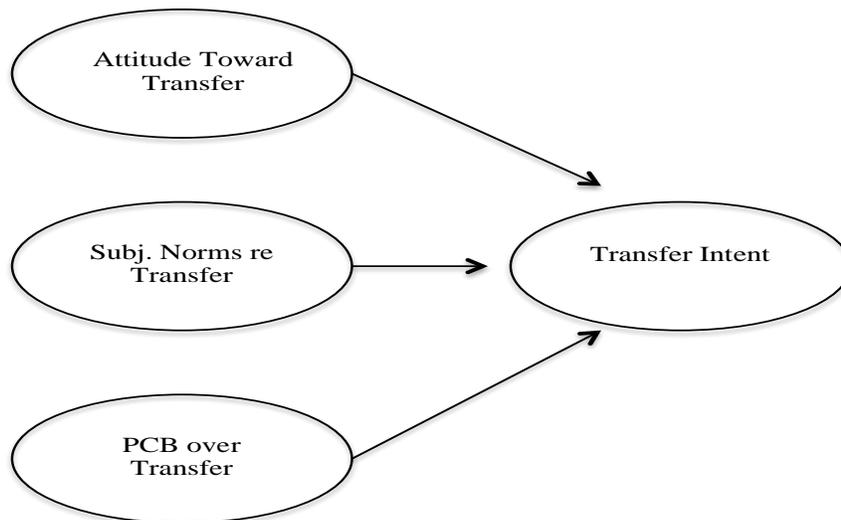
in one another. Both indicate how well a model would be expected to fit sample data drawn from the same population; the model with the smaller AIC and BIC criterion is preferred.

Phase Two: Descriptive Statistics and Missing Data Handling. The second analytic phase involved data screening necessary to prepare the data for multivariate modeling. At the most basic level, this included descriptive exploration of the raw data, including graphic display of item distribution. Data were screened for univariate, bivariate, and multivariate normality using the `mvtest` normality command in STATA; these tests checked for skew, kurtosis, and outliers (STATA Corp). In addition, descriptive statistics and correlations among the constructs of interest were examined.

Another important consideration during this first analytic phase included examination of missing values and patterns of missing values to determine appropriate data replacement procedures. The default approach to dealing with missing values is listwise deletion, which assumes that values in the data are missing completely at random (MCAR). The MCAR assumption, however, is rarely met in situations other than random assignment (Acock, 2013, p. 81). Instead, other methodologists and SEM researchers support the assumption that missing values are missing at random (MAR) which requires the use of maximum likelihood with missing values procedures (e.g., `mlmv` command in STATA) (Crockett, 2012; Kline, 2005). This approach assumes that other variables in the model can be used to explain who answers and who does not answer the items in the dataset. Techniques such as the maximum likelihood (ML) method are typically used to deal with data replacement. For this study, the `mlmv` estimator in STATA used ML statistics to calculate mean and covariance matrix estimate values from all available data that were used in subsequent fitted statistical models.

Phase Three: Structural Modeling and Model Modification Indices. Based on the results of the analysis in Phase One, the goal of the third analytic phase was to compare the fit of the predicted theory of reasoned action and theory of planned behavior to the observed covariance matrices separately for the Black and Latino subgroups. Once this was determined, another goal was to identify the best fit of the model to the data and to assess the direct effects between the attitudinal constructs and transfer intentions. Within the framework of SEM, the TRA and TPB models were compared based on conventional model comparison techniques (discussed above). Unstandardized and standardized effect sizes were reviewed at the conclusion of the model fitting procedures. The hypothesized baseline structural model for this study is depicted in Figure 4.2. Each of the four latent TPB constructs are shown in ellipses and the arrows indicate the direction of the relationships that were tested between the attitudinal constructs and transfer intentions.

Figure 4.2. Hypothesized structural model of transfer intentions.



Model Modification

When a theorized measurement or structural model was not a good fit to the sample data, the use of modification indices (MIs) were considered to examine possible changes to the model that would improve overall fit. The MIs indicate what modification(s) to the model would significantly improve the fit of the model by reducing the chi-squared statistic (Acock, 2013, p. 26; Crockett, 2012, p. 22). According to Acock (2013), the best practice is to consider the addition of one path at a time. Since the goal of SEM is to test an a priori theoretical model, it is important to acknowledge the use of MIs and to only make changes if two conditions are met: (1) the modification index is substantial and (2) the change can be justified theoretically (Acock, 2013). Common modifications include the addition of a covariance path between sets of observed indicator variables or latent constructs; adding such covariances makes sense theoretically if the item(s) are worded similarly or attempt to tap the same aspect of a latent construct.

Phase Four: Subgroup (Moderation) Analysis. The goal of the fourth analytic phase was to detect subgroup differences on latent constructs and estimate moderation effects across several policy-relevant collegiate experiences. Structural means modeling (SMM) was employed to examine initial differences among groups on latent constructs central to the present study (Acock, 2013; Crockett, 2012; Dimitrov, 2006). For this study, SMM provided initial insight into whether the two subgroups of interest reported statistically significant different levels of attitudes, subjective norms, perceived behavioral control, and transfer intentions. The process of estimating means on latent constructs required fixing the means of the latent constructs for one group at zero; this group served as the reference group for subsequent comparisons. Next, the means for the other group(s) were estimated; if the means for this group were significant, the

conclusion was that the two groups differed on the particular latent constructs (Acock, 2013; Crockett, 2012; Dimitrov, 2006). SMM was utilized in conjunction with traditional t-tests which provided the ability to report estimates of construct means and account for measurement error and factorial invariance across groups (Acock, 2013).

Following the t-test and SMM, the goal was to examine whether the relationships between the constructs differed across various subgroups. In general, there are two ways to fit structural models in order to estimate moderating effects. One way is to test for structural invariance (or equivalence of the path coefficients between latent constructs). A noteworthy assumption for this approach is that the factor loadings of the latent constructs being modeled are equal across groups (measurement invariance); this was tested for during Phase Two of this study. The procedures for testing for structural invariance were analogous to the procedures used to test for measurement invariance. In short, a baseline model was established which pooled both groups together; this model included no constraints on the structural path coefficients across groups. The baseline model was compared to the subsequent model(s) with constraints placed on the structural path coefficient(s) of interest; paths can be constrained one-by-one or simultaneously and compared, depending on the statistical software package used. If the likelihood-ratio test indicates that the models are significantly different, one can infer that the structural path coefficient(s) of interest exert a moderating effect on the relationship between the latent constructs and that the effect varies by group (Acock, 2013). Another approach used when measurement models indicate factorial variance across subgroups is to fit separate models for each subgroup or sets of subgroups. The approach requires that differences in relative standardized effect sizes and significance levels be examined to detect moderation (Acock,

2013). Evaluation of model fit for structural models was explained under Phase Two in the section “Evaluation of Model Fit.”

Phase Five: Creation of Belief-Based Measures. The goal of the fifth and final analytic phase was to assess and score belief strength and evaluation for each of the belief-based measures. In general, if measured correctly, the belief-based measures can be used to provide a deeper understanding of what contributed to the formation of each of the direct measures of attitudes, subjective norms, and perceived behavioral control. The basic logic and assumptions of expectancy-value models was discussed in Chapter Three and will only be discussed briefly here in order to explicate how each of the belief-based indices was created.

With regard to attitudes, the expectancy-value estimator is described symbolically in Eq. (1) where A_B stands for attitude toward behavior B (transfer); b_i is the behavioral belief (subjective probability) that transferring will lead to outcome i ; e_i is the evaluation of outcome i ; and the sum is over the number of behavioral beliefs accessible at the time (Ajzen, 2005). The result was a belief-based measure of attitude.

$$A_B \propto \sum b_i e_i \quad (1)$$

In a similar fashion, the expectancy-value estimator for subjective norms is described symbolically in Eq. (2) where SN is the subjective norm; n_i is the normative belief concerning referent i ; m_i is the student’s motivation to comply with referent i ; and the sum is over the number of accessible normative beliefs. The result was a belief-based measure of subjective norm.

$$SN \propto \sum n_i m_i \quad (2)$$

Finally, the belief-based estimator of perceived behavioral control is described symbolically in Eq. (3) where PBC is perceived behavioral control; c_i is the control belief that a

given factor i will be present; p_i is the power of factor i to facilitate or inhibit performance of transfer; and the sum is over the number of accessible control beliefs. The result was a belief-based measure of perceived behavioral control.

$$PBC \propto \sum c_i p_i \quad (3)$$

For each of the indices, optimal scaling analysis (Ajzen, 1991) was used to select either bipolar (e.g., 1 to 7) or unipolar scoring (e.g., -3 to +3) of responses to each set of belief statements. If the expectancy-value models specified in Eq. (1) – Eq. (3) are valid, the belief-based measures should correlate significantly with the respective direct measures, thereby providing insight into the factors that contributed to the psychological development of attitudes, subjective norms, and perceived behavioral control.

Chapter Four Summary

This chapter outlined the research questions that guided this study, discussed the selection of and characteristics of the research sites, and described the research design and data collection procedures including the measurement of the key measures. Also considered were the characteristics of the students sampled. Finally, the structural equation modeling was introduced as the primary analytic technique for the study.

Chapter Five: Results

The results of the data analysis are presented in this chapter. Findings are organized according to the analytic phases outlined in Chapter Four. Presentation of the findings according to the analysis phases allowed for a more fluid presentation of both preliminary analyses and findings that aligned specifically with each of the research questions. Overall, the data partially support the hypothesis that TPB accurately represents how students formed intention to transfer to a four-year college or university and that Black and Latino students would attribute comparable meaning to each of the constructs.

Phase 1 - Research Question 1

What aspects of the theory of planned behavior model (e.g., attitudes, subjective norms, perceived behavioral control) emerge as important for understanding and predicting community college students' intentions to transfer to a four-year college or university?

The basic question driving this phase of the data analysis was to determine, using psychometric techniques, whether and to what extent the measured variables (or observed indicators) reflect the underlying constructs hypothesized by the theory of reasoned action (TRA) and theory of planned behavior (TPB). In addition, the purpose was to examine whether Black and Latino students similarly conceptualized each of the constructs.

Exploratory Factor Analysis (EFA)

Although the TRA and TPB indicators and constructs have been used and validated with a variety of samples (Armitage & Conner, 2001), exploratory factor analysis (EFA) was applied to the remaining half of the non-study sample data to provide preliminary evidence that these constructs operate as hypothesized with a sample of community college students. In addition, EFA allowed for the identification of a more refined set of observed set of indicators for each of

the latent constructs. As anticipated, four factors emerged that represented the intent to transfer, attitudes toward transfer, subjective norms regarding transfer, and perceived behavioral control over transfer constructs (see Table 5.1).

Transfer Intentions

There were five indicator variables related to the first factor that represented the transfer intention concept. This factor explained 48% of the variance and the loadings ranged from .00 to .90. Two indicator variable loadings were below the a priori threshold of .50. The items asked respondents to indicate, on a 7-point evaluative semantic differential scale, whether they intended to transfer or whether they might transfer (reverse coded); the loadings were .00 and .37 respectively. However, only the indicator with the .00 loading was removed with model identification for the confirmatory factor analysis in mind. The refined factor explained 62% of the variance and the loadings ranged from .52 to .89. The internal consistency (Cronbach's Alpha) improved from .70 to .78 (see Table 5.2).

Table 5.1. Reliability coefficients of TPB factors

		Non-Study Sample (<i>n</i> = 887) (alpha)
	Factor 1: Transfer Intentions	($\alpha = 0.70$)
<i>Items</i>		
INTENT1	I expect to transfer to a four-year college or university within two years.	0.8091
INTENT2	I intend to transfer to a four-year college or university within two years.	0.0089
INTENT3	I will try to transfer to a four-year college or university within two years.	0.8973
INTENT4	I am determined to transfer to a four-year college or university within two years.	0.8946
INTENT5	I might not transfer to a four-year college or university within two years.	0.3774
	Factor 2: Attitude Toward Transfer	($\alpha = 0.82$)
ATTI1	For me, transferring to a four-year college or university within two years will be...[Bad - Good]	0.8271
ATTI2	For me, transferring to a four-year college or university within two years will be...[Useless - Useful]	0.8518
ATTI3	For me, transferring to a four-year college or university within two years will be...[Unimportant - Important]	0.8581
ATTI4	For me, transferring to a four-year college or university within two years will be...[Boring - Exciting]	0.8307
ATTI5	For me, transferring to a four-year college or university within two years will be...[Unsatisfying - Satisfying]	0.8592
ATTI6	For me, transferring to a four-year college or university within two years will be...[Difficult - Easy]	0.3239
	Factor 3: Subjective Norms Regarding Transfer	($\alpha = 0.82$)
SUBJNORM1	Most people who are important to me expect that I will transfer to a four-year college or university within two years [True - False]	0.778
SUBJNORM2	Most people who are important to me would be disappointed if I do not transfer to a four-year college or university within the next two years [Unlikely - Likely]	0.742
SUBJNORM3	Most people I admire and respect think I should transfer to a four-year college or university within two years [Disagree - Agree]	0.8015
SUBJNORM4	Most people like me will transfer to a four-year college or university within the next two years...[Likely - Unlikely]	0.761

SUBJNORM5	Most people like me want to transfer to a four-year college or university within the next two years...[True - False]	0.7625
SUBJNORM6	Most of the students I know at this college think transferring to a four-year college or university is a good idea...[Agree - Disagree]	0.497
	Factor 4: Perceived Behavioral Control	($\alpha = 0.62$)
PCB1	If I want to, I am confident that I can transfer to a four-year college or university within the next two years. [False - True]	0.8234
PCB2	If I want to, I can overcome any problems that could keep me from transferring to a four-year college or university within the next two years. [Disagree - Agree]	0.8576
PCB3	I have the ability to transfer to a four-year college or university within the next two years. [Disagree - Agree]	0.8521
PCB4	It is mostly up to me whether or not I transfer to a four-year college or university within the next two years...[Disagree - Agree]	0.8224
PCB5	I have complete control of whether or not I transfer to a four-year college or university within the next two years...[True - False]	0.8182
PCB6	Something or something will keep me from transferring to a four-year college or university within the next two years... [Unlikely - Likely]	-0.5332

Notes: extraction method - principal-component factor; rotation method - varimax

Attitudes

The second factor included six items that represented the conceptual dimensions associated with attitudes toward transfer. This factor explained 61% of the variance and the loadings ranged from .32 to .86 (see Table 5.1). After the initial EFA, the reverse-coded indicator assessed whether respondents thought transferring would be difficult or easy (.32). The refined factor explained 72% of the variance and the loadings of the remaining indicators ranged from .82 to .87. The Cronbach's alpha also improved from .82 to .90, suggesting a higher level of internal consistency among the five remaining indicators (see Table 5.2). The loading of the items appropriately highlights that the observed indicators intended to tap the instrumental and experiential dimensions of the factor contribute rather evenly.

Subjective Norms

Six observed indicator variables were included to represent the third factor, assumed to measure the two dimensions (i.e., injunctive and descriptive) that reflected respondents' subjective norms regarding transfer. As expected, this factor explained 53% of the variance and loadings ranged from .50 to .80 (see Table 5.1). The estimate of internal reliability (i.e., Cronbach's Alpha) for the initial six items was .82. Although the internal consistency was acceptable, one the reverse-coded indicator variables was removed because the loading was below the a priori loading threshold of .50. The indicator asked respondents to assess whether most students they knew at the college thought transfer was a good idea. The refined factor explained 61% of the variance, the loadings of the indicators ranged from .74 to .82., and the Cronbach Alpha improved slightly to .83 (see Table 5.2).

Table 5.2. Refined reliability coefficients of TPB factors

	Non-Study Sample (n = 887) (alpha)
Factor 1: Transfer Intentions	($\alpha = 0.78$)
INTENT1	0.8273
INTENT3	0.8696
INTENT4	0.8865
INTENT5	0.5197
Factor 2: Attitude Toward Transfer	($\alpha = 0.90$)
ATTI1	0.8213
ATTI2	0.854
ATTI3	0.859
ATTI4	0.8374
ATTI5	0.8692
Factor 3: Subjective Norms Regarding Transfer	($\alpha = 0.83$)
SUBJNORM1	0.7979
SUBJNORM2	0.7687
SUBJNORM3	0.8211
SUBJNORM4	0.7638
SUBJNORM5	0.7476
Factor 4: Perceived Behavioral Control	($\alpha = 0.90$)
PCB1	0.8376
PCB2	0.8635
PCB3	0.8618
PCB4	0.8227
PCB5	0.818

Perceived Behavioral Control

Among the remaining items, six indicators represented the fourth factor that conceptually aligned with the perceived behavioral control. This factor explained 63% of the variance and loadings ranged from -.53 to .86; the original six indicators had a low internal consistency estimate (i.e., Cronbach's Alpha) of .62 (see Table 5.1). As with the attitude and subjective norm factors, the reverse-coded item was removed due to a low factor loading. The item asked respondents how likely someone or something would keep them from transferring. In addition to the low loading, after the item was coded so that a response implied a higher sense of perceived behavioral control, it remained negatively loaded and inconsistent with the other items. The refined factor had a much higher Cronbach's Alpha (.90) and explained 71% of the variance. The new loadings ranged from .82 to .86 (see Table 5.2). Interestingly, and unlike the previous two factors, the items representing one dimension (capacity) loaded higher than the other dimension (autonomy).

The EFA provided initial evidence of factorial validity for each of the major TPB constructs, but the approach lacks the ability to estimate measurement error, which improves confidence in the measured constructs. EFA is also limited in its ability to accurately test for differences between groups (B. Thompson, 2004).

Preliminary analysis for confirmatory factor analysis (CFA)

Utilizing the extracted factors from the non-study sample EFA, summary statistics were examined with the study sample (i.e., Black and Latino students) (see Table 5.3). In addition, separate measurement models (i.e., confirmatory factor analysis) were constructed for the Black and Latino samples. This process allowed for further validation of the latent constructs with the

study sample and the opportunity to test (confirm) the generality of the extracted factors from the EFA.

Table 5.3. Means and standard deviation of indicator variables for each factor by sample of interest

Factors and Constructs	Study Sample			Black			Latino		
	<i>n</i>	mean	<i>SD</i>	<i>n</i>	mean	<i>SD</i>	<i>n</i>	mean	<i>SD</i>
Transfer Intention Measure									
INTENT1 (expectations)	985	5.580711	1.878373	154	5.87013	1.888047	831	5.527076	1.872805
INTENT3 (wants)	948	5.742616	1.852308	150	5.813333	1.957216	798	5.729323	1.832898
INTENT4 (plans)	921	5.785016	1.883981	146	5.828767	2.042175	775	5.776774	1.853965
INTENT5 (wants)	907	2.962514	2.02488	145	5.234483	2.137671	762	4.548556	1.950337
Attitude Toward Transfer									
<i>Instrumental</i>									
ATTI1	909	6.467547	1.063145	145	6.662069	0.7657666	831	5.527076	1.872805
ATTI2	909	6.477448	1.058211	144	6.555556	1.06946	825	5.281212	2.12725
ATTI3	908	6.415198	1.056544	144	6.479167	1.050932	798	5.729323	1.832898
<i>Experiential</i>									
ATTI4	909	6.477448	0.9507635	143	6.524476	0.9555779	775	5.776774	1.853965
ATTI5	904	6.526549	0.9432178	145	6.517241	0.9937544	762	4.548556	1.950337
Subjective Norms Regarding Transfer									
<i>Injunctive</i>									
SUBJNORM1	889	5.545557	1.816592	140	5.914286	1.698436	749	5.476636	1.830681
SUBJNORM2	895	4.916201	2.084543	142	4.922535	2.250529	753	4.915007	2.053332
SUBJNORM3	892	5.76009	1.590043	141	6.092199	1.367483	751	5.697736	1.621681
<i>Descriptive</i>									
SUBJNORM4	888	5.368243	1.604877	140	5.792857	1.570852	748	5.28877	1.59971
SUBJNORM5	888	5.885135	1.309183	142	5.929577	1.417459	746	5.876676	1.288386
Perceived Behavioral Control									
<i>Capacity</i>									

PCB1	884	6.117647	1.34937	139	6.482014	1.144315	745	6.049664	1.374285
PCB2	884	5.947964	1.350981	138	6.355072	1.11264	746	5.872654	1.378114
PCB3	883	5.98188	1.349271	140	6.335714	1.029149	743	5.915209	1.391957
<i>Autonomy</i>									
PCB4	883	6.028313	1.413529	139	6.330935	1.105903	744	5.971774	1.457522
PCB5	883	5.750849	1.562452	138	6.181159	1.313798	745	5.671141	1.592333

In addition to fitting separate baseline measurement models, the Black and Latino samples' multigroup invariance testing procedures were executed in order to test whether the CFA loadings were equal (invariant) across the two samples. In accordance with standard modeling procedures, the model fit indices were compared prior to assessing the loadings returned from the CFA.

Configural & Invariant Measurement Model Fit Indices

The fit indices for the configural model were $\chi^2(140) = 480.619$, RMSEA = 0.050, and CFI = 0.966, whereas the fit indices for the invariant loading measurement model were $\chi^2(280) = 692.368$, RMSEA = 0.055, and CFI = 0.959. These results provide slight descriptive evidence of factorial variance. However, results from the likelihood-ratio test provided firm statistical data showing that some of the CFA loadings were not equal across the two samples. The results of the invariance test are reported in Table 5.4; significance levels for each of the distinct loadings are marked. These findings revealed that separate measurement and structural models would be preferred rather than fitting pooled models across the two groups (i.e., treating the loadings as equal).

Confirmatory Factor Analysis (CFA)

Transfer Intentions

Four items represented the tripartite construct of transfer intentions for both Black and Latino students; the loadings for the indicators ranged from .34 to .82 and .55 to .76 respectively. The α reliability for the intention construct was .78 and .77. For Black students, the strongest influence on the intention construct was the intention-as-plans indicator, while the strongest influence on the intention construct for Latino students was the intention-as-expectations indicator. Notably, the intention-as-wants indicators were the weakest contributors for the

Latino students, but were somewhat more influential in the prediction of the transfer intentions for the Black students. On the whole, this suggests that while both groups of students expressed motivation to transfer, the Black students' intentions may be less evaluative than the Latino students (Södurlund & Öhman, 2006).

Table 5.4. Measurement model item loading for TPB constructs, standardized values and invariance test

	Study Sample (n = 985)	Black (n =154)	Latino (n =831)	Coeff Invar Test
Factors and Constructs				
Transfer Intention				
INTENT1 (expectations)	0.76	0.76	0.76	invar
INTENT3 (wants)	0.67	0.77	0.65	invar
INTENT4 (plans)	0.74	0.82	0.73	invar
INTENT5 (wants)	0.52	0.34	0.55	p = .069
Attitude Toward Transfer				
<i>Instrumental</i>				
ATTI1	0.82	0.80	0.83	p = 0.00
ATTI2	0.81	0.83	0.81	invar
ATTI3	0.88	0.92	0.87	p = 0.02
<i>Experiential</i>				
ATTI4	0.73	0.76	0.73	invar
ATTI5	0.78	0.86	0.76	p = 0.00
Subjective Norms Regarding Transfer				
<i>Injunctive</i>				
SUBJNORM1	0.85	0.77	0.87	invar
SUBJNORM2	0.61	0.51	0.63	invar
SUBJNORM3	0.71	0.67	0.71	invar
<i>Descriptive</i>				
SUBJNORM4	0.61	0.66	0.59	invar
SUBJNORM5	0.58	0.71	0.56	p = 0.00

Perceived Behavioral Control

Capacity

PCB1	0.86	0.78	0.86	invar
PCB2	0.85	0.80	0.85	invar
PCB3	0.84	0.85	0.85	invar

Autonomy

PCB4	0.67	0.63	0.67	invar
PCB5	0.66	0.57	0.67	invar

Model Fit

Configural RMSEA: 0.050 CFI = 0.966 Q reliability =

Multigroup RMSEA: 0.055 CFI: 0.959 Q reliability =

Note: Loadings may differ from those in EFA table as the CFA model accounted for measurement error

Attitudes

Although the Black and Latino student conceptualized attitudes similarly (i.e., the same indicators), comparison of the loadings revealed a few important distinctions between the two groups (see Table 5.4). The indicator variable loadings for the Black students ranged from .76 to .92 and from .73 to .87 for the Latino students, which shows that the strength of the relationships between the indicator variables and the latent attitude construct was much stronger for the Black students than the Latino students. Indeed, the α reliability estimates of .92 and .90 suggested satisfactory internal consistency. More intriguing, however, was the comparison of the loadings for the indicators representing the instrumental and experiential dimensions of the attitude construct. The most striking difference was for an experiential indicator that asked students to consider whether transferring would be satisfying. For this indicator, the loading for Black students was .86 and the loading for Latino students was .76, which provided evidence that experiences perceived to be associated with transfer contributed more to the construct for Black students.

Subjective Norms

Despite the significant contribution of the five indicator variables to the subjective norm construct, Black and Latino students had considerably different loadings for the items across descriptive and injunctive dimensions (see Table 5.4). The indicator loadings ranged from .51 to .77 and .59 to .87 for Black students and Latino students respectively. The corresponding α reliabilities were .80 and .81. Closer examination of the loadings for the indicators associated with each of the construct dimensions highlighted important differences in how each of the subgroups conceptualized subjective norms. The Black students had higher loadings for all of the indicators associated with the descriptive dimension, whereas the Latino students had higher

loadings for all of the indicators associated with the injunctive dimension. In other words, for Black students, the primary source of social pressure to transfer was the perception of whether similar peers would transfer versus the perception that important referents thought the respondent should transfer for Latino students.

Perceived Behavioral Control

Similar to the two other TPB constructs, all five of the indicator variables predicted the perceived behavioral control construct for each of the subgroups. For the Black students the indicator loadings ranged .56 to .86 and from .67 to .86 for the Latino students (see Table 5.4). The corresponding α reliabilities were .85 and .89. There were, however, two notable divergences in loadings between the Black and Latino students. Relative to the Latino students, the contribution of the indicators associated with students' confidence in their ability to transfer and their belief that they had control of whether they ultimately would transfer contributed less to the prediction in the construct for Black students. Despite these slight differences, in general, the influence of the capacity dimension to students' perceived behavioral control was much stronger than the autonomy dimension for both subgroups.

Summary of Phase 1 Results

The empirical evidence presented above lends support to the utility of the reasoned action/planned behavior approach to understand transfer intentions. Consistent with the theory and hypotheses, the results of the EFA and CFA indicate that the attitude, subjective norm, and perceived behavioral control constructs are indeed multidimensional constructs that represent students' beliefs in relation to transfer intentions. There was also evidence that each of the constructs were valid and reliable for this sample of community college students. Importantly,

the test for measurement invariance highlighted differences in the formation of these attitudes and beliefs between Black and Latino students.

Phase 2 - Preliminary analysis for structural models

After each of the appropriate measurement models was identified for each subgroup, data screening procedures were used to examine the normality of the raw data and test the missing at random (MAR) assumption. All screening confirmed that the sample data were reasonably normally distributed in the population and that responses were missing at random. Next, summary statistics and covariance matrices were generated separately for the Black and Latino students (see Table 5.5 & Table 5.6).

Table 5.5. Attitude, subjective norms, perceived behavioral control and transfer intentions: Summary statistics (means, standard deviations, and correlations)

	Black Students (n = 154)					
	M	SD	A	SN	PBC	I
Attitude	6.550345	0.8470639	.			
Subjective Norm	5.729577	1.292685	▾ .63	.		
Perceived Behavioral Control	6.338929	0.9212532	▾ .42	▾ .45	.	
Transfer Intentions	5.680195	1.532316	▾ .58	▾ .52	▾ .35	.
	Latino Student (n = 831)					
	M	SD	A	SN	PBC	I
Attitude	6.456437	0.8657005	.			
Subjective Norm	5.447543	1.319856	▾ .46	.		
Perceived Behavioral Control	5.897552	1.210429	▾ .35	▾ .44	.	
Transfer Intentions	5.402828	1.486719	▾ .53	▾ .48	▾ .50	.

Note: All correlations significant at $p < .001$

Table 5.6. Transfer intentions as a function of racial group differences in attitude, subjective norm, perceived behavioral control: Summary statistics (means, standard deviations, and univariate F-test)

	Black Students (n = 154)		Latino Students (n = 831)		F-Test
	M	SD	M	SD	
Attitude	6.550345	0.8470639	6.456437	0.8657005	.
Subjective Norms	5.729577	1.292685	5.447543	1.319856	*
Perceived Behavioral Con	6.338929	0.9212532	5.897552	1.210429	***
Transfer Intentions	5.680195	1.532316	5.402828	1.486719	*

The findings presented in Table 5.5 and Table 5.6 show that both the Black and Latino students sampled had positive attitudes toward transfer, held favorable views about the potential outcomes associated with transfer, perceived moderately strong social pressure to transfer, and felt somewhat confident in their ability to transfer. As expected, based on prior research (NCES, 2003), on average, they also had fairly strong intentions to transfer to a four-year college or university. There were, however, some distinctions between the two groups of students. The most striking difference was that Black students reported much higher levels of perceived behavior control than their Latino peers. It seems they were relatively more likely to indicate that they had both the capacity and autonomy to transfer despite potential barriers or impediments. Other interesting differences were that Latino students reported slightly less social pressure to transfer and lower transfer intentions than Black students. Examination of the covariance matrices among the relevant constructs for each subgroup also reveals some interesting insight regarding the unique way in which Black and Latino students develop transfer intentions. With regard to transfer intentions, the relationship between attitudes and transfer intentions was strongest for the Black students, while the relationship between perceived behavioral control and transfer intentions was strongest for the Latino students. This implies

that the primary considerations relevant for the formation of transfer intentions differ in some important ways for the two groups of students.

Summary of Phase 2 Results

The descriptive and summary statistics presented above provided confirmation that the sample data reflect plausible normality in the population and, based on the covariance matrices, that the major constructs are significantly correlated as predicted by the theories of reasoned action and planned behavior. On the whole, this set of results suggests that the Black and Latino students sampled are motivated by slightly different considerations to transfer to a four-year college or university.

Phase 3 - Research Question 2

Do community college students' attitudes and beliefs explain intentions to transfer to a four-year college or university? If so, what is the strength of the relationships between predisposition factors and transfer intentions? Sub-question: Do the theory of reasoned action or theory of planned behavior constructs provide a superior explanation of community college students' transfer intentions?

One of the goals of this analytic phase was to examine whether the theory of reasoned action (TRA) or the theory of planned behavior (TRB) better explained transfer intentions for each subgroup. After determining which of the models was superior, another goal was to evaluate model fit and to examine how the theory-based attitudinal factors influenced Black and Latino community college students' intentions to transfer to a four-year college or university. The findings presented in this section complicate the hypothesis that the theory of planned behavior would be a more accurate model to explain transfer intentions than the theory of reasoned action.

TRA versus TPB, Model Fit, And Direct Effects

Prior to examining the relationships between the attitudinal factors and transfer intentions, models representing the TRA and the TPB were compared separately for the Black

and Latino subgroups to determine which model was a better fit to the data for each group. The process of comparing the models required first, fitting the model representing the TRA with the path from perceived behavioral control to transfer intentions set to zero, then refitting the structural model with the path from perceived behavioral control released to represent the TPB model. In Table 5.7, the comparative results of the same form base models are presented for each subgroup. Contrary to prior research (Ajzen, 2005), the model representing the theory of reasoned action appeared to be a better fit to the data than the model representing the theory of planned behavior for the Black students sampled. Neither the goodness-of-fit measures (i.e., RMSEA and CFI) nor the likelihood ratio test provided evidence that the difference between the two models warranted use of the model representing the theory of planned behavior. However, as expected, the marginal difference in the measures of the goodness-of-fit measures signified that the TPB model was an improvement over the TRA model for explaining Latino students' transfer intentions. The likelihood ratio chi-squared test also provided clear statistical evidence that the TPB model was a better fit to the data than the model representing the TRA.

Table 5.7. Comparison of base form TRA and TPB models. Fit indices and results of LR-Test between models by racial group

<p>TRA Black Fit Indices chi2 (150): 534.987 RMSEA: 0.129 CFI: 0.781</p>	<p>TRA Latino Fit Indices chi2 (150): 1468.978 RMSEA: 0.103 CFI: 0.842</p>
<p>TPB Black Fit Indices chi2 (149): 534.925 RMSEA: 0.130 CFI: 0.780</p>	<p>TPB Latino Fit Indices chi2(149): 1422.597 RMSEA: 0.101 CFI: 0.848</p>

LR-Test Results
chi2 diff: 1
df diff: 1
p = 0.80

LR-Test Results
chi2 diff: 46.38
df diff: 1
p = 0.00

Note: Based form fit indices differ from indices for full models

Following determination of whether the TRA or the TPB model was superior for explaining transfer intentions for each subgroup, full structural models were fit and adapted as theoretically appropriate based on modification indices. The results of the TRA model for the Black sample and the TPB model for the Latino sample are discussed below.

Black Sample

Structural Model – Predicting Intentions for Black Community College Students

A structural model was conducted to test the fit of the proposed theory of reasoned action model to this particular sample of Black community college students. Table 5.8 presents parameter estimates and significance levels, for the model. Based on the goodness-of-fit indices, there was a significant discrepancy between the predicted and obtained covariance structure, χ^2 (70): 104.210, $p < .001$, which suggests that even the TRA model is not the best representation of these students transfer intentions. In this case, a significant χ^2 statistic is somewhat unusual because of the modest sample size (MacCallum et al., 1996). The remaining fit indices, however, were within the conventional range: the root mean squared error of approximation (RMSEA) = .056 and comparative fit index (CFI) = .973.

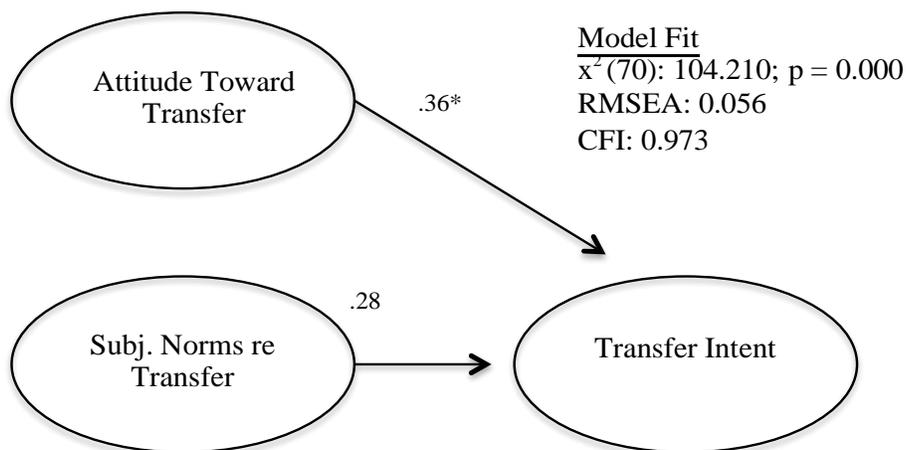
Table 5.8. Direct effects of TRA constructs on transfer students –Black students (n = 154)

	<i>b</i>	<i>B</i>	<i>R</i> ²
Attitudes	0.545*	0.363*	
Subjective Norms	0.422	0.287	
			0.385

* $p < .05$

As depicted in Figure 5.1 transfer intentions were positively influenced by students' attitudes toward transfer, though the association was only marginally significant ($p < .05$). The relationship between subjective norms and intentions was not significant. Although the fit indices revealed that the model was statistically acceptable and preferable to the alternate TPB model, the lack of predictive validity further suggests that the model does not appear to be a meaningful way to conceptualize Black community college students' motivation to transfer to a four-year college or university¹⁰.

Figure 5.1. Structural model of Black students' transfer intentions (TRA)



¹⁰ The lack of predictive validity cannot be attributed to inadequate power or sample size (MacCallum, Browne, & Sugawara, 1996).

Latino Sample

Structural Model – Predicting Intentions for Latino Community College Students

A second full structural model was estimated to test the fit of the proposed theory of planned behavior model for the sample of Latino community college students. Unlike the model for Black students, this model was statistically appropriate and appeared to represent a meaningful conceptualization of Latino students' transfer intentions (see Table 5.9). Evaluation of model fit was more than adequate: the root mean squared error of approximation (RMSEA) = .046 and comparative fit index (CFI) = .972. Although the chi-square difference test returned a significant estimate (i.e., χ^2 [138]: 375.587, $p < .001$), this was expected, given the larger sample size (Crockett, 2012). The final model, which included attitudes, subjective norms, and perceived behavioral control accounted for 58% of the variance in transfer intentions.

Table 5.9. Direct effects of TPB constructs on transfer intentions – Latino students (n=831)

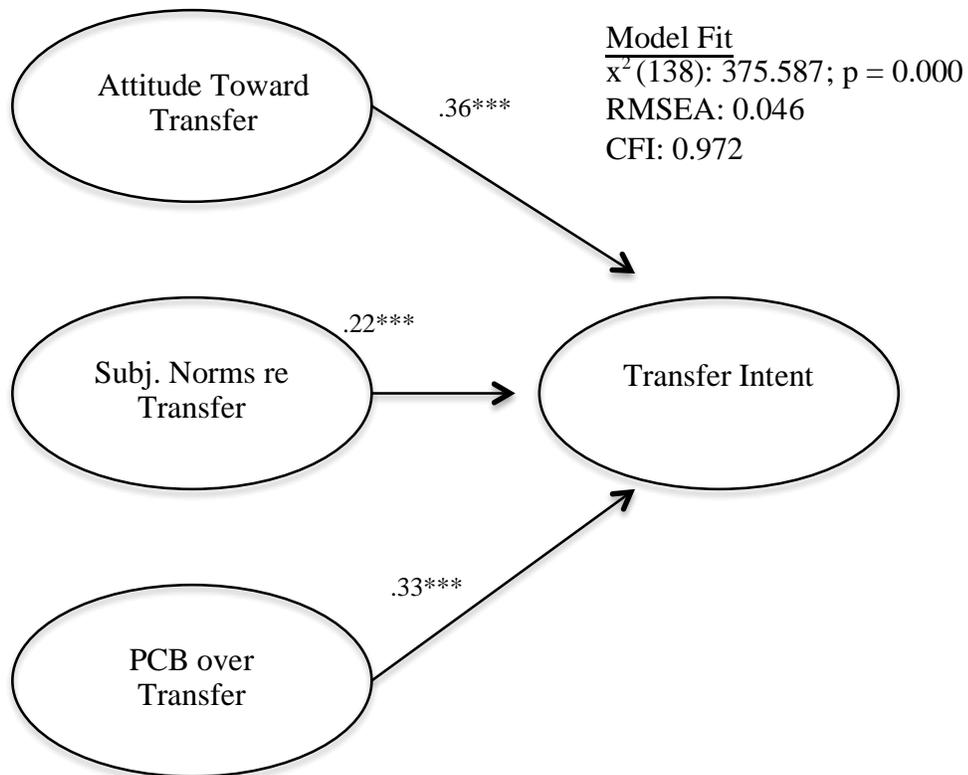
	<i>b</i>	<i>B</i>	<i>R</i> ²
Attitudes	0.555***	0.356***	
Subjective Norms	0.296***	0.233***	
Perceived Behavioral Control	0.394***	0.328***	
			0.58

*** $p < .001$

Figure 5.2 illustrates the relationships between the TPB constructs and Latino students' transfer intentions. Attitudes, subjective norms, and perceived behavioral control each had positive, moderately strong effects on transfer intentions. The strongest relationship was between attitudes toward transfer and transfer intentions, which suggest that students' evaluations of the potential outcomes associated with upward transfer, are quite motivating. By conventional standards, this relationship was moderately strong though highly significant. The

remaining relationships for perceived behavioral control and subjective norms and motivations to transfer were modest in strength but also very significant. As hypothesized by Ajzen (2005), the predictive validity of the theory was confirmed, as was the relative importance of each of the constructs in relation to intentions.

Figure 5.2. Structural model of Latino students' transfer intentions (TPB)



Summary of Phase 3 Results

The analysis conducted for Phase 3 support the idea that the measurement and examination of attitudes, subjective norms, and perceived behavioral control can improve our understanding of transfer intentions. The structural models also showed that motivation to

transfer was predicted significantly from the hypothesized attitudes and beliefs held by students. It was also evident that the applicability of the TRA or TPB models was not the same for Black and Latino students. Inconsistent with the theoretical propositions, neither the TRA or TPB frameworks provided a meaningful way to conceptualize and predict Black students' intentions to transfer. Future research should explore additional psychosocial factors that might influence these students' intentions to transfer. For Latino students, however, the TPB model did show that attitudes, subjective norms, and perceived behavioral control significantly influence transfer intentions, and that the relative contribution of each provide additional insight into the underlying process related to the formation of transfer intentions.

Phase 4 - Research Question 3

Do policy-relevant collegiate experiences (e.g., enrollment in development coursework, time enrolled, and perceptions of institutional transfer climate) moderate the relationships between the students' attitudes and beliefs and intentions to transfer to a four-year college or university?

The purpose of this phase was to provide insight into whether the relationships between the attitudinal factors and transfer intentions differed across the three types collegiate experiences. Informed by the lack of predictive validity of the proposed theory for the Black sample, the findings here only highlight moderation for the Latino sample. Again, the hypothesis driving the selection of the groups, defined by collegiate experiences, was that as a result of certain experiences, students would hold more or less favorable attitudes and beliefs related to transfer. According to Ajzen (2012a, 2012b), these changes are predicted to have very real consequences for students' intentions to transfer, and though not examined here explicitly, ultimately influence (and might explain) differences in transfer rates frequently considered in the existing transfer literature.

Table 5.10. TPB constructs as a function of enrollment length, developmental education participation, and perceived transfer climate differences: Summary statistics (means, standard deviations, and univariate F-Tests)

	Students Enrolled 3 Terms of Less (<i>n</i>= 442)		Students Enrolled More Than 3 Terms (<i>n</i>= 389)		Group Comparison
	M	SD	M	SD	
Attitude	6.459	0.813	6.456	0.923	ns
Subjective Norms	5.408	1.355	5.495	1.278	ns
Perceived Behavioral Control	5.831	1.231	5.976	1.184	ns
Transfer Intent	5.359	1.475	5.459	1.453	ns
	Non-Developmental Ed Students (<i>n</i>= 459)		Developmental Ed Students (<i>n</i>= 314)		Group Comparison
	M	SD	M	SD	
Attitude	6.442	0.871	6.48	0.85	ns
Subjective Norms	5.367	1.379	5.575	1.208	**
Perceived Behavioral Control	5.846	1.266	5.988	1.119	ns
Transfer Intent	5.353	1.52	5.498	1.372	ns
	No/Low Perceived Transfer Climate (<i>n</i>= 426)		High Perceived Transfer Climate (<i>n</i>= 355)		Group Comparison
	M	SD	M	SD	
Attitude	6.407	0.848	6.519	0.882	*
Subjective Norms	5.292	1.356	5.637	1.251	***
Perceived Behavioral Control	5.769	1.218	6.054	1.185	***
Transfer Intent	5.331	1.469	5.494	1.456	ns

Mean Differences Across Policy-Relevant Collegiate Experiences

Between-group t-tests were utilized to explore mean differences for the TPB constructs across the policy-relevant collegiate experiences. The results are presented in Table 5.10 and show some interesting variation for each of the groups. Surprisingly, when compared to students who were enrolled fewer terms (i.e., < 3 terms) at a community college, students who were enrolled more semester, had similar attitudes toward transfer, similar social pressure to transfer, and perceived control over the activities associated with transfer. They also shared similar levels of intentions to transfer. When compared to students who reported no enrollment in developmental coursework, those students who had enrolled in one more development course perceived stronger social pressure to transfer. There were no significant differences between these two groups with regard to attitudes toward to transfer, perceived behavioral control, or intentions to transfer. As expected, students who perceived a more positive transfer climate on their campus were more likely to report more positive attitudes toward transfer, more social pressure to transfer, and had more confidence in their ability to transfer. Both groups, however, reported similar levels of intentions to transfer to a four-year college or university.

Moderating Models

Although the overall structure of the theory of planned behavior model was confirmed for the Latino sample, the slight mean differences discussed above suggest that various experiences, once enrolled at a community college, influence the formation of transfer intentions. As the theory of planned behavior assumes, students with more positive attitudes toward transfer and about the potential implications of transferring, more social pressure to transfer, and a higher perceived sense of self-efficacy about their ability to transfer had higher intentions to transfer to a four-year college or university (see Table 5.9). There were, however, several interesting

variations in the strength of these associations depending on the experience. Group comparison (moderation) models were used to examine whether and how the relationships between the attitude and belief constructs and transfer intentions differed across the policy-relevant collegiate experiences (see Table 5.11 for unstandardized and standardized direct effects).

In comparison to students enrolled at a community college for fewer semesters, the effect of the positive relationship between attitudes and intentions was stronger for students enrolled for more than three semesters. This was also true for the relationship between perceived behavioral control and intentions, but to a lesser extent. The positive effect of social pressure on transfer intentions was much stronger for the students who were newer community college students than for those who were enrolled for more semesters. Attitudes toward transfer had the greatest effect on transfer intentions, though the effect was moderate by conventional standards.

For students who enrolled in developmental education coursework, there was a modest positive relationship between attitudes and transfer intentions. This relationship was slightly stronger for students who reported no developmental education enrollment. In addition, the effect of subjective norms and perceived behavioral control on transfer intentions was slightly greater

Table 5.11. Direct effects of TPB constructs on transfer intentions. Multi-group comparison across policy-relevant collegiate experiences.

	Students Enrolled 3 Terms of Less (n = 442)			<i>R</i> ²	Students Enrolled More Than 3 Terms (n = 389)		
	<i>b</i>	<i>B</i>			<i>b</i>	<i>B</i>	<i>R</i> ²
Attitudes	0.526***	0.300***		0.640***	0.445***		
Subjective Norms	0.384**	0.312**		0.234**	0.194**		
Perceived Behavioral Control	0.357***	0.309***		0.409***	0.339***		
Model Fit			0.608			0.635	
	Non-Developmental Ed Students (n = 459)			<i>R</i> ²	Developmental Ed Students (n=314)		
	<i>b</i>	<i>B</i>			<i>b</i>	<i>B</i>	<i>R</i> ²
Attitudes	0.687***	0.408***		0.481***	0.318***		
Subjective Norms	0.263**	0.216**		0.385**	0.286**		
Perceived Behavioral Control	0.367***	0.310***		0.389***	0.321***		
Model Fit			0.614			0.574	
	No/Low Perceived Transfer Climate (n=426)			<i>R</i> ²	High Perceived Transfer Climate (n=355)		
	<i>b</i>	<i>B</i>			<i>b</i>	<i>B</i>	<i>R</i> ²
Attitudes	0.631***	0.360***		0.512***	0.329***		
Subjective Norms	0.230**	0.187**		0.498***	0.400***		
Perceived Behavioral Control	0.428***	0.356***		0.279**	0.237**		
Model Fit			0.58			0.647	

p values: **p<.01 ***p<.001

for students who enrolled in developmental education coursework. Perceived behavioral control contributed most significantly to transfer intentions, suggesting that the perceived ease or difficulty of transferring played a major role in the formation of transfer intentions, and that enrollment in developmental education course heightened the effect of the relationship.

There was also significant variation in the strength of relationships between the attitudes and belief constructs and transfer intentions contingent on students' perceptions of the campus' transfer climate. For students who held positive views of sources of information about transfer and services and programs associated with transfer (i.e., transfer climate), there was a weak relationship between attitudes and transfer intentions and a modest relationship between perceived behavioral control and transfer intention. Both of these effects were slightly stronger among students who held less positive views of transfer climate at the community college. The effect of social pressure to transfer was much greater for students who perceived a positive transfer climate.

Summary of Phase 4 Results

Analytic phase 4 focused on the role of collegiate experiences as moderators of students' beliefs and attitudes in relation to their educational ambitions. Specifically, the t-test and moderation structural model analyses sought to determine whether and how length of enrollment, participation in developmental education courses, and perceptions of the campus transfer climate influenced attitudes changed students' overall disposition to transfer. The results suggest that such experiences not only affect the extent to which students held beliefs in support of transfer intentions, but also showed that the effect those beliefs on transfer intentions are moderated by policy-relevant collegiate experiences. In other words, contextual factors – those that reflected institutional policy – had very real consequences on the formation of transfer intentions through

their effect on attitudes, subjective norms, and perceived behavioral control (Ajzen & Klobas, 2013).

Phase 5 - Research Question 4

What is the relationship between the direct measures of the planned behavior model (i.e., attitudes, social norms, and perceived behavior control) and the accessible behavioral, normative, and control beliefs?

The analysis above revealed that attitudes, subjective norms, and perceived behavioral control all influenced the transfer intentions of Latino community college students. Consistent with the planned behavior approach, these factors are influenced by underlying beliefs that indirectly influence transfer intentions (Fishbein & Ajzen, 2009). For the Latino students, recall that attitudes toward transfer were the most important factor related to transfer intentions, followed by perceived behavioral control, and then subjective norms (see Table 5.9). Thus, the purpose of this analytic phase was to examine salient behavioral, normative, and control beliefs in order to provide a more detailed picture of the relevant determinants of intentions to transfer to a four-year college or university (Fishbein & Ajzen, 2009). The appropriate expectancy-value estimator (see Methods chapter) was used to generate mean belief strength for the behavioral, normative, and control beliefs as well as correlation estimates with the direct measure of transfer intention.

Behavioral, Normative, and Control Beliefs

Table 5.12 shows the mean behavioral belief strength (likelihood ratings), outcome evaluations associated with transfer, and the correlation of the product of belief strength and outcome evaluation ($b \times e$) with transfer intention. The magnitude of the correlation is used as a measure of each belief's influence on transfer intentions (Fishbein & Ajzen, 2009). The students generally held positive views of the possible outcomes associated with transferring to a four-year college or university. The strongest effect on transfer intentions was related to beliefs about

transferring leading to a better job. For example, the stronger the belief that transfer would lead to a better job, the more likely students intended to transfer. In addition, students' beliefs that transfer would make them feel successful and good about themselves and result in them earning a baccalaureate degree were important factors associated with transfer intentions. These and the other outcomes were valued quite positively, suggesting that students believed that the potential outcomes would be beneficial or desirable. An interesting inconsistency was that students appeared uncertain that transferring would mean that they had to move away from home and leave family and friends, and their somewhat negative evaluation of moving away as a possible consequence of transferring to a four-year college or university (Gaitan, 2012). These findings confirmed earlier results and provided more evidence that students think deeply about the instrumentality of transferring to a four-year college or university (e.g., long-term educational and career goals) and less about the experiential aspects associated with successfully transferring.

Table 5.12. Mean behavioral belief strengths and outcome evaluation, and correlations of belief x evaluation product with intention to transfer (behavior).

	Belief strength (b)	Outcome evaluation (e)	Correlation <i>biei</i> with intention
<i>Transferring to a four-year college or university will...</i>	<i>M</i>	<i>M</i>	
cost me more money.	0.71	2.48	0.19***
lead to a better job.	2.76	2.57	0.39***
mean I have to move away from home and leave family/friends	-0.09	-0.21	0.08**
result in me getting a baccalaureate degree.	2.52	2.23	0.34***
be a complete waste of time.	-2.27	-2.55	0.30***
make me feel successful and good about myself.	2.73	2.64	0.38***
make my family and community proud.	2.58	2.61	0.28***
require hard work	2.45	2.76	0.26***

Notes: Behavioral belief strength and outcome evaluation scored -3 to +3

biei = behavioral belief x outcome evaluation.

p values: **p<.01 ***p<.001

There were a variety of sources of social pressure to transfer (see Table 5.13). Among the important referents, the influence of non-academic individuals (e.g., close friends and family members) was more pronounced than that of people typically assumed to be more intertwined with the students' academic experiences (e.g., academic counselors and faculty members). In other words, most of the social pressure to transfer came from individuals outside of the college. An important finding was that the referent perceived to be least supportive of the students' transfer intentions was their work supervisor, which highlights the potential tension between working while pursuing academic goals such as transfer (Crisp & Nora, 2010; Dougherty & Kienzl, 2006). Although close friends and family members were perceived to be important sources of social pressure to transfer, students were slightly less motivated to comply with these referents than academic counselors and faculty members. In fact, students had the strongest motivation to comply with academic counselors, indicating the central role counselor can play in relation to students intentions to transfer. One possible explanation for these findings is that close friends and family members are supportive of students' ambitions to transfer in general, but counselors and faculty members are viewed as more valuable sources of information and insight related to academic goals. In any event, it is apparent from these findings that there is a complex interplay between personal and academic referents that have important consequences for students' transfer intentions.

Table 5.13. Mean normative belief strength and motivation to comply, and correlations of belief x motivation product with intention to transfer (behavior)

<i>Normative Referent</i>	Belief strength (n) <i>M</i>	Motivation to comply (m) <i>M</i>	Correlation <i>nimi</i> with intention
Family members	5.86	4.19	0.29***
Faculty member/professors	5.65	4.23	0.22***
Academic counselors	5.69	4.48	0.18***
Close friends	5.87	3.95	0.28***
Work supervisor	5.22	3.76	0.24***
Classmates	5.57	3.71	0.24***

Notes: Normative belief strengths and motivation to comply scored from 1 to 7; *nimi* = normative belief x motivation to comply

p values: *** $p < .001$

With regard to barriers that might prevent students from transferring to a four-year college or university, it is evident from the magnitude of the *c x p* correlations with transfer intentions, that students have serious concerns and doubts about their capacity (i.e., academic self-efficacy) to carry out tasks necessary to successfully transfer (see Table 5.14). Transfer intentions were especially undermined among students who believed that they might not have the study skills to pass classes and among those who believed they would need to take remedial or developmental coursework. Perhaps the heavy reliance on placement exams at community colleges explains why students were uniquely aware of such academic deficiencies, which in turn discouraged them from intending to transfer to a four-year college or university (Bettinger & Long, 2005). Although less significant in terms of the magnitude of the negative influence on transfer intentions, students were keenly aware of their financial constraints which likely resulted in the strong belief that they would have to work while taking classes, both of which students believed would be significant barriers to their ambitions to transfer. Students were least

concerned with not feeling comfortable on campus because of their racial background or ethnicity, which is likely an artifact of the diversity reflected in the student bodies of many community colleges (Cohen & Brawer, 2008). Nonetheless, there was a modest negative relationship between students' belief that they would not feel comfortable because of race or ethnicity and transfer intentions, signifying that campus racial climate and sense of belonging remain important considerations in relation to Latino students' educational goals (Hurtado & Carter, 1997).

Table 5.14. Mean control belief strength and power of control factors, and correlations of belief x power product with intention to transfer (behavior)

<i>Control Beliefs</i>	Belief strength (c) <i>M</i>	Inhibiting power (p) <i>M</i>	Correlation <i>cipi</i> with intention
Take remedial/developmental classes	3.31	3.71	-0.21***
Work while taking classes	6.17	5.11	-0.13***
Might not have enough money	4.97	5.78	-0.12***
Might not have the study skills to pass classes	3.09	4.98	-0.25***
Have interest in things other than college	3.45	4.55	-0.17***
Classes needed not offered at good times	4.06	5.13	-0.16***
Not feeling comfortable because of race/ethnicity	2.11	2.79	-0.11***

Notes: Control belief and power scored 1 to 7
cipi = control belief x power
 p values: ***p<.001

Summary of Phase 5 Results

Based on the findings presented above, it seems that the more general dispositions (i.e., attitudes, subjective norms, and perceived behavioral control) do actually represent students' underlying attitudes and beliefs about upward transfer. Consistent with the theory, the creation of appropriate belief-based indices demonstrated that a variety of behavioral, normative, and control beliefs could not only be identified, but are also significantly correlated with attitudes,

subjective norms, and perceived behavioral control. The value of these findings is that we gain a better understanding of the important consideration and influences that, in this case, guided the influenced students to be interested in and motivated to transfer to a four-year college or university. In general, these findings are encouraging in that the concerns most salient to students interested in upward transfer can be impacted by policy levers.

Chapter Six: Conclusions & Discussion

The intent of this study was to demonstrate the utility of using a social psychological theory for understanding policy-relevant student outcomes. The major assumption underlying this work is that behavior is psychologically motivated (Bean & Eaton, 2000) and as a result, a complicated set of psychosocial factors can be conceptualized and utilized to understand relevant student behaviors such as upward transfer. The overarching goal of the study was to situate the findings presented in the previous chapter within the dominant, often sociological, approaches employed to understand community college students' transfer behavior. The purpose of this final chapter is to provide a brief summary of this inquiry, situate the findings in light of extant research on the topic, acknowledge some limitations of the study, and discuss implications for future research and institutional practice.

Summary of the present study

In Chapter One, it was noted that, at the start of each academic year in the United States, five million students begin their postsecondary education with the goal of using a community college as a stepping-stone to transfer and obtain a baccalaureate degree. However, after four to six years of tracking a given cohort, only 500,000 of these would-be transfer students find themselves on the campus of a four-year college or university. Further complicating this incongruence between students' stated goals and their transfer behavior, students of color are less likely than their White peers to transfer, despite reporting similar reasons for entering a community college. The inability of community college students of color to translate their

educational goals into reality spurred my interest in seeking additional explanations for these inequities.

The review of theoretical and empirical literature in Chapter Two and Chapter Three revealed that researchers tend to emphasize the relationship between objective factors and transfer behavior. Typical examples of these factors included: the role of student background characteristics, the influence of the institution on transfer behavior, and the effect of students' interactions with the institution on transfer behavior. The limitations of these approaches were acknowledged, with a particular focus on the lack of or insufficient psychosocial explanations that recognize the influence of students' cognitive (i.e., subjective) processes on pertinent outcomes such as upward transfer. The ensuing discussion of literature considered an expectancy-value model, the theory of planned behavior, as one approach to better understand the influence of psychosocial factors – attitudes, social norms, and perceived behavioral control – that can be used as a bridge to explicate findings from sociological models of upward transfer.

Key aspects of the research methods were discussed in Chapter Four. Discussed were the study design, research questions, data collection procedures, research sites, sample characteristics, survey instrument design and construct measurement, and the analytic approach. Briefly, conventions of survey research were utilized to collect data from students enrolled at six community colleges disbursed throughout the United States. The study sample included 985 Black and Latino students who responded to the survey administered during the winter 2013 term. Also included was a detailed description and operationalization of the primary latent constructs included on the survey instrument. Psychometric procedures and structural equation modeling (SEM) analytic techniques were used to explore each research question and test the hypothesized relationships.

Interpretation of Findings

The findings for each of the research questions were presented in Chapter Five accompanied with research question-specific summaries. On the whole, the results provided evidence that it is possible to examine key factors related to community college students' attitudes and beliefs as they related to upward transfer. Once these attitudes and beliefs were conceptualized, the findings corroborate evidence from prior research which suggest that a student who believes transfer will result in outcomes deemed positive, perceives support and pressure from significant others to transfer, and believes they have the requisite skills/knowledge to transfer will be more motivated and committed to the goal of transfer. Findings also showed that, once defined and measured, students' motivation to transfer – assessed as intent to transfer – can be moderated (influenced) by various collegiate experiences that reflect institutional policy. According to Bean (1982a), the fact that students who reported different collegiate experiences held diverse beliefs and attitudes related to transfer as well as varying levels of intent to transfer, demonstrates what he called the psychological results of interacting with a college. This is an important finding for college administrators interested in appealing to students in ways that will get them to act in support of the institutional mission as these types of outcomes of the college experience are typically overlooked (Astin, 1993). Finally, racial group differences emerged with regard to the conceptualization of the attitudinal constructs as well as in the utility of the TPB framework. Though not central to the research questions posed for this study, the role of race will be discussed later. The importance of offering a framework that enables researchers to understand the psychosocial factors related to community college students' intent to transfer is that this particular type of social cognitive construct is hypothesized to be the best predictor of actual transfer. The remainder of this section moves now from the

specific results to a more general discussion of the major findings in relation to existing literature on upward transfer.

An Emerging Integrated Psychosocial Model of Upward Transfer

The purpose of this section is to recommend an integrated psychosocial model of upward transfer, drawing from the various theoretical models discussed above and the empirical findings from the present study. There are many ways one could organize these ideas, but Astin's (1991) input-environment-outcome (I-E-O) model serves as a guiding framework for the development of the proposed conceptual model presented here. According to Astin, inputs (I) refer to individual characteristics that students bring to the institution as well institutional factors that characterize a college or university. Environment (E) refers to students' educational and non-educational experiences at the institution that are associated with various programs, policies, faculty, and peers. Outcomes (O) refer to the "talents" that the institution seeks to cultivate in the student, in this case, attitudes and beliefs that influence transfer intentions. By focusing on the change or growth in the student after being exposed to the environment, the model enables researchers, policy analysts, and practitioners to find the type of environmental conditions that may best facilitate the development of student talents.

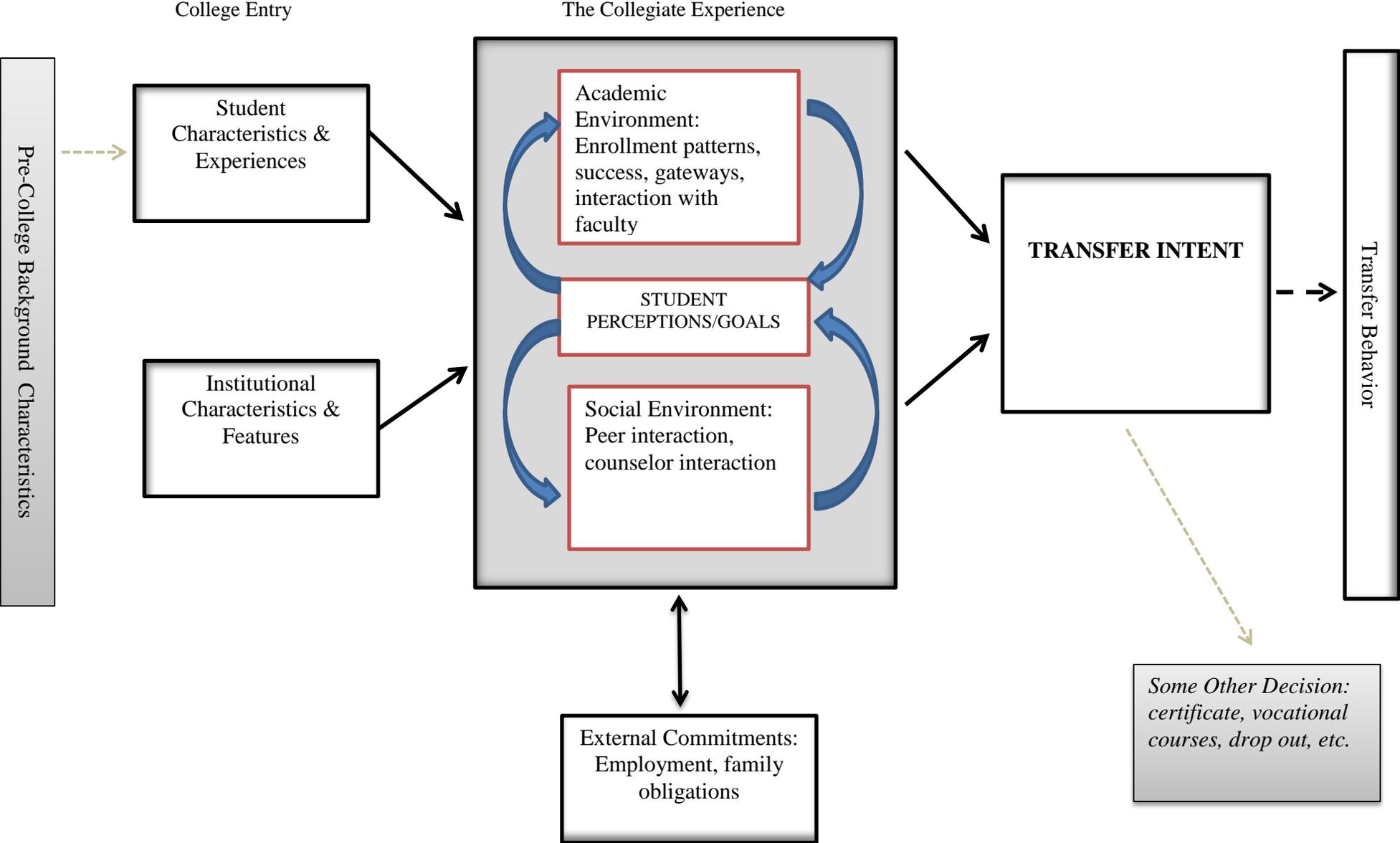
In a similar vein, the conceptual model present here assumes that: (a) students enter community college with a range of personal characteristics and prior experiences; (b) students encounter institutions with long-standing traditions, policies, structures, and programs that shape the college environment in important ways that impact students attitudes, beliefs, and outcomes; (c) students' backgrounds and previous experience impact their academic performance, involvement in and perceptions of the collegiate environment; and (d) as a result of academic, social, and external social interactions, students reassess their intentions to transfer as well as

other goals. Unlike the primarily sociological models, this model emphasizes the importance of the college environment on students' social psychological orientations toward transfer. This is in stark contrast to the research that indicates a direct impact of student background characteristics, institutional features and characteristics, and collegiate experiences on relevant outcomes, such as upward transfer, without consideration of how these students perceive or interpret these factors. The conceptual framework presented below (see Figure 6.1) integrates key theoretical themes from the models discussed above and empirical findings from the present study. Each component of the model is described below.

Inputs: Students Characteristics and Experiences

This portion of the framework represents student characteristics and experiences at the time of entry into a community college. As depicted by the shaded box, these entry characteristics and experiences are a result of students' pre-college background characteristics (prior to enrollment in postsecondary education). As was reviewed in Chapter Two, according to the theory of planned behavior (TPB), such background characteristics have the potential to influence individuals' behavioral, normative, and control beliefs that, in turn, influence intentions and eventual behavior. Although not central to this study, the evidence presented earlier indicated that racial background/ethnicity had some impact on students' attitudes and beliefs related to upward transfer (see RQ1 – Table 5.4). Specifically, the findings were that Black and

Figure 6.1. An Emerging Integrated Psychosocial Model of Upward Transfer



Latino students differed in some significant ways with regard to what motivates the students sampled to want to transfer (i.e., how they conceptualized the TPB constructs). Ajzen (2012b) and his colleagues claim that it is differences in such perceptions, given distinctive racial/ethnic experiences, that ultimately influence outcomes such as transfer, not the characteristics themselves. Nonetheless, the inclusion of these variables (see Table 6.1) in the model recognizes the important role played by ascribed and achieved student characteristics as well as prior experiences in relation to upward transfer (P. M. Blau & Duncan, 1967). By acknowledging these attributes, a key assumption of this model is that students enter community colleges with a range of social, familial, and academic experiences that have a powerful impact on subsequent collegiate experiences as well as attitudes and beliefs related to educational goals (Terenzini, 1987, p. 6).

Inputs: Institutional Characteristics and Features

The next component of the model is intended to convey the importance of institutional characteristics and features. Institutional-level variables (see Table 6.1) are significant because they reflect long-standing organizational behaviors, and in most cases, decisions made by administrators and other stakeholders that impact students (Weidman, 2006). This part of the model assumes that features and characteristics of community colleges affect educational outcomes because they produce environments that have real consequences for students' attitudes, social norms, and perceived behavioral control. Other researchers have also claimed that institutional-level variables are important because they reflect students' objective experiences of and with the institution (Bean, 1982a; Berger & Milem, 2000). This is particularly important for the characteristics under the control of the institution. For example, the amount and type of information students receive about transfer, the social norms within the institution regarding

transfer, and availability of programs and services that might reduce barriers to transfer, all can be manipulated by administrators and will have some influence on students' attitudes and behavior (Ajzen, 2005; Berger & Milem, 2000).

Together, student characteristics and experiences as well as institutional features and characteristics shape the collegiate experience students encounter once they enroll. This is depicted by the one-way arrows that extend from each of the respective boxes toward the box that represents the collegiate experience. At the institutional-level, the features and characteristics of a community college influence the nature and quality of the collegiate environment as well as the extent to which students can interact with the environment (e.g., programs and services offered or teaching styles). On the individual-level, the model suggests that students differ in important ways, such as academic preparation and their disposition (e.g., educational goals) regarding education, that will impact their experiences with, and perceptions of, the academic and social environments within the institution. In sum, these two portions of the model imply that the objective factors that receive much of the attention from researchers interested in upward transfer may be better understood in relationship to students' cognitive processes.

Environment: The Collegiate Experience

Perhaps the most important portion of the proposed framework is that which represents the collegiate experience. As is depicted in Figure 6.1, the collegiate experience is comprised of the academic environment and the social environment. In addition, external commitments are included in this part of the model because community college students typically remain embedded in, and connected to, their communities of origin while enrolled in postsecondary education (R. Deil-Amen, n.d.; Karp et al., 2010). The main assumption of this part of the

framework is that, through social interaction with the college structures and individuals within each of the environments, students “acquire the knowledge, skills, and value orientations” they will use for future attitudes and decision making (Brim, 1966; Dey, 1997, p. 97).

Academic Environment. The box labeled academic environment represents behaviors and experiences associated with students’ academic pursuits while enrolled at a community college. These variables (see Table 6.1) include students’ curricular decisions and experiences as well as their interactions with faculty members and academic counselors. Extending previous research on the influence of institutional agents (Rendón, 1994, 1995; Stanton-Salazar, 1997, 2011), the findings (see RQ4 – Table 5.13) found that faculty members and academic counselors exerted considerable social influence with respect to students’ attitudes and beliefs related to transfer. Simply put, interactions with institutional agents can be an important source of motivation for prospective transfer students.

Social Environment. Similarly, the box labeled social environment represents behaviors and experiences that occur outside of the classroom but with individuals and groups affiliated with the college. These variables (see Table 6.1) include extracurricular decisions and experiences such a peer interactions as well as other opportunities to engage the college environment through employment and/or residential life. The existing evidence is sparse and inconsistent with regard to the importance of the social environment for upward transfer, but the findings (see RQ4 – Table 5.13) did show that students perceived some social pressure from classmates to transfer, though they were not generally motivated to comply with those classmates’ expectations for them. Future research should further consider the nature of such relationships and sources of social interaction that may differ from those at four-year institutions (Crisp & Nora, 2010; R. Deil-Amen, n.d.).

External Commitments. Finally, the box labeled external commitments represents behaviors and experiences that occur outside of the collegiate environment but still impact students. These variables (see Table 6.1) include employment, family responsibilities, and community involvement (e.g., religious affiliation). The two-way arrow between the collegiate experience and external commitments boxes shows that student interaction within the college environment impacts external commitments. Likewise, this arrow shows that external commitments and experiences impact the extent to which students can interact with the college environment, and that all of these experiences are factored into students' goals/perceptions with regard to their academic pursuits (e.g., attitudes).

Intervening Outcomes: Student Perceptions & Goals

Throughout the collegiate experience, students make constant subjective assessments of the objective educational experience (Weidman, 1989). In the proposed model, students and their assessments are represented by the box labeled student perceptions/goals that is placed at the center of the collegiate experience box. These are relevant outcomes which the institution should be interested in cultivating because they represent the psychological results of interacting with the institution that can support intentions to transfer (Bean & Eaton, 2000; Bean, 1982b). Such outcomes are largely absent from current research on upward transfer. Findings (RQ1 – Table 5.2) suggest, however, that it is possible to appropriately conceptualize, measure, and predict such social psychological outcomes. In the context of the theory of planned behavior framework, these perceptions and goals are referred to as attitudes and beliefs – attitudes toward transfer, social norms, perceived behavioral control, and intent – related to upward transfer. All of these are important because the joint influence reflect the building blocks associated with motivation to transfer to a four-year college or university. In some ways, these outcomes reflect

what Astin (1993) identified as affective-psychological outcomes in his earlier typology of student outcomes. As was discussed earlier, these perceptions and goals are significant because it is assumed that the direct effects of institutional characteristics and features on outcomes, such as upward transfer, are subsumed by these attitudinal variables which are antecedents to transfer intentions (Bean, 1982a).

The curved arrows illustrate that the relationship between students' perceptions/goals and the academic and social environments is recursive. In other words, the model suggests that students enter postsecondary education with goals and perceptions of the collegiate environment that impact their decisions about the types of academic and social behaviors to participate in, as well as the extent to which they interact with the collegiate environment. Results from the moderating models (RQ3 - Table 5.11) provide preliminary insight into the enhancing effect these collegiate experiences had on students' intentions to transfer. When students held positive views of the programs, services, and institutional agents presumed to support transfer, the prediction of transfer intentions was improved. The finding that the relationship between social norms and transfer intentions was heightened among students with a positive perception of the transfer climate adds to the work on the role of institutional agents in relationship to student outcomes (Rendón, 1994, 1995; Stanton-Salazar, 1997, 2011). These findings underscore the powerful relationship between institutions and students' psychosocial processes. In particular, they highlight the role of opportunity structures, in this case represented by the institution, can play in impacting how students think about their educational goals. These results are supported by researchers who examine the relationship between the organization and other types of social psychological outcomes such as sense of belonging, academic self-efficacy, and purposes for enrolling in postsecondary education (Berger & Milem, 2000; Tinto, 1993). Future research

should address the role of specific programs and services intended to support transfer in order to better understand the moderating effect of such variables.

Outcome: Transfer Intention

The box labeled transfer intention is intended to demonstrate that students' decisions to transfer are a result of a series of academic, social, and external interactions and experiences while enrolled at a community college. Stated differently, transfer intent is theorized to incorporate the joint effects of the background, organizational, and attitudinal variables. As a result, transfer intention, if measured appropriately, should be the best predictor of upward transfer. Although not examined here, the relationship between intentions and behavior is supported by decades of empirical research related to educational outcomes and other social policy outcomes (Ajzen, 1985, 1991, 2005, 2012a). The proposed model does not specify a particular point at which students consider their readiness to transfer, but it seems reasonable to assume that students reconsider their educational goals each academic term (Hagedorn et al., 2008).

The benefit of measuring transfer intentions is that they capture the motivational aspects of cognitive processes. Moreover, students who develop intentions to transfer should exhibit a desire to engage in the activities necessary to reach their goal (Ingram et al., 2000, p. 215). The current model, however, only provides insight into the general contribution of attitudes, subjective norms, and perceived behavioral control. For example, for the students in this study, attitudes toward transfer exerted the strongest effect on transfer intentions (RQ2—Table 5.9), suggesting that the instrumentality of the benefits the students associated with transfer (e.g., B.A. attainment, increase wages, etc.), might be particularly motivating (RQ4 – Table 5.12). One way to improve the utility of the model and deepen our understanding of the motivational aspects of

transfer intentions would be to assess whether students who reported intentions to transfer were actually engaging in pro-transfer behaviors (e.g., meeting with counselors, seeking transfer information, etc.) in support of that goal (Ingram et al., 2000).

As the two one-way arrows extending from the collegiate experience suggest, the culmination of the experiences with the academic and social environments of an institution and one's external commitments result in some determination of a student's perceptions of the institution and educational goals which influence transfer intentions. This portion of the model assumes that, in order to remain committed to the goal of transfer, motivated students must complete the requisite academic courses, believe the outcomes of transfer are beneficial, receive social pressures from individuals within and outside of the community college, feel a sense of control over perceived barriers, and have had positive assessments with regard to their academic, social, and externally related activities (Tinto, 1987, 1993).

Finally, the two one-way arrows extending from the transfer intention to the transfer box represent the need by the student to make a decision (or act). Depending on the individual student and the institutional context, there are many decisions a community college student can make, once enrolled. This is represented by the one-way dotted arrow that extends from the transfer intent box to the transfer behavior box. Likewise, a student may make some other decision such as a certificate or vocational program, or to discontinue their postsecondary endeavors temporarily or permanently. These alternate decisions are outside the scope of this study, but are represented in the model by the shaded one-way dotted arrow that extends from the predisposition to transfer box toward the shaded some other decision box.

Study Limitations

There are a few noteworthy limitations of the present study. Two initial notes of caution deal with issues of validity given the study design and sampling techniques employed. The first limitation concerns the study design and the potential for threats to internal validity. Because students were not randomized into control and treatment groups for this study, there remains a possibility for alternate explanations for the observed relationships. Moreover, although structural equation modeling (SEM) is understood on the surface as a technique to “prove” causations, it is impossible to empirically determine the causal direction of the relationships tested. This is especially true when using cross-sectional data (Lei & Wu, 2007). For example, predicting transfer intentions from perceived behavioral control may be equivalent to predicting perceived behavioral control from transfer intentions. Concerns regarding internal validity are somewhat less of a concern given experimental and correlational evidence that supports the hypothesized relationships outlined (Ajzen, 2012a, 2012b; Fishbein & Ajzen, 2009).

Another concern is that the sampling technique created problems associated with external validity. Specifically, given that this study employed voluntary response sampling procedures, it is possible that the students who participated are systematically different than the other students at their institution and the general population of community college students. In other words, the question remains whether, on the whole, these relationships exist for all community college students. The purpose of this study, however, was to test the theory of planned behavior with a sample of community college students in order to better understand the psychosocial processes often overlooked in traditional studies on upward transfer. Broad inferences from these data and findings must still be tempered.

A third limitation concerns the reliance on self-report data to gather information about students' attitudes and beliefs about upward transfer. The primary concern with self-report data for this study is that responses were vulnerable to self-presentational biases, which could mean that students provided socially desirable responses in terms of their attitudes and intentions about upward transfer (Armitage & Conner, 2001). While it is plausible that the study participants provided responses that do not reflect their actual attitudes and beliefs, other studies have found no relationship between measures of social desirability and the TPB constructs (Armitage & Conner, 1999). Future research should consider the use of scales such as the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1967) to account for the potential of such bias (Beck & Ajzen, 1991).

Implications for Future Research & Institutional Practice and Policy

Implications for Future Research

The results of this study highlight several suggestions that will improve the subsequent research on upward transfer. The first is that future researchers must further explore and test the theory of planned behavior as well as other social psychological theories that can be used to better understand and model the process of educational attainment. In the case of upward transfer, some researchers have attempted to integrate psychosocial variables and constructs into their research, but no consistent approach that incorporates these aspects has gained traction (Bean & Eaton, 2000). It may be that future researchers should spend more time examining intervening variables and constructs (i.e., transfer intent), given the role they play in the attainment process, rather than only modeling outcome variables (i.e., transfer). A related implication that extends from the findings of this study is that educational goals, such as upward transfer, are multidimensional constructs. As such, future research should recognize that there is

a complicated set of attitudes and beliefs related to how individuals make meaning around their educational goals and employ appropriate measurement techniques (Ajzen, 2005, p. 177; Sellers et al., 1997).

The findings also suggest the need to identify other attitudes and beliefs to be incorporated into future research studies. Indeed, for this study, there was unexplained variance of transfer intention from the TPB constructs. Other researchers have explored the role of psychosocial factors such as: satisfaction with the institution, commitment to potential transfer institution, and sense of belonging in relationship to relevant student outcomes (Berger & Milem, 2000; Hurtado & Carter, 1997; Nora & Rendón, 1990). Exploring the joint influence of other psychosocial factors will particularly improve our understanding of what motivates traditionally marginalized subgroups in relationship to relevant outcomes such as upward transfer.

Implications for the design of future studies also emerged from the findings of this study. The present study determined, for a particular sample, the relative importance of the three categories of theoretical constructs (i.e., attitudes, subjective norms, and perceived behavioral control) and identified a relevant set of determinants of those constructs. However, there is also a need to document how various collegiate experiences and interventions can be modified to influence transfer intentions. Future researchers should consider utilizing the theory of planned behavior in the context of a particular intervention to examine how students' attitudes and beliefs might be modified as a result of interacting with the aspects of the collegiate environment (Ellis, n.d.). For example, future researchers could design a quasi-experimentally designed study (e.g., pretest-posttest design with a control group) with a transfer center to assess whether students' attitudes about transfer change after being exposed to "traditional" and modified academic counseling approaches.

As indicated by the results above, questions remain about whether and how the theoretical propositions tested in this study apply to other subgroups of community college students. The focus on Black and Latino students here was warranted given that these groups transfer at rates lower than their White peers, despite expressing similar educational goals. The current study shed some light on the factors that contribute to Latino students' motivation to transfer to a four-year college, but was less effective in explaining transfer intentions of Black students. One possible explanation the TPB was not a reasonable model for Black students' motivation to transfer is perhaps related to differences in academic socialization between the two groups. In the most basic sense, academic socialization refers to the ways in which parents influence the development of attitudes and motives that are essential for school success (Bempechat, Graham, & Jimenez, 1999). Some studies have suggested that at a young age Black children are more frequently introduced to external structural barriers such as racism that could prevent success in many aspects of life more so than other racial and ethnic groups (Constantine & Blackmon, 2002). As expected, awareness of these structural barriers can be communicated by family members and peers or internalized through personal experience which influence future attitudes related to school and academic success. Given this reality, whereas Latino students' intentions to transfer were explained sufficiently by the TPB constructs, Black students' motivation to transfer might be more influenced by perceptions of external factors such as the expectations or biases of others (e.g., stereotype threat) (Steele & Aronson, 1995). Some researchers have indeed argued that perceived behavioral control should be separated into two distinct control process that reflect internal control (i.e., self-efficacy) and external control (i.e., controllability) over the behavior (Armitage & Conner, 2001). This suggests that an individual may simultaneously believe they have the requisite skills to engage in a behavior but also believe

that there are factors outside of their control that might influence their ability to perform the behavior, both of which could influence their intention related to some outcome. As a result, some researchers have conceptualized perceived control over behavior to assess the degree to which performing a given behavior is under one's own control. Future research should explore not only the relationships between attitudes, intentions, and behavior, but strive to include measures of external controllability of academic behaviors to more precisely determine the relationships between internal control, external control, and transfer intentions.

Implications for Institutional Practice and Policy

Though exploratory in nature, the findings in this study also have implications for community college administrators, academic counselors and teaching faculty. At the institutional level, it is important that campus leaders recognize the multileveled and complex nature of educational goal formation for students who choose the community college as a route to a baccalaureate degree. As a result, institutional leaders should strive to ensure that all new policies and programmatic interventions geared toward supporting students interested in transfer target students and others outside the academic community. Programs and services that are reflective of such institutional policy should be sure that students know that they are encouraged, though not required, to invite peers and family members to targeting informational meetings (e.g., orientation, transfer center open house, financial aid advising) throughout their time at the community college. Because many community college students are first generation college students, it is important that these individuals, who are often considered on the periphery for college students, also have access to the knowledge and resources so that they can help motivate them as they pursue their educational goals.

The role of institutional agents is also vital for to support students who intend to transfer to a four-year college or university. Faculty members and academic counselors have the ability to support students educational goals by facilitating access to social capital and promoting students' sense of perceived behavioral control by affirming and supporting students (Rendón, 1994, 1995; Stanton-Salazar, 1997, 2011). However, it is less clear whether the support must come from a student's own faculty members or counselors, or whether students would respond similarly to others in that capacity. College administrators could design training sessions for faculty members and academic counselors with an interest in providing additional tutoring or mentoring to students interested in transfer. The content of these training sessions should include content-specific information (e.g., mentoring skills, financial aid, and academic support) as well as techniques to identify behaviors that indicate a student is losing focus or straying away from their expressed goals. With regard to counseling specifically, recent research found that academic counselors in the most impacted states are limited to strict fifteen minute blocks with students and typically only have time to cover registration prerequisites or class scheduling (Bocchino, 2009). Supplemental mentoring from other institutional agents would provide students the opportunity to get non-academic support and mentoring needed to sustain a commitment to transfer.

Programs and services can also be tailored more specifically to the needs of students interested in transferring. It seems that the students in this study had serious concerns and doubt about their capacity to execute the tasks necessary to transfer (e.g., study skills and remedial education). Moreover, students were keenly aware of financial constraints they might face while enrolled at the community college. Community colleges equipped with such information could design workshops or classes (e.g., Upward Transfer 101) that provide a space for students,

family members, and peers to receive information, resources and strategies for success and simultaneously reflect on what having access to resources academic and financial resources might mean for their future academic success. Most existing approaches focus solely on removing or mediating the objective concerns for students (i.e., awarding financial aid), but few interventions focus on the role of students' cognitions about these concerns which also have an influence on important intervening outcomes such as transfer intentions (Bowman, 2006).

Final directions for future practice could be derived from the use of the integrated model proposed, and the use of transfer intentions in particular, to guide the work of institutional research (IR) offices (Bean, 1982a). If used throughout a student's time at a community college, a model, with transfer intent as a central construct, can provide IR offices and others who support students, with vital information about students after they matriculate. Specifically, the intent construct can be used as an early warning indicator to identify students who might need additional support. On the one hand, the model can be used to identify students with intentions to transfer but have not seen an academic counselor or taken the appropriate sequence of classes and provide them with the appropriate support. On the other hand, the model, if used over time to track students, can be used to identify students who had intentions to transfer upon entry but have modified or lowered those intentions since enrolling. This would be especially useful for students with high potential that seem to be "cooling out" for whatever reason (Clark, 1960).

Concluding Thoughts

One of the most important questions for community college administrators and other practitioners today is identifying explanations for why some students progress successfully and why others are unable to achieve similar results (Hagedorn, 2010). Community colleges are typically perceived as the least prestigious sector of the American higher education hierarchy, yet

these institutions have become a panacea for curing one of the most critical ills (e.g., failure to adequately educate youth) of the secondary education system (Callahan & Chumney, 2009).

Understanding students' progress once enrolled in a community college is ever more important as institutions adjust to waning state appropriations, heightened student demand, and increased scrutiny from stakeholders (Belfield & Bailey, 2011).

If the U.S. is to reemerge as a world leader in the proportion of educated citizens, it is imperative that our attention shift to the plight of the students who are underserved by our educational structures and simultaneously to the open- and broad-access institutions (i.e., community colleges, MSIs, and regional institutions) that primarily educate these students (Breneman, 2012; Regina Deil-Amen & DeLuca, 2010). Community colleges and the transfer function, by providing access to postsecondary education to the least advantaged students, continue to be major tools at our disposal to reduce social and educational inequalities that are key obstacles to achieving the education attainment goals outlined by the federal government and leading philanthropic foundations (Nichols, 2011).

APPENDICES

APPENDIX A - RECRUITMENT EMAIL SCRIPT

COMMUNITY COLLEGE STUDENTS' ATTITUDES ABOUT TRANSFER STUDY

Email Subject: Chance to win an iPad mini or Visa Gift Card for sharing your opinions with Washtenaw Community College

Dear Washtenaw Community College Student,

You have been selected to complete a 15-20 minute brief survey about your opinions on transferring to a four-year university. The input you provide is very valuable and will be used to gain a better understanding of students interested in transferring to a four-year institution. Your input will also help this community college (other others) create programs and services to serve students like you!

After completing the survey, you will be entered in a raffle to win one of several iPad minis or Visa Gift Cards. You must be 18 or older to participate in the survey and the raffle.

Please click [here](#) to access the survey. If the survey does not open automatically, please copy and paste the link below to your browser's address bar:

<http://goo.gl/J2LTA>

Have questions?

I am sending this message on behalf of Chris Nellum, a graduate student at the University of Michigan. He has worked with community college students as a professional and is truly interested in learning about your opinions regarding transf. Please email Chris at cnellum@umich.edu if you have any questions about the survey or raffle.

The survey is completely anonymous, meaning that your identity cannot be connected in any way to your survey answers. The survey is also voluntary so you can stop at any time. Neither your decision to participate nor your actual responses to the survey will influence your status as a student here.

PLEASE DO NOT FORWARD THIS MESSAGE

APPENDIX B – INFORMED CONSENT

COMMUNITY COLLEGE STUDENT ATTITUDES ABOUT TRANSFER SURVEY (HUM00068082)

STUDY INVITATION & RAFFLE

You are invited to be a part of a research study that hopes to learn more information about your thoughts about transferring to a four-year college or university. The goal of the study is to provide suggestions to colleges about ways to help students like you in the transfer process. This survey should take you about 15 to 20 minutes to complete.

Most of the survey questions ask what you think about transferring, what important people in your life think about transferring, and what things might keep you from transferring. You will be entered in a raffle giving you the chance to win one of several iPad minis or \$25 Visa gift cards simply for your participation.

PARTICIPATION IS VOLUNTARY & CONFIDENTIAL

Taking this survey is completely up to you. Even if you start the survey now you can change your mind and stop at any time. You can also decide not to answer one of the questions or skip any section of the survey. All you have to do is click “next” at the bottom of the survey page to skip a question.

Please feel comfortable to provide thoughtful and honest responses because I will not be able to connect your actual responses to you since the system keeps your answers separate from your email address. All of your responses will be saved on an Internet site sponsored by Qualtrics survey software and will be protected.

HOW WILL SURVEY RESPONSES BE USED?

The answers you provide will be combined with other responses and used for my dissertation project for graduation. Your answers will be saved and used for future research projects, but will not include any information about your individual answers. My overall goal is that this survey will provide a better understanding of students’ experiences with the transfer process to four-year colleges and universities (like you).

You probably will not get any direct advantage from taking the survey. You also will not experience any risks by taking this survey that are any different from your everyday activities.

HAVE QUESTIONS?

If you have questions or concerns about this research study please contact me (Chris Nellum) at (734) 764-9472 or by email at cnellum@umich.edu. You may also contact my advisor, Phillip Bowman at (734) 764-6497 or by pjbowman@umich.edu.

If you have questions about your rights as a research participant or want to ask questions about this study with someone other than the researcher please contact the University of Michigan Health Sciences and Behavioral Sciences Institutional Review Board. The contact information for that office: 540 E Liberty St., Ste 202, Ann Arbor, MI 48104-2210, (734) 936-0933 [or toll free, (866) 936-0933], irbhsbs@umich.edu.

Yes - By clicking "Yes" I agree that I am 18 years of age or older. I have read the information on the previous page and I agree to participate in this research study. (You will be taken to the survey.)

No - No, I do not agree (Survey will be ended)

APPENDIX C – SURVEY OF COMMUNITY COLLEGE STUDENTS ATTITUDES AND BELIEFS

Q1.1 Consent to Participate in a Research Study

Welcome to the COMMUNITY COLLEGE STUDENT ATTITUDES ABOUT TRANSFER Survey (HUM00068082)

STUDY INVITATION & RAFFLE

You are invited to be a part of a research study that hopes to learn more information about your thoughts about transferring to a four-year college or university. The goal of the study is to provide suggestions to colleges about ways to help students like you in the transfer process. This survey should take you about 15 to 20 minutes to complete. Most of the survey questions ask what you think about transferring, what important people in your life think about transferring, and what things might keep you from transferring. You will be entered in a raffle giving you the chance to win one of several iPad minis or \$25 Visa gift cards simply for your participation.

PARTICIPATION IS VOLUNTARY & CONFIDENTIAL

Taking this survey is completely up to you. Even if you start the survey now you can change your mind and stop at any time. You can also decide not to answer one of the questions or skip any section of the survey. All you have to do is click “next” at the bottom of the survey page to skip a question. Please feel comfortable to provide thoughtful and honest responses because I will not be able to connect your actual responses to you since the system keeps your answers separate from your email address. All of your responses will be saved on an Internet site sponsored by Qualtrics survey software and will be protected.

HOW WILL SURVEY RESPONSES BE USED?

The answers you provide will be combined with other responses and used for my dissertation project for graduation. Your answers will be saved and used for future research projects, but will not include any information about your individual answers. My overall goal is that this survey will provide a better understanding of students’ experiences with the transfer process to four-year colleges and universities (like you). You probably will not get any direct advantage from taking the survey. You also will not experience any risks by taking this survey that are any different from your everyday activities.

HAVE QUESTIONS?

If you have questions or concerns about this research study please contact me (Chris Nellum) at (734) 764-9472 or by email at cnellum@umich.edu. You may also contact my advisor, Phillip Bowman at (734) 764-6497 or by pjbowman@umich.edu. If you have questions about your rights as a research participant or want to ask questions about this study with someone other than the researcher please contact the University of Michigan Health Sciences and Behavioral Sciences Institutional Review Board. The contact information for that office: 540 E Liberty St.,

Ste 202, Ann Arbor, MI 48104-2210, (734) 936-0933 [or toll free, (866) 936-0933],
irbhsbs@umich.edu.

- "Yes"- I agree that I am 18 years of age or older. I have read the information above and I agree to participate in this research study.
- No - I do not agree to participate in this research study. (2)

If "Yes" - I agree that I am 18... Is Selected, Then Skip To End of Block
 If No - I do not agree to part... Is Selected, Then Skip To End of Survey

Q2.1 Please answer the following question by choosing the option that best describes your opinion.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Disagree or Agree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
I expect to transfer to a four-year college or university within two years. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3.1 These questions ask basic information about who you are. Please choose the option for each question that best describes you.

Q3.2 What is your gender?

- Male (1)
- Female (2)

Q3.3 What is your racial/ethnic group? [choose one]

- Black/African American (non-Hispanic) (1)
- Hispanic, Latina/o, Chicana/o (2)
- Asian American (3)
- Native Hawaiian, Other Pacific Islander (4)
- White, Caucasian (non-Hispanic) (5)
- American Indian, Alaska Native (6)

Q3.4 What is your age?

Q3.5 What is your marital status?

- Single, never married (1)
- Married or domestic partnership (2)
- Widowed (3)
- Divorced (4)
- Separated (5)

Q3.6 Growing up, what was your family's total household income each year?

- less than \$15,000 (1)
- \$15,001-\$30,000 (2)
- \$30,001-\$50,000 (3)
- \$50,001-\$70,000 (4)
- more than \$70,000 (5)
- Don't Know (6)

Q3.7 What is the highest level of education each of your parents completed?

	MOTHER/Female Guardian (choose ONE) (1)	FATHER/Male Guardian (choose ONE) (2)
Less than high school diploma (1)	<input type="checkbox"/>	<input type="checkbox"/>
High school diploma (2)	<input type="checkbox"/>	<input type="checkbox"/>
Some college (3)	<input type="checkbox"/>	<input type="checkbox"/>
College degree (4)	<input type="checkbox"/>	<input type="checkbox"/>
Graduate/Professional degree (5)	<input type="checkbox"/>	<input type="checkbox"/>
Don't Know (6)	<input type="checkbox"/>	<input type="checkbox"/>

Q4.1 Please answer the following question by choosing the option that best describes your opinion.

	Strongly Agree (1)	Agree (2)	Somewhat Agree (3)	Neither Agree or Disagree (4)	Somewhat Disagree (5)	Disagree (6)	Strongly Disagree (7)
I intend to transfer to a four-year college or university within two years. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5.1 Name of Community College & City of College (the college that sent you this survey)
 Full College Name (1)
 City College is Located (2)

Q5.2 These questions ask general information about your time at this community college (the college that sent you this survey). Please choose the option for each question that best describes you.

Q5.3 CURRENTLY, what is your grade point average?

- 3.5 to 4.0 (A Average) (1)
- 3.00-3.49 (B average) (2)
- 2.50-2.99 (C average) (3)
- 2.00-2.49 (C- or D average) (4)
- below 2.0 (D- or F average) (5)

Q5.4 How many semesters have you been enrolled at this community college? (total)

Q5.5 Have you enrolled in any remedial/basic skills/developmental courses since starting at this community college?

- Yes (1)
- No (2)

If Yes Is Selected, Then Skip To How many remedial/basic skills/develo...If No Is Selected, Then Skip To End of Block

Q5.6 How many remedial/basic skills/developmental courses have you enrolled in so far?

Q6.1 Since entering this college how often have you done the following? Please read carefully and answer honestly.

	Frequently (1)	Sometimes (2)	Not at All (3)
Taken courses that provided information about transfer, financial aid, and study skills (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Met with a community college counselor about transferring (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discussed my academic goals with faculty members/professors (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talked to a peer advisor about transferring (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attended a college fair (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talked with a transfer admissions counselor from a four-year university (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in a summer program at a four-year university (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Looked for information about prerequisites in my major (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visited a four-year campus (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used a transfer course requirements list OR a transfer plan when registering for classes (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was encouraged by faculty or staff to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

participate in an academic summer program linked with a four-year university (11)			
---	--	--	--

Q7.1 Please answer the following question by choosing the option that best describes your opinion.

	Strongly Disagree (19)	Disagree (20)	Somewhat Disagree (21)	Neither Agree nor Disagree (22)	Somewhat Agree (23)	Agree (24)	Strongly Agree (25)
I will try to transfer to a four-year college or university within two years. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8.1 Please tell me how much you agree or disagree with the following statements about your current college:

	Strongly Agree (1)	Agree (2)	Neither Agree nor Disagree (3)	Disagree (4)	Strongly Disagree (5)
This campus proactively distributes transfer information to students (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's easy to find help about applying to four-year colleges/universities here (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Counselors make transfer a priority at this institution (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This campus actively helps students/parents apply for financial aid (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty members/professors make transfer a priority at this institution (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Class sections are available in the evening (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student services are available for night students (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty members/professors and staff understand the academic, cultural, social, and economic needs of students who go here (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administrators make transfer a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

priority at this institution (9)					
This community college promoted transfer at my high school (10)	<input type="radio"/>				
Students learn about transfer requirements at college entry (11)	<input type="radio"/>				

Q9.1 Please answer the following question by choosing the option that best describes your opinion.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
I am determined to transfer to a four-year college or university within two years. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10.1 Some of these questions seem similar, but they are actually different. Please read each question carefully. Please answer each of the following questions by choosing the option that best describes your opinion.

Q10.2 For me, transferring to a four-year college or university within the next two years would be:

	Very Bad (1)	Bad (2)	Poor (3)	Neither Good nor Bad (4)	Fair (5)	Good (6)	Very Good (7)
. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10.3 For me, transferring to a four-year college or university within the next two years would be:

	Very Useless (1)	Useless (2)	Somewhat Useless (3)	Neutral (4)	Somewhat Useful (5)	Useful (6)	Very Useful (7)
. (1)	<input type="radio"/>						

Q10.4 For me, transferring to a four-year college or university within the next two years would be:

	Not at all Important (1)	Very Unimportant (2)	Somewhat Unimportant (3)	Neither Important nor Unimportant (4)	Somewhat Important (5)	Very Important (6)	Extremely Important (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10.5 For me, transferring to a four-year college or university within the next two years would be:

	Very Boring (1)	Boring (2)	Sort of Boring (3)	Neutral (4)	Somewhat Exciting (5)	Exciting (6)	Very Exciting (7)
. (1)	<input type="radio"/>						

Q10.6 For me, transferring to a four-year college or university within the next two years would be:

	Completely Unsatisfying (1)	Unsatisfying (2)	Kind of Unsatisfying (3)	Undecided (4)	Kind of Satisfying (5)	Satisfying (6)	Completely Satisfying (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10.7 For me, transferring to a four-year college or university within the next two years would be:

	Very Difficult (1)	Difficult (2)	Somewhat Difficult (3)	Neutral (4)	Somewhat Easy (5)	Easy (6)	Very Easy (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q11.1 Please answer the following question by choosing the option that best describes your opinion.

	Strongly Agree (25)	Agree (26)	Somewhat Agree (27)	Neither Agree nor Disagree (28)	Somewhat Disagree (29)	Disagree (30)	Strongly Disagree (31)
I might not transfer to a four-year college or university within two years. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12.1 Some of these questions seem the same, but they are actually different. Please read each question carefully. Please answer each of the following questions by choosing the option that best describes your opinion.

Q12.2 It is expected of me that I will transfer to a four-year college or university within the next two years.

	Definitely False (1)	Probably False (2)	Somewhat False (3)	Neither True nor False (4)	Somewhat True (5)	Probably True (6)	Definitely True (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12.3 Most people who are important to me would be disappointed if I do not transfer to a four-year college or university within the next two years.

	Very Unlikely (1)	Unlikely (2)	Somewhat Unlikely (3)	Undecided (4)	Somewhat Likely (5)	Likely (6)	Very Likely (7)
. (1)	<input type="radio"/>						

Q12.4 Most people I admire and respect think I should transfer to a four-year college or university within the next two years.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12.5 Most people like me will transfer to a four-year college or university within the next two years.

	Very Unlikely (1)	Unlikely (2)	Somewhat Unlikely (3)	Undecided (4)	Somewhat Likely (5)	Likely (6)	Very Likely (7)
. (1)	<input type="radio"/>						

Q12.6 Most people like me want to transfer to a four-year college or university within the next two years.

	Definitely False (1)	Probably False (2)	Somewhat False (3)	Neither True nor False (4)	Somewhat True (5)	Probably True (6)	Definitely True (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12.7 Most of the students I know at this college think transferring to a four-year college or university is a good idea.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13.1 Some of these questions seem the same, but they are actually different. Please read each question carefully. Please answer each of the following questions by choosing the option that best describes your opinion.

Q13.2 If I want to, I am confident that I can transfer to a four-year college or university within the next two years.

	Definitely False (1)	Probably False (2)	Somewhat False (3)	Neither True nor False (4)	Somewhat True (5)	Probably True (6)	Definitely True (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13.3 If I want to, I can overcome any problems that could keep me from transferring to a four-year college or university within the next two years

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13.4 I have the ability to transfer to a four-year college or university within the next two years.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13.5 It is mostly up to me whether or not I transfer to a four-year college or university within the next two years.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13.6 I have complete control of whether or not I transfer to a four-year college or university within the next two years.

	Definitely False (1)	Probably False (2)	Somewhat False (3)	Neither True nor False (4)	Somewhat True (5)	Probably True (6)	Definitely True (7)
. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13.7 Something or someone will keep me from transferring to a four-year college or university within the next two years.

	Very Unlikely (1)	Unlikely (2)	Somewhat Unlikely (3)	Undecided (4)	Somewhat Likely (5)	Likely (6)	Very Likely (7)
. (1)	<input type="radio"/>						

Q14.1 YOU'RE ALMOST DONE! ONLY TWO SCREENS LEFT! The questions below ask about things that might happen if you end up transferring to a four-year college or university...please read each question carefully and choose the option for each that best describes your opinion.

	Very Unlikely (1)	Unlikely (2)	Somewhat Unlikely (3)	Undecided (4)	Somewhat Likely (5)	Likely (6)	Very Likely (7)
Transferring to a four-year college or university will COST ME MORE MONEY. (1)	<input type="radio"/>						
Transferring to a four-year college or university will LEAD TO A BETTER JOB. (2)	<input type="radio"/>						
Transferring to a four-year college or university will MEAN I HAVE TO MOVE AWAY FROM HOME AND LEAVE FAMILY & FRIENDS. (3)	<input type="radio"/>						
Transferring to a four-year college or university will RESULT IN ME GETTING A BACCALAUREATE DEGREE. (4)	<input type="radio"/>						
Transferring to a four-year college or university will BE A COMPLETE WASTE OF TIME. (5)	<input type="radio"/>						
Transferring to a four-year college or university will MAKE ME FEEL SUCCESSFUL AND GOOD ABOUT	<input type="radio"/>						

<p>MYSELF. (6)</p> <p>Transferring to a four-year college or university will</p> <p>MAKE MY FAMILY AND COMMUNITY PROUD. (7)</p>	○	○	○	○	○	○	○
<p>Transferring to a four-year college or university will</p> <p>REQUIRE HARD WORK. (8)</p>	○	○	○	○	○	○	○

Q14.2 Please read each question carefully and choose the option that best describes your opinion.

	Very Bad (1)	Bad (2)	Poor (3)	Neither Good nor Bad (4)	Fair (5)	Good (6)	Very Good (7)
For me to spend more money on college is... (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me to have better job opportunities is... (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me, moving away from home/leaving family & friends is... (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me to get a baccalaureate degree is... (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me, wasting time is... (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me, feeling successful/good about myself is... (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me, making my family/community proud is... (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me, hard work is... (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q15.1 YOU'RE ALMOST DONE! ONLY ONE SCREEN LEFT! For this question, think about the people and groups and if they think you should transfer to a four-year college or university (choose ONE response for each):

	Strongly Agree (8)	Agree (9)	Somewhat Agree (10)	Neither Agree or Disagree (11)	Somewhat Disagree (12)	Disagree (13)	Strongly Disagree (14)
Generally speaking, my FAMILY MEMBERS think I should transfer: (42)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, my FACULTY MEMBERS/PROFESSORS think I should transfer: (43)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, my ACADEMIC COUNSELORS think I should transfer: (44)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, my CLOSE FRIENDS think I should transfer: (45)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, my WORK SUPERVISOR thinks I should transfer: (46)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, my CLASSMATES think I should transfer: (47)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q15.2 This question sounds like the last question, but it is actually different. Please read carefully and choose the option that best describes your opinion. For this question, think about the people/groups and think about if you want to do what they think you should do (choose ONE response for each):

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Disagree or Agree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
Generally speaking, I want to do what my FAMILY MEMBERS think I should do. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, I want to do what FACULTY MEMBERS/PROFESSORS think I should do. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, I want to do what my ACADEMIC COUNSELORS think I should do. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, I want to do what my CLOSE FRIENDS think I should do. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, I want to do what WORK SUPERVISOR thinks I should do. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, I want to do what CLASSMATES think I should do. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q16.1 For this question, think about things that might happen in the next two years...please read carefully and choose the option that best describes your opinion.

	Very Unlikely (1)	Unlikely (2)	Somewhat Unlikely (3)	Undecided (4)	Somewhat Likely (5)	Likely (6)	Very Likely (7)
I expect that I will have to take remedial/developmental classes in the next two years. (1)	<input type="radio"/>						
I expect that I will have to work while taking classes in the next two years. (2)	<input type="radio"/>						
I expect that I might not have enough money to pay for classes in the next two years. (3)	<input type="radio"/>						
I might not have the study skills to pass my classes in the next two years. (4)	<input type="radio"/>						
I expect having more interest in things other than college in the next two years. (5)	<input type="radio"/>						
The classes I need to transfer might not be offered at good times in the next two years. (6)	<input type="radio"/>						
I expect not feeling comfortable given my race or ethnicity at this college in the next two years. (7)	<input type="radio"/>						

Q16.2 Now for this question think about if any of the things might make it harder for you two transfer in the next two years...please read carefully and choose the option that best describes your opinion.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
Taking remedial/developmental classes would make it harder for me to transfer to a four-year college or university in the next two years. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working while taking classes would make it harder for me to transfer to a four-year college or university in the next two years. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not having enough money to pay for classes would make it harder for me to transfer to a four-year college or university in the next two years. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not having the study skills to pass my classes would make it harder for me to transfer to a four-year college or university in the next two years. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having more interest in things other than school would make it harder for me to transfer to a four-year college or university in the next two years. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the classes I need to transfer aren't offered at good times,	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p>it would make it harder for me to transfer to a four-year college or university in the next two years. (6)</p> <p>If I don't feel comfortable because of my race or ethnicity at this college, it would make it harder for me to transfer to a four-year college or university in the next two years. (7)</p>	○	○	○	○	○	○	○
--	---	---	---	---	---	---	---

Q17.1 Most of the questions on this survey assumed that you expect to transfer to a four-year college or university... In your own words, why do you want to transfer to a four-year college or university?

Q17.2 Several of the questions on this survey asked you about people, programs, and other services at your community college that might be helpful for students interested in transferring to a four-year college or university... In your own words, could you please talk about some things at your community college that you think are helpful for students who want to transfer? If possible, please give specific examples?

Q17.3 Several of the questions on this survey asked you about people, programs, and other services at your community college that might be could help or hurt students interested in transferring to a four-year college or university... In your own words, could you please talk about some things at your community college that might hurt students interested in transferring to a four-year college or university? If possible, please give specific examples

Q17.4 Several of the questions on this survey asked you about people, programs, and other services at your community college that might be could help or hurt students interested in transferring to a four-year college or university... In your own words, could you please talk about some things at your community college that might change a student's mind if they were interested in transferring to a four-year college or university? If possible, please give specific examples.

Q17.5 Some of the questions on this survey asked you about if you could overcome challenges that might keep you from transferring... In your own words, could you briefly describe a challenge you faced that impacted your thoughts about transferring to a four-year college or university?

Q17.6 All of the survey questions on this survey asked you to think about transferring to a four-year college or university... Think about the perfect four-year college or university that you could transfer to...in your own words, could you talk about why you want to transfer there?

REFERENCES

- Acock, A. C. (2013). *Discovering structural equation modeling using Stata*. College Station, Tex.: Stata Press.
- Adelman, C. (1999). *Answers in the Tool Box. Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment*. (Technical Report). Washington, D.C.: U.S. Department of Education. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED431363>
- Adelman, C. (2002). The Relationship between Urbanicity and Educational Outcomes. In W. G. Tierney & L. S. Hagedorn (Eds.), *Increasing access to college: Extending possibilities for all students* (pp. 35–64). Albany: State University of New York Press.
- Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion From High School Through College* (Technical Report). Washington, D.C.: U.S. Department of Education. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED490195>
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action-control: From cognition to behavior* (pp. 11–39). Heidelberg, Germany: Springer.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.

- Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology, 32*(4), 665–683.
- Ajzen, I. (2005). *Attitudes, personality and behavior*. McGraw-Hill International.
- Ajzen, I. (2012a). Martin Fishbein's Legacy The Reasoned Action Approach. *The ANNALS of the American Academy of Political and Social Science, 640*(1), 11–27.
- Ajzen, I. (2012b). The theory of planned behavior. In A. M. Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 438–459). London, UK: Sage Publications, Inc.
- Ajzen, I., & Driver, B. L. (1992). Application of the Theory of Planned Behavior to Leisure Choice. *Journal of Leisure Research, 24*(3), 207–24.
- Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior* (1st ed.). Prentice Hall.
- Ajzen, I., & Klobas, J. (2013). Fertility intentions: An approach based on the theory of planned behavior. *Demographic Research, 29*, 203–232. doi:10.4054/DemRes.2013.29.8
- Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology, 22*(5), 453–474.
- Alexander, B. C., Garcia, V., Gonzalez, L., Grimes, G., & O'Brien, D. (2007). Barriers in the Transfer Process for Hispanic and Hispanic Immigrant Students. *Journal of Hispanic Higher Education, 6*(2), 174–184.
- Alexander, K. L., & Eckland, B. K. (1974). Sex Differences in the Educational Attainment Process. *American Sociological Review, 39*(5), 668–682.

- Allen, W. R. (1985). Black Student, White Campus: Structural, Interpersonal, and Psychological Correlates of Success. *The Journal of Negro Education*, 54(2), 134.
- American Association of Community Colleges. (2013). *Overview of undergraduate enrollment*. Washington, D.C. Retrieved from http://www.aacc.nche.edu/Publications/datapoints/Documents/Enrollment_102413.pdf
- Anderson, G. M., Sun, J. C., & Alfonso, M. (2006). Effectiveness of Statewide Articulation Agreements on the Probability of Transfer. *The Review of Higher Education*, 29, 261–291.
- Arbona, C., & Nora, A. (2007). The influence of academic and environment factors on Hispanic college degree attainment. *Review of Higher Education*, 30(3), 247–269.
- Armitage, C. J., & Conner, M. (1999). Predictive validity of the theory of planned behaviour: the role of questionnaire format and social desirability. *Journal of Community & Applied Social Psychology*, 9(4), 261–272.
- Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40(4), 471–499.
- Astin, A. W. (1984). Student Involvement: A Developmental Theory for Higher Education. *Journal of College Student Personnel*, 25(4), 297–308.
- Astin, A. W. (1991). *Assessment For Excellence: The Philosophy And Practice Of Assessment And Evaluation In Higher Education*. Oryx Press.
- Astin, A. W. (1993). What matters in college? Four critical years revisited, xxi, 482.
- Awad, G. H. (2007). The role of racial identity, academic self-concept, and self-esteem in the prediction of academic outcomes for African American students. *Journal of Black Psychology*, 33(2), 188.

- Babbie, E. R. (1990). *Survey research methods*. Belmont, Calif.: Wadsworth Pub. Co.
- Bagozzi, R. P. (1992). The Self-Regulation of Attitudes, Intentions, and Behavior. *Social Psychology Quarterly*, 55(2), 178–204.
- Bahr, P. R. (2008a). Cooling Out in the Community College: What is the Effect of Academic Advising on Students' Chances of Success? *Research in Higher Education*, 49(8), 704–732.
- Bahr, P. R. (2008b). Does mathematics remediation work?: A comparative analysis of academic attainment among community college students. *Research in Higher Education*, 49(5), 420–450.
- Bahr, P. R. (2009a). College hopping: Exploring the occurrence, frequency, and consequences of lateral transfer. *Community College Review*, 36(4), 271–298.
- Bahr, P. R. (2009b). Educational attainment as process: Using hierarchical discrete-time event history analysis to model rate of progress. *Research in Higher Education*, 50(7), 691–714.
- Bahr, P. R. (2010a). Preparing the Underprepared: An Analysis of Racial Disparities in Postsecondary Mathematics Remediation. *The Journal of Higher Education*, 81(2), 209–237.
- Bahr, P. R. (2010b). The Bird's Eye View of Community Colleges: A Behavioral Typology of First-Time Students Based on Cluster Analytic Classification. *Research in Higher Education*, 51(8), 724–749.
- Bailey, T. R., Alfonso, M., Calcagno, J. C., Jenkins, D., Kienzl, G., & Leinbach, T. (2004). *Improving Student Attainment in Community Colleges: Institutional Characteristics and Policies*. Community College Research Center, Teachers College, Columbia University.

Retrieved from

<http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED484346>

Bailey, T. R., Jenkins, D., & Leinbach, T. (2005). *Graduation Rates, Student Goals, and Measuring Community College Effectiveness. CCRC Brief Number 28*. Community College Research Center, Teachers College, Columbia University. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED489098>

Bailey, T. R., & Morest, V. S. (Eds.). (2006). *Defending the community college equity agenda*. Baltimore, MD: John Hopkins University Press.

Bailey, T. R., & Weininger, E. B. (2002). Performance, Graduation, and Transfer of Immigrants and Natives in City University of New York Community Colleges. *Educational Evaluation and Policy Analysis, 24*(4), 359–377.

Baird, L. L. (1971). Cooling Out and Warming Up in the Junior College. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ046462>

Bamberg, S., Ajzen, I., & Schmidt, P. (2003). Choice of Travel Mode in the Theory of Planned Behavior: The Roles of Past Behavior, Habit, and Reasoned Action. *Basic and Applied Social Psychology, 25*(3), 175–187.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215.

Banks, D. L. (1994). Effects of Environmental Conditions on Student-Transfer Activity. *Community College Journal of Research and Practice, 18*(3), 245–59.

- Barkley, S. M. (1993). A synthesis of recent literature on articulation and transfer. *Community College Review*, 20(4), 38–50.
- Bean, J. P. (1982a). Conceptual models of student attrition: How theory can help the institutional researcher. *New Directions for Institutional Research*, 1982(36), 17–33.
- Bean, J. P. (1982b). Student attrition, intentions, and confidence: Interaction effects in a path model. *Research in Higher Education*, 17(4), 291–320.
- Bean, J. P., & Eaton, S. B. (2000). A psychological model of college student retention. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 48–61). Nashville, TN: Vanderbilt University Press.
- Beck, L., & Ajzen, I. (1991). Predicting dishonest actions using the theory of planned behavior. *Journal of Research in Personality*, 25(3), 285–301.
- Belfield, C. R., & Bailey, T. R. (2011). The Benefits of Attending Community College: A Review of the Evidence. *Community College Review*, 39(1), 46–68.
- Bempechat, J., Graham, S. E., & Jimenez, N. V. (1999). The Socialization of Achievement in Poor and Minority Students A Comparative Study. *Journal of Cross-Cultural Psychology*, 30(2), 139–158.
- Bender, L. W. (1991). Minority transfer: A national and state legislative perspective. *New Directions for Community Colleges*, (74), 69–75.
- Berger, J. B. (2000). Organizational Behavior at Colleges and Student Outcomes: A New Perspective on College Impact. *The Review of Higher Education*, 23(2), 177–198.
- Berger, J. B., & Milem, J. F. (2000). Organizational behavior in higher education and student outcomes. In J. . Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 15, pp. 268–338). Bronx, NY: Agathon Press.

- Bernstein, A. (1986). The devaluation of transfer: Current explanations and possible causes. *New Directions for Community Colleges, 1986(54)*, 31–40.
- Bers, T. H., & Smith, K. E. (1991). Persistence of Community College Students: The Influence of Student Intent and Academic and Social Integration. *Research in Higher Education, 32(5)*, 539–56.
- Bettinger, E. P., & Long, B. T. (2005). Remediation at the community college: Student participation and outcomes. *New Directions for Community Colleges, 2005(129)*, 17–26.
- Blau, J. R. (1999). Two-Year College Transfer Rates of Black American Students. *Community College Journal of Research and Practice, 23(5)*, 525–31.
- Blau, P. M., & Duncan, O. D. (1967). *The American Occupational Structure*. John Wiley & Sons, Inc.
- Bocchino, G. P. (2009). *Community college grief counseling services : a national survey of grief counseling services for counselors at community colleges in the United States*. University of Rochester: ProQuest, UMI Dissertation Publishing.
- Bohner, G., & Wanke, M. (2002). *Attitudes and Attitude Change* (1st ed.). New York, NY: Psychology Press.
- Bowman, P. J. (2006). Role Strain and Adaptation Issues in the Strength-Based Model Diversity, Multilevel, and Life-Span Considerations. *The Counseling Psychologist, 34(1)*, 118–133.
- Boxer, P., Goldstein, S. E., DeLorenzo, T., Savoy, S., & Mercado, I. (2011). Educational aspiration–expectation discrepancies: Relation to socioeconomic and academic risk-related factors. *Journal of Adolescence, 34(4)*, 609–617.
- Bracken, B. A., & Lamprecht, M. S. (2003). Positive self-concept: An equal opportunity construct. *School Psychology Quarterly, 18(2)*, 103–121.

- Braxton, J. M., Sullivan, A. V., & Johnson, Jr., R. M. (1997). Appraising Tinto's Theory of College Student Departure. In J. . Smart (Ed.), *Higher Education: Handbook of Theory and Research* (pp. 107–165). New York, New York: Agathon Press.
- Breneman, D. W. (2012, February 19). National Goals for College Education Depend on the States. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/National-Goals-for-College/130858/>
- Brim, O. G. (1966). Socialization after childhood: Two essays. In *Socialization through the life cycl* (pp. 1–49). New York, New York: Wiley Press.
- Brint, S. ., & Karabel, J. (1989). *The diverted dream: community colleges and the promise of educational opportunity in America, 1900-1985*. New York: Oxford University Press.
- Brubacher, J. S., & Rudy, W. (1997). *Higher education in transition: a history of American colleges and universities*. New Brunswick, NJ: Transaction Publishers.
- Byrne, B. M. (2011). *Structural Equation Modeling with Mplus: Basic Concepts, Applications, and Programming* (1st ed.). Routledge Academic.
- Cabrera, A. F., Burkum, K. R., & La Nasa, S. M. (2005). Pathways to a four-year degree: Determinants of transfer and degree completion. In A. Seidman (Ed.), *College student retention: A formula for student success* (pp. 155–214). ACE/Prager Series on Higher Education.
- Calcagno, J. C., Bailey, T., Jenkins, D., Kienzl, G., & Leinbach, T. (2008). Community College Student Success: What Institutional Characteristics Make a Difference? *Economics of Education Review*, 27(6), 632–645.

- Calcagno, J. C., Crosta, P., Bailey, T. R., & Jenkins, D. (2007). Stepping stones to a degree: The impact of enrollment pathways and milestones on community college student outcomes. *Research in Higher Education, 48*(7), 775–802.
- Callahan, M., & Chumney, D. (2009). “ Write Like College”: How Remedial Writing Courses at a Community College and a Research University Position “ At-Risk” Students in the Field of Higher Education. *The Teachers College Record, 111*(7), 1619–1664.
- Carter, D. F. (2002). College Students’ Degree Aspirations: A Theoretical Model and Literature Review With a Focus on African American and Latino Students. In J. C. Smart (Ed.), *Higher Education: Handbook of Theory and Research* (Vol. 17, pp. 129–171). Bronx, NY: Agathon Press.
- Cejda, B. D., & Kaylor, A. J. (2001). Early transfer: A case study of traditional-aged community college students. *Community College Journal of Research and Practice, 25*(8), 621–638.
- Chavous, T. M. (2005). An Intergroup Contact-Theory Framework for Evaluating Racial Climate on Predominantly White College Campuses. *American Journal of Community Psychology, 36*(3-4), 239–257.
- Chemers, M. M., Hu, L., & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology, 93*(1), 55–64.
- Clark, B. R. (1960). The “cooling-out” function in higher education. *The American Journal of Sociology, 65*(6), 569–576.
- Clark, B. R. (1980). The “Cooling Out” Function Revisited. *New Directions for Community Colleges*. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ237128>

- Cohen, A. M., & Brawer, F. B. (2008). *The American community college* (5th ed.). San Francisco, CA: Jossey-Bass.
- Cokley, K. (2000). An investigation of academic self-concept and its relationship to academic achievement in African American college students. *Journal of Black Psychology, 26*(2), 148.
- Conner, M., & Armitage, C. J. (1998). Extending the Theory of Planned Behavior: A Review and Avenues for Further Research. *Journal of Applied Social Psychology, 28*(15), 1429–1464.
- Constantine, M. G., & Blackmon, S. M. (2002). Black Adolescents' Racial Socialization Experiences Their Relations to Home, School, and Peer Self-Esteem. *Journal of Black Studies, 32*(3), 322–335.
- Conway, K. M. (2010). Educational Aspirations in an Urban Community College: Differences Between Immigrant and Native Student Groups. *Community College Review, 37*(3), 209–242.
- Coser, L. A. (1975). Presidential Address: Two Methods in Search of a Substance. *American Sociological Review, 40*(6), 691–700.
- Crisp, G., & Nora, A. (2010). Hispanic Student Success: Factors Influencing the Persistence and Transfer Decisions of Latino Community College Students Enrolled in Developmental Education. *Research in Higher Education, 51*(2), 175–194.
- Crockett, S. A. (2012). A Five-Step Guide to Conducting SEM Analysis in Counseling Research. *Counseling Outcome Research and Evaluation, 3*(1), 30–47.
- Crowne, D. P., & Marlowe, D. (1967). *The approval motive*. Wiley.

- D'Augelli, A. R., & Hershberger, S. L. (1993). African American Undergraduates on a Predominantly White Campus: Academic Factors, Social Networks, and Campus Climate. *The Journal of Negro Education*, 62(1), 67–81.
- Davis, L. E., Ajzen, I., Saunders, J., & Williams, T. (2002a). The decision of African American students to complete high school: An application of the theory of planned behavior. *Journal of Educational Psychology*, 94(4), 810–819.
- Davis, L. E., Ajzen, I., Saunders, J., & Williams, T. (2002b). The Decision of African American Students To Complete High School: An Application of the Theory of Planned Behavior. *Journal of Educational Psychology*, 94(4), 810–19.
- Davis, L. E., Johnson, S., Cribbs, J. M., & Saunders, J. (2002). A Brief Report: Factors Influencing African American Youth Decisions to Stay in School. *Journal of Adolescent Research*, 17(3), 223–34.
- Davis, L. E., Saunders, J., Johnson, S., Miller-Cribbs, J., Williams, T., & Wexler, S. (2003). Predicting Positive Academic Intention Among African American Males and Females. *Journal of Applied Social Psychology*, 33(11), 2306–2326.
- Deil-Amen, R. (n.d.). Socio-academic integrative moments: Rethinking academic and social integration among two-year college students in career-related programs. *The Journal of Higher Education*, in press.
- Deil-Amen, R., & DeLuca, S. (2010). The Underserved Third: How Our Educational Structures Populate an Educational Underclass. *Journal of Education for Students Placed at Risk*, 15(1), 27–50.
- Dey, E. L. (1997). Undergraduate Political Attitudes. Peer Influence in Changing Social Contexts. *Journal of Higher Education*, 68(4), 398–413.

- Dimitrov, D. M. (2006). Comparing groups on latent variables: A structural equation modeling approach. *Work: A Journal of Prevention, Assessment and Rehabilitation*, 26(4), 429–436.
- Dougherty, K. J. (2001). *The Contradictory College: The Conflict Origins, Impacts, and Futures of the Community College*. State University of New York Press.
- Dougherty, K. J., & Kienzl, G. (2006). It's not enough to get through the open door: Inequalities by social background in transfer from community colleges to four-year colleges. *The Teachers College Record*, 108(3), 452–487.
- Dowd, A. C. (2003). From Access to Outcome Equity: Revitalizing the Democratic Mission of the Community College. *The ANNALS of the American Academy of Political and Social Science*, 586(1), 92–119.
- Dowd, A. C. (2007). Community colleges as gateways and gatekeepers: Moving beyond the access “saga” toward outcome equity. *Harvard Educational Review*, 77(4), 407–419.
- Dowd, A. C., & Melguizo, T. (2008). Socioeconomic Stratification of Community College Transfer Access in the 1980s and 1990s: Evidence from HS&B and NELS. *The Review of Higher Education*, 31(4), 377–400.
- Doyle, W. R. (2009). Impact of Increased Academic Intensity on Transfer Rates: An Application of Matching Estimators to Student-Unit Record Data. *Research in Higher Education*, 50(1), 52–72.
- Durkheim, É. (1951). *Suicide: A Study in Sociology*. Free Press.
- Eagan, K. M., & Jaeger, A. J. (2009). Effects of exposure to part-time faculty on community college transfer. *Research in Higher Education*, 50(2), 168–188.

- Eaton, J. S. (1988). Minorities, Transfer, and Higher Education. *Peabody Journal of Education*, 66(1), 58–70.
- Ellis, J. E. (n.d.). *The college going beliefs and students in a pre-college program: An application of the theory of planned behavior. (Unpublished doctoral dissertation)*. Ann Arbor, MI: University of Michigan.
- Endo, J. J., & Harpel, R. L. (1982). The effect of student-faculty interaction on students' educational outcomes. *Research in Higher Education*, 16(2), 115–138.
- Feather, N. T. (Ed.). (1982). *Expectations and actions: Expectancy-value models in psychology*. Lawrence Erlbaum Assoc Inc.
- Feather, N. T. (1992). Values, Valences, Expectations, and Actions. *Journal of Social Issues*, 48(2), 109–124.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Addison-Wesley Pub (Sd).
- Fishbein, M., & Ajzen, I. (2009). *Predicting and Changing Behavior: The Reasoned Action Approach* (1st ed.). Psychology Press.
- Gaitan, C. D. (2012). *Creating a College Culture for Latino Students: Successful Programs, Practices, and Strategies*. SAGE.
- Goldhaber, D., Gross, B., & DeBurgomaster, S. (2008). *Community colleges and higher education. How do state transfer and articulation policies impact student pathways (CRPE working paper #2008-4)*. University of Washington: Center on Reinventing Public Education.
- Goldrick-Rab, S., & Pfeffer, F. T. (2009). Beyond access: Explaining Socioeconomic differences in college transfer. *Sociology of Education*, 82(2), 101.

- Graham, S. W., & Gisi, S. L. (2000). The Effects of Instructional Climate and Student Affairs Services on College Outcomes and Satisfaction. *Journal of College Student Development*, 41(3), 279–91.
- Grubb, W. (1991). The Decline of Community College Transfer Rates: Evidence from National Longitudinal Surveys. *The Journal of Higher Education*, 62(2), 194–222.
- Hagedorn, L. S. (2010). The Pursuit of Student Success: The Directions and Challenges Facing Community Colleges. In J. C. Smart (Ed.), *Higher Education: Handbook of Theory and Research* (Vol. 25, pp. 181–218).
- Hagedorn, L. S., Chi, W., Cepeda, R. M., & McLain, M. (2006). An investigation of Critical Mass: The Role of Latino Representation in the Success of Urban Community College Students. *Research in Higher Education*, 48(1), 73–91.
- Hagedorn, L. S., Cypers, S., & Lester, J. (2008). Looking in the Review Mirror: Factors Affecting Transfer for Urban Community College Students. *Community College Journal of Research and Practice*, 32(9), 643.
- Hagedorn, L. S., & Lester, J. (2006). Hispanic Community College Students and the Transfer Game: Strikes, Misses, and Grand Slam Experiences. *Community College Journal of Research & Practice*, 30(10), 827–853.
- Haller, A. O., & Portes, A. (1973). Status Attainment Processes. *Sociology of Education*, 46(1), 51–91.
- Hankins, M., French, D., & Horne, R. (2000). Statistical guidelines for studies of the theory of reasoned action and the theory of planned behaviour. *Psychology & Health*, 15(2), 151–161. doi:10.1080/08870440008400297

- Hanson, N. R. (1971). *Observation and explanation: a guide to philosophy of science*. Harper & Row.
- Hebel, S. (2000). States Without Affirmative Action Focus on Community-College Transfers. *Chronicle of Higher Education*, p. A35.
- Holmstrom, E. I., & Bisconti, A. S. (1974). *Transfers from Junior to Senior Colleges*. American Council on Education, Office of Research. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED093422>
- Horan, P. M. (1978). Is Status Attainment Research Atheoretical? *American Sociological Review*, 43(4), 534–541.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- Hurtado, S., & Carter, D. F. (1997). Effects of College Transition and Perceptions of the Campus Racial Climate on Latino College Students' Sense of Belonging. *Sociology of Education*, 70(4), 324–345.
- Hurtado, S., Cuellar, M., & Guillermo-Wann, C. (2011). Quantitative measures of students' sense of validation: Advancing the study of diverse learning environments. *Enrollment Management Journal*.
- Hurtado, S., & Ponjuan, L. (2005). Latino Educational Outcomes and the Campus Climate. *Journal of Hispanic Higher Education*.

- Ingram, K. L., Cope, J. G., Harju, B. L., & Wuensch, K. L. (2000). Applying to graduate school: A test of the theory of planned behavior. *Journal of Social Behavior and Personality*, *15*(2), 215–226.
- Jacob, B. A., & Wilder, T. (2010). *Educational Expectations and Attainment* (Working Paper No. 15683). National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w15683>
- Jöreskog, K. G. (1971). Simultaneous factor analysis in several populations. *Psychometrika*, *36*(4), 409–426.
- Karabel, J. (1974). Protecting the Portals: Class and the Community College. *Social Policy*, *5*(1), 12–19.
- Karabel, J. (1986). Community Colleges and Social Stratification. *New Directions for Community Colleges*, *14*(2), 13–30.
- Karabel, J., & Astin, A. W. (1975). Social Class, Academic Ability, and College “Quality.” *Social Forces*, *53*(3), 381–398.
- Karabel, J., & Halsey, A. . (1977). Community colleges and social stratification: Submerged class conflict in American higher education. In *Power and ideology in education* (pp. 232–253). New York: Oxford University Press.
- Karp, M., Hughes, K., & O’Gara, L. (2010). An exploration of Tinto’s integration framework for community college students. *Journal of College Student Retention: Research, Theory and Practice*, *12*(1), 69–86.
- Kerckhoff, A. C. (1976). The Status Attainment Process: Socialization or Allocation? *Social Forces*, *55*(2), 368–381.

- Kerckhoff, A. C. (1984). The Current State of Social Mobility Research. *The Sociological Quarterly*, 25(2), 139–153.
- Kerckhoff, A. C. (1995). Institutional Arrangements and Stratification Processes in Industrial Societies. *Annual Review of Sociology*, 21, 323–347.
- Kerckhoff, A. C., & Campbell, R. T. (1977a). Black-White Differences in the Educational Attainment Process. *Sociology of Education*, 50(1), 15–27.
- Kerckhoff, A. C., & Campbell, R. T. (1977b). Race and Social Status Differences in the Explanation of Educational Ambition. *Social Forces*, 55(3), 701–714.
- Kezar, A. (2006). To Use or Not Use Theory: Is That The Question? In J. C. Smart (Ed.), *Higher Education: Handbook of Theory and Research* (Vol. 21, pp. 283–344).
- Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling*. Guilford Press.
- Knoell, D. M., & Medsker, L. L. (1965). *From Junior to Senior College: A National Study of the Transfer Student*. Published for Joint Committee on Junior and Senior Colleges by American Council on Education.
- Knottnerus, J. D. (1987). Status Attainment Research and its Image of Society. *American Sociological Review*, 52(1), 113–121.
- Kohlberg, L. (1976). Moral stages and moralization: The cognitive-developmental approach. In T. Likona (Ed.), *Moral development and behavior*. New York: Hold, Rinehart, & Winston.
- Kolesnikova, N. A. (2010). Community Colleges and Economic Mobility. *Federal Reserve Bank of St. Louis Review*, 92(1), 27–53.
- Kraemer, B. A. (1995). Factors affecting Hispanic student transfer behavior. *Research in Higher Education*, 36(3), 303–322.

- Kuh, G. D., & Hu, S. (2001). The effects of student-faculty interaction in the 1990s. *Review of Higher Education, 24*(3), 309–332.
- Lampton, M. A. (1993). Student-faculty informal interaction and the effect on college student outcomes: A review of the literature. *Adolescence, 28*(112).
- Lee, V. E., & Frank, K. A. (1990). Students' Characteristics that Facilitate the Transfer from Two-Year to Four-Year Colleges. *Sociology of Education, 63*(3), 178–193.
- Lei, P.-W., & Wu, Q. (2007). Introduction to Structural Equation Modeling: Issues and Practical Considerations. *Educational Measurement: Issues and Practice, 26*(3), 33–43.
- Leinbach, T., & Jenkins, D. (2008). Using Longitudinal Data to Increase Community College Student Success: A Guide to Measuring Milestone and Momentum Point Attainment. CCRC Research Tools No. 2. *Community College Research Center, Columbia University, 24*.
- Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. M. Hunt (Ed.), *Personality and the behavior disorders* (Vol. 1, pp. 333–378). New York, NY: Ronald Press.
- Lewin, K., Lippitt, R., & K, R. (1939). Patterns of aggressive behavior in experimentally created “social climates.” *The Journal of Social Psychology, 10*, 271–299.
- Long, B. T., & Kurlaender, M. (2009). Do Community Colleges Provide a Viable Pathway to a Baccalaureate Degree? *Educational Evaluation and Policy Analysis, 31*(1), 30.
- Lundberg, C. A., & Schreiner, L. A. (2004). Quality and frequency of faculty-student interaction as predictors of learning. *Journal of College Student Development, 45*(5), 549–565.

- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*(2), 130–149. doi:10.1037/1082-989X.1.2.130
- Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A Comparison of the Theory of Planned Behavior and the Theory of Reasoned Action. *Personality and Social Psychology Bulletin, 18*(1), 3–9.
- Mayhew, M. J., Hubbard, S. M., Finelli, C. J., Harding, T. S., & Carpenter, D. D. (2009). Using Structural Equation Modeling to Validate the Theory of Planned Behavior as a Model for Predicting Student Cheating. *Review of Higher Education, 32*(4), 441–468.
- McLendon, M. K., Tuchmayer, J. B., & Park, T. J. (2009). State Policy Climates for College Student Success: An Analysis of State Policy Documents Pertaining to College Persistence and Completion. *Journal of College Student Retention: Research, Theory and Practice, 11*(1), 33–56.
- McMahon, S. D., Wernsman, J., & Rose, D. S. (2009). The Relation of Classroom Environment and School Belonging to Academic Self-Efficacy among Urban Fourth-and Fifth-Grade Students. *The Elementary School Journal, 109*(3), 267–281.
- Melguizo, T. (2009). Are Community Colleges an Alternative Path for Hispanic Students to Attain a Bachelor's Degree? *Teachers College Record, 111*(1), 90–123.
- Merisotis, J. P., & Phipps, R. A. (2000). Remedial Education in Colleges and Universities: What's Really Going On? *The Review of Higher Education, 24*(1), 67–85.
- Montaño, D. E., & Kasprzyk, D. (2008). Theory of Reasoned Action, Theory of Planned Behavior, and the Integrated Behavioral Model. In K. Glanz, B. B. Rimer, & K.

- Viswanath (Eds.), *Health Behavior and Health Education: Theory, Reach, and Practice* (4th ed., pp. 67–96). San Francisco, CA: Jossey-Bass.
- Moore, C., & Shulock, N. (2009). *Student progress toward degree completion: Lessons learned from the research literature*. The Institute for Higher Education and Policy: California State University, Sacramento.
- Moore, C., Shulock, N., & Offenstien, J. (2009). *Steps to success: Analyzing miles achievement to improve community college student outcomes*. The Institute for Higher Education and Policy: California State University, Sacramento.
- Morgan, S. L. (2006). Expectations and aspiraitons. In (G. Ritzer, Ed.)*The Blackwell Encyclopedia of Sociology*.
- Murnane, R. J., & Willett, J. B. (2010). *Methods Matter: Improving Causal Inference in Educational and Social Science Research* (1st ed.). Oxford University Press, USA.
- NCES. (2001). *Community College Transfer Rates to 4-year Institutions Using Alternative Definitions of Transfer* (No. NCES 2001-197). U.S. Department of Education.
- NCES. (2003). *Community college students: Goals, academic preparation, and outcomes* (No. NCES 2003-164). U.S. Department of Education.
- NCES. (2008). *Community Colleges: Special Supplement to The Condition of Education 2008* (No. NCES 2008-033). U.S. Department of Education.
- NCES. (2013). *2011–12 National Postsecondary Student Aid Study (NPSAS:12) Price Estimates for Attending Postsecondary Education Institutions* (No. NCES 2014-166). U.S. Department of Education.

- Nichols, A. H. (2011). *Developing 20/20 Vision on the 2020 Degree Attainment Goal: The Threat of Income-Based Inequality in Education*. Washington, D.C.: The Pell Institute for the Study of Opportunity in Higher Education.
- Nora, A., & Rendón, L. I. (1990). Determinants of predisposition to transfer among community college students: A structural model. *Research in Higher Education, 31*(3), 235–255.
- Norman, P. (2011). The theory of planned behavior and binge drinking among undergraduate students: Assessing the impact of habit strength. *Addictive Behaviors, 36*(5), 502–507.
- Notani, A. S. (1998). Moderators of Perceived Behavioral Control's Predictiveness in the Theory of Planned Behavior: A Meta-Analysis. *Journal of Consumer Psychology, 7*(3), 247–271.
- Nulty, D. D. (2008). The Adequacy of Response Rates to Online and Paper Surveys: What Can Be Done? *Assessment & Evaluation in Higher Education, 33*(3), 301–314.
- Otto, L. B., & Haller, A. O. (1979). Evidence for a Social Psychological View of the Status Attainment Process: Four Studies Compared. *Social Forces, 57*(3), 887–914.
- Padgett, R. D., Goodman, K. M., Johnson, M. P., Saichaie, K., Umbach, P. D., & Pascarella, E. T. (2010). The impact of college student socialization, social class, and race on need for cognition. *New Directions for Institutional Research, (145)*, 99–111.
- Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research, 66*(4), 543.
- Parsons, T. (1959). The school class as a social system: Some implications of its function in American society. *Harvard Educational Review, 29*(4), 297–318.
- Pascarella, E. T. (1985). College environmental influences on learning and cognitive development: A critical review and synthesis. In J. . Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 5). Bronx, NY: Agathon Press.

- Pascarella, E. T., & Terenzini, P. T. (2005). *How College Affects Students: A Third Decade of Research* (1st ed.). San Francisco, CA: Jossey-Bass.
- Peng, S. S. (1978). Transfer students in institutions of higher education. *Research in Higher Education*, 8(4), 319–342.
- Perna, L. W., & Thomas, S. L. (2008). Theoretical Perspectives on Student Success: Understanding the Contributions of the Disciplines. *ASHE Higher Education Report*, 34(1), 1–87.
- Picou, J. S., & Carter, T. M. (1976). Significant-Other Influence and Aspirations. *Sociology of Education*, 49(1), 12–22.
- Ponticelli, J. ., & Russ-Eft, D. (2009). Community College Students with Disabilities and Transfer to Four-Year College. *Exceptionality*, 17(3), 164–176.
- Portes, A., & Wilson, K. L. (1976). Black-White Differences in Educational Attainment. *American Sociological Review*, 41(3), 414–431.
- Quigley, M., & Bailey, T. W. (2003). *Community college movement in perspective: Teachers College responds to the Truman Commission*. Lanham, MD: Scarecrow Press.
- Randall, D. M., & Wolff, J. A. (1994). The time interval in the intention-behaviour relationship: Meta-analysis. *British Journal of Social Psychology*, 33(4), 405–418.
- Reid, L. D., & Radhakrishnan, P. (2003). Race Matters: The Relation between Race and General Campus Climate. *Cultural Diversity & Ethnic Minority Psychology*, 9(3), 263–75.
- Rendón, L. I. (1994). Validating culturally diverse students: Toward a new model of learning and student development. *Innovative Higher Education*, 19(1), 33–51.
- Rendón, L. I. (1995). Facilitating Retention and Transfer for First Generation Students in Community Colleges. Retrieved from

<http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED383369>

- Rendón, L. I., & Mathews, T. B. (1989). Success of Community College Students: Current Issues. *Education and Urban Society*, 21(3), 312–27.
- Rendón, L. I., & Valadez, J. R. (1993). Qualitative Indicators of Hispanic Student Transfer. *Community College Review*, 20(4), 27–37.
- Rhodes, R. E., & Courneya, K. S. (2003). Investigating multiple components of attitude, subjective norm, and perceived control: an examination of the theory of planned behaviour in the exercise domain. *The British Journal of Social Psychology / the British Psychological Society*, 42(Pt 1), 129–146.
- Rifkin, T. (1996). Transfer and Articulation Policies: Implications for Practice. *New Directions for Community Colleges*, (96), 77–85.
- Roksa, J. (2006a). Does the Vocational Focus of Community Colleges Hinder Students' Educational Attainment? *Review of Higher Education*, 29(4), 499–526.
- Roksa, J. (2006b). *States, schools, and students: Contextualizing community college outcomes*. (Unpublished doctoral dissertation, Department of Sociology). New York University, New York, New York.
- Roksa, J. (2009). Building Bridges for Student Success: Are Higher Education Articulation Policies Effective? *The Teachers College Record*, 111(10), 2444–2478.
- Roksa, J., & Calcagno, J. C. (2008). *Making The Transition To Four-Year Institutions: Academic Preparation And Transfer*. CCRS Working Paper No. 13. Community College Research Center. Retrieved from

<http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED501683>

- Roksa, J., & Calcagno, J. C. (2010). Catching up in Community Colleges: Academic Preparation and Transfer to Four-Year Institutions. *Teachers College Record*, 112(1), 260–288.
- Roksa, J., & Keith, B. (2008). Credits, time, and attainment: Articulation policies and success after transfer. *Educational Evaluation and Policy Analysis*, 30(3), 236–254.
- Romano, R. M. (2004). “Cooling Out” Revisited: Some Evidence from Survey Research. *Community College Journal of Research and Practice*, 28(4), 311–320.
- Rosenbaum, J. E., Deil-Amen, R., & Person, A. E. (2006). *After Admission: From College Access to College Success*. Russell Sage Foundation.
- Rouse, C. E. (1995). Democratization or Diversion? The Effect of Community Colleges on Educational Attainment. *Journal of Business & Economic Statistics*, 13(2), 217–224.
- Rouse, C. E. (1998). Do Two-Year Colleges Increase Overall Educational Attainment? Evidence from the States. *Journal of Policy Analysis and Management*, 17(4), 595–620.
- Ruiz, A., & Pryor, J. H. (2012). Assessing the climate for transfer at two- and four-year institutions. *College & University*.
- Savalei, V., & Bentler, P. M. (2006). Structural equation modeling. In R. Grover & M. Vriens (Eds.), *The Handbook of Marketing Research: Uses, Misuses, and Future Advances* (pp. 330–364). Thousand Oaks, California: Sage Publications, Inc.
- Schifter, D. E., & Ajzen, I. (1985). Intention, perceived control, and weight loss: An application of the theory of planned behavior. *Journal of Personality and Social Psychology*, 49(3), 843–851.

- Sellers, R. M., Rowley, S., Chavous, T. M., Nicole, J., & Smith, M. A. (1997). Multidimensional Inventory of Black Identity: A preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology, 73*(4), 805–815.
- Sewell, W. H., Haller, A. O., & Portes, A. (1969). The Educational and Early Occupational Attainment Process. *American Sociological Review, 34*(1), 82–92.
- Sewell, W. H., & Hauser, R. M. (1972). Causes and Consequences of Higher Education: Models of the Status Attainment Process. *American Journal of Agricultural Economics, 54*(5), 851–861.
- Sewell, W. H., & Shah, V. P. (1967). Socioeconomic Status, Intelligence, and the Attainment of Higher Education. *Sociology of Education, 40*(1), 1–23.
- Shaw, K. M., & London, H. B. (2001). Culture and Ideology in Keeping Transfer Commitment: Three Community Colleges. *The Review of Higher Education, 25*(1), 91–114.
- Sheeran, P. (2002). Intention—Behavior Relations: A Conceptual and Empirical Review. *European Review of Social Psychology, 12*(1), 1–36.
- Sheldon, C. Q. (2009). Predictors of Transfer to 4-Year, For-Profit Institutions. *Community College Review, 37*(1), 34–51.
- Södurlund, M., & Öhman, N. (2006). Intentions are plural: Toward a multidimensional view of intentions. *European Advances in Consumer Research, 7*, 410–416.
- Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1*(1), 64–85.
- Spady, W. G. (1971). Dropouts from higher education: Toward an empirical model. *Interchange, 2*(3), 38–62.

- Stanton-Salazar, R. D. (1997). A Social Capital Framework for Understanding the Socialization of Racial Minority Children and Youths. *Harvard Educational Review*, 67(1), 1–40.
- Stanton-Salazar, R. D. (2011). A Social Capital Framework for the Study of Institutional Agents and Their Role in the Empowerment of Low-Status Students and Youth. *Youth & Society*, 43(3), 1066–1109.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69(5), 797–811.
- Suarez, A. L. (2003). Forward Transfer: Strengthening the Educational Pipeline for Latino Community College Students. *Community College Journal of Research and Practice*, 27(2), 95–118.
- Surette, B. J. (2001). Transfer from two-year to four-year college: an analysis of gender differences. *Economics of Education Review*, 20(2), 151–163.
- Sutton, S. (1998). Predicting and Explaining Intentions and Behavior: How Well Are We Doing? *Journal of Applied Social Psychology*, 28(15), 1317–1338.
- Terenzini, P. T. (1987, November). *A Review of Selected Theoretical Models of Student Development and Collegiate Impact*. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Baltimore, MD.
- Terenzini, P. T., & Reason, R. D. (2005, November). *Parsing the first year of college: A conceptual framework for studying college impacts*. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Philadelphia, PA.
- The Civil Rights Project/Proyecto Derechos Civiles. (2013, February 13). Making community colleges work for students of color [press release]. UCLA. Retrieved from <http://civilrightsproject.ucla.edu/>

- The White House. (2010). Building American Skills Through Community Colleges. Retrieved October 12, 2010, from <http://www.whitehouse.gov/issues/education/higher-education/building-american-skills-through-community-colleges>
- Thelin, J. R. (2004). *A History of American Higher Education*. Baltimore, MD: The Johns Hopkins University Press.
- Thompson, B. (2004). Exploratory and confirmatory factor analysis: Understanding concepts and applications, 195.
- Thompson, M. D. (2001). Informal Student-Faculty Interaction: Its Relationship to Educational Gains in Science and Mathematics Among Community College Students. *Community College Review*, 29(1), 35.
- Tierney, W. G. (1999). Models of Minority College-Going and Retention: Cultural Integrity versus Cultural Suicide. *The Journal of Negro Education*, 68(1), 80–91.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89.
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition (2nd edition)*. Chicago, IL: University of Chicago Press.
- Titus, M. A. (2004). An Examination of the Influence of Institutional Context on Student Persistence at 4-Year Colleges and Universities: A Multilevel Approach. *Research in Higher Education*, 45(7), 673–699.

- Van den Putte, B., & Hoogstraten, J. (1997). Applying structural equation modeling in the context of the theory of reasoned action: Some problems and solutions. *Structural Equation Modeling: A Multidisciplinary Journal*, 4(4), 320–337.
- Van Gennep, A. (1960). *The rites of passage*. Chicago, IL: University of Chicago Press.
- Vehovar, V., & Manfreda, K. L. (2008). Overview: Online Surveys. In *The SAGE Handbook of Online Research Methods* (pp. 176–194). United Kingdom: SAGE Publications, Ltd.
- Velez, W., & Javalgi, R. G. (1987). Two-Year College to Four-Year College: The Likelihood of Transfer. *American Journal of Education*, 96(1), 81–94.
- Volkwein, J. F., King, M. C., & Terenzini, P. T. (1986). Student-faculty relationships and intellectual growth among transfer students. *The Journal of Higher Education*, 57(4), 413–430.
- Voorhees, R. A. (1987). Toward Building Models of Community College Persistence: A Logit Analysis. *Research in Higher Education*, 26(2), 115–129.
- Wang, X. (2010). *Factors Contributing to the Upward Transfer of Baccalaureate Aspirants Beginnings at Community Colleges*. Madison, WI: University of Wisconsin-Madison.
- Wassmer, R., Moore, C., & Shulock, N. (2004). Effect of Racial/Ethnic Composition on Transfer Rates in Community Colleges: Implications for Policy and Practice. *Research in Higher Education*, 45(6), 651–672.
- Weidman, J. . (1989). Undergraduate socialization: a conceptual approach. In J. . Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 5, pp. 289–322). Bronx, NY: Agathon Press.
- Weidman, J. . (2006). Student Socialization in Higher Education: Organizational Perspectives. In C. C. Conrad & R. C. Serlin (Eds.), *The Sage Handbook for Research in Education:*

- Engaging Ideas and Enriching Inquiry*. Thousand Oaks, California: Sage Publications, Inc.
- Wigfield, A. (1994). Expectancy-value theory of achievement motivation: A developmental perspective. *Educational Psychology Review*, 6(1), 49–78.
- Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary Educational Psychology*, 25(1), 68–81.
- Wigfield, A., Tonks, S., & Klauda, S. L. (2009). Expectancy-Value Theory. In *Handbook Of Motivation At School*. Taylor & Francis.
- Wilson, K. L., & Portes, A. (1975). The Educational Attainment Process: Results from a National Sample. *The American Journal of Sociology*, 81(2), 343–363.
- Zuberi, T., & Bonilla-Silva, E. (2008). *White Logic, White Methods: Racism and Methodology*. United Kingdom: Rowman & Littlefield Publishers, Inc.