


5-2019

Different and the same: a comparison of vertical and lateral transfer students.

Joshua Harris McKee
University of Louisville

Follow this and additional works at: <https://ir.library.louisville.edu/etd>

 Part of the [Academic Advising Commons](#), [Adult and Continuing Education Commons](#), [Adult and Continuing Education Administration Commons](#), [Community College Education Administration Commons](#), [Community College Leadership Commons](#), [Higher Education Commons](#), and the [Higher Education Administration Commons](#)

Recommended Citation

McKee, Joshua Harris, "Different and the same: a comparison of vertical and lateral transfer students." (2019). *Electronic Theses and Dissertations*. Paper 3222.
Retrieved from <https://ir.library.louisville.edu/etd/3222>

This Doctoral Dissertation is brought to you for free and open access by ThinkIR: The University of Louisville's Institutional Repository. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of ThinkIR: The University of Louisville's Institutional Repository. This title appears here courtesy of the author, who has retained all other copyrights. For more information, please contact thinkir@louisville.edu.

DIFFERENT AND THE SAME: A COMPARISON OF VERTICAL AND
LATERAL TRANSFER STUDENTS

By

Joshua Harris McKee
B.A., University of Tennessee, Knoxville, 2012
M.Ed., Clemson University, 2014

A Dissertation
Submitted to the Faculty of the
College of Education and Human Development of the University of Louisville
In Partial Fulfillment of the Requirements
for the Degree of

Doctor of Philosophy
in Counseling and Personnel Services

Department of Counseling and Human Development
University of Louisville
Louisville, KY

May 2019

Copyright 2019 by Joshua Harris McKee

All rights reserved.

DIFFERENT AND THE SAME: A COMPARISON OF VERTICAL AND
LATERAL TRANSFER STUDENTS

By

Joshua Harris McKee
B.A., University of Tennessee, Knoxville, 2012
M.Ed., Clemson University, 2014

A Dissertation Approved on

January 28, 2019

by the following Dissertation Committee:

Dr. Amy Hirschy, Dissertation Chair

Dr. Susan Longerbeam

Dr. Jeffrey Valentine

Dr. Geoffrey Bailey

DEDICATION

This dissertation is dedicated to my parents

Mr. Matthew McKee

and

Mrs. Breggitte McKee

who provided me with invaluable educational opportunities and support, all of which was much needed as a transfer and first-generation college student.

ACKNOWLEDGEMENTS

I would like to thank my dissertation chair and advisor Dr. Amy Hirschy for her guidance and patience through my academic program and dissertation process. Her knowledge of the process, university, and procedures over the past five years has guided me seamlessly throughout my time at the University of Louisville. I would also like to thank Dr. Jeffrey Valentine for his time and frequent meetings to discuss all things statistics and methodology, Dr. Susan Longerbeam for her consistent encouragement and support, and Dr. Geoffrey Bailey for his frequent check-ins and nudges to ensure the process continued. Additionally, I would also like to thank Wesley Partin for allowing me the opportunity to pursue my degree while working at UofL, Dr. Katie Partin for always being available when I had an urgent question or needed advice, and Dr. Angela B. Taylor for providing me the opportunity to complete a doctoral internship in her office and serving as a wonderful mentor. I would also like to thank Dr. Kristin Walker, Dr. Tony Cawthon, Dr. Pamela Havice, and my entire Clemson Family at Clemson University for their continued support and inspiration to pursue my doctorate. And finally, I would like to thank my loving partner, Jacob Arbital, who has supported me from day one throughout this process; his patience and encouragement kept me moving through the tunnel and towards the light at the end.

ABSTRACT

DIFFERENT AND THE SAME: A COMPARISON OF VERTICAL AND LATERAL TRANSFER STUDENTS

Joshua Harris McKee

January 28, 2019

As more students evaluate their choice for higher education, the rate of transfer students continues to grow. The transfer population is often addressed broadly in research studies, and few examine differences among the population. This study was designed to analyze the differences in transfer shock and retention rates between students who transferred from a community college to a four-year institution (vertical) versus those who transferred from one four-year institution to another (lateral). Participants of this study consisted of 1,032 students who transferred to the University of Louisville during the fall 2014, 2015, and 2016 semesters. Results indicated, when controlling for high school GPA and ACT score, vertical and lateral transfers both experienced transfer shock, but vertical transfers experienced a larger drop in GPA. Results also indicated type of transfer institution was not a significant predictor in first to second semester or second to third semester retention rates. However, both vertical and lateral transfers were retained at approximately the same rate from first to second semester, but vertical transfers were retained at higher rates overall.

TABLE OF CONTENTS

	PAGE
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
LIST OF TABLES	x
LIST OF FIGURES	xi
INTRODUCTION	1
Theoretical Perspective	2
Campus Environment Theory	2
Institutional Mattering	3
Institutional Engagement	4
Retention & Persistence	4
Problem Statement	5
Significance of Study	7
Additions to Higher Education	8
Research Questions & Hypotheses	9
Delimitations	10
Conceptual Model	10
Definition of Terms	11
REVIEW OF LITERATURE	13
Theoretical Framework	13
Transition Theory	14

Campus Environment Theory.....	16
Student Departure & Involvement.....	18
Summary.....	20
Literature Review.....	21
Benefits of Higher Education in the U.S.....	21
Shaping Higher Education in the U.S.....	23
Future of Higher Education in the U.S.....	24
Transfer Process.....	25
Transfer in Kentucky.....	27
Transfer Population.....	28
Transfer Issues.....	29
Transfer Shock.....	29
Persistence and Retention.....	31
Financial Aid.....	34
Conclusion.....	36
METHODS AND MATERIALS.....	37
Data Sources & Collection Procedures.....	37
Institutional Setting.....	37
Population & Sample.....	39
Data Collection.....	40
Research Questions & Analyses.....	40
Procedures.....	41
Variables.....	41

Analyses	42
RM ANOVA	43
Ordinary Least Squares Regression	44
Limitations	48
RESULTS	51
Introduction	51
Sample Size	51
Sample Demographics	52
Results	55
Research Question 1	55
Research Question 2	57
Analysis one	57
Analysis two	61
Analysis three	64
Analysis four	67
Summary	70
SUMMARY AND CONCLUSIONS	72
Discussion	73
Transfer Shock	74
Retention	75
Recommendations for Policy and Practice	79
Recommendations for Future Research	84
Conclusion	86

REFERENCES.....	88
CURRICULUM VITAE.....	98

LIST OF TABLES

TABLES

1. Background, Independent, and Dependent Variables	42
2. Research Question 1 Variables and Analysis.....	44
3. Research Question 2 Variables and Analyses.....	47
4. Descriptive Statistics of Sample Demographics.....	53
5. Descriptive Statistics of Academic Achievement.....	54
6. Correlations of Academic & Retention Variables.....	54
7. Means and Standard Deviations of Transfer Shock.....	55
8. Transfer Shock RM ANOVA Results.....	56
9. Cross-tabulation: Retention to Semester Two – Part 1.....	58
10. Summary of OLS Regression for Variables Predicting Second Semester Retention – Part 1.....	60
11. Cross-tabulation: Retention to Semester Two – Part 2.....	61
12. Summary of OLS Regression for Variables Predicting Second Semester Retention – Part 2.....	63
13. Cross-tabulation: Overall Retention – Part 1.....	64
14. Summary of OLS Regression for Variables Predicting Overall Retention – Part 1.....	66
15. Cross-tabulation: Overall Retention – Part 2.....	67

16. Summary of OLS Regression for Variables Predicting	
Overall Retention – Part 2.....	69
17. Overview of Results.....	71

LIST OF FIGURES

FIGURES

1. Conceptual Model.....	11
2. Transfer Shock (High school GPA and ACT score used as control variables)	56

CHAPTER I

INTRODUCTION

The landscape of higher education is rapidly changing. College students now have access to more technology than ever before, which means quicker and more responsive access to information about different postsecondary institutions. As college tuition continues to rise, affordability remains a top concern for many students and parents when considering which type of higher education institution to attend. Students have access to information about tuition, scholarships, housing, student organizations, and more at their fingertips. With vast amounts of information available twenty-four-seven, students can re-evaluate their college selection choice at various points in their educational journey and make adjustments when necessary.

Transfer students are a unique population on college campuses that are frequently forgotten or neglected; these students are often not counted by institutions or the federal government in retention and graduation rates, thereby making it difficult to track persistence and progress towards degree completion. There is much research on transfer students as a whole and less on the different types of transfers despite a wide variety of demographics, and the needs of the transfer population are often addressed broadly rather than focusing on the unique demographics of the population (Rhine, Milligan, & Nelson, 2000). Furthermore, Duggan and Pickering (2008) found barriers to persistence differed between freshmen, sophomore, and upper-level transfer students, suggesting transfers should be addressed more specifically rather than broadly as a whole population. Transfers can be assigned to many categories, including vertical transfers who transfer from a two-year institution to a four-year institution (Peng & Bailey, 1977), lateral

transfers who transfer from one two-year/four-year institution to another two-year/four-year institution (Borden, 2004), reverse transfers who transfer from a four-year institution to a two-year institution (Kirk-Kuwayne & Kirk-Kuwayne, 2007), and swirl transfers who attend multiple types of institutions (Kirk-Kuwayne & Kirk-Kuwayne, 2007). Partly due to rapidly increasing articulation agreements, much of the current literature and research focuses on vertical transfers, and a minority of studies have examined how lateral transfer students experience similar academic and engagement issues (Kirk-Kuwaye & Kirk-Kuwaye, 2007).

Theoretical Perspective

The presented study was conducted from a lens incorporating multiple student development theories. Theories incorporating aspects of mattering, transitions, student involvement, persistence, and student departure all served as a theoretical base.

Campus Environment Theory

Strange and Banning (2015) are known for their work on designing educational environments that foster student learning, success, and development. One of the roles of an institution of higher education is to help students solve adjustment issues to succeed and support students enough to reach a point of readiness where they can benefit from the educational experience (Strange & Banning, 2015). Furthermore, “institutions themselves bear responsibility for the design and creation of campus environments, arranged appropriately or otherwise for meeting educational purposes” (Strange & Banning, 2015, p. 2). It is important to understand the physical condition, collective characteristics of inhabitants, organizational structures, and the collective perceptions or social constructs when designing effective human environments. If the campus

environment is not conducive to learning, retention, and persistence toward degree completion, students may not fully develop a sense of belonging or mattering, leading them to transfer to another postsecondary institution.

Institutional Mattering

During transitions, a student's sense of mattering to the institution can affect their academic performance. Adult developmental theorist Nancy Schlossberg studied how mattering affects college student development, in addition to her work on transitions. When individuals take on new and uncertain roles, they can experience feelings of marginality (Patton, Renn, Guido, & Quaye, 2016). According to Schlossberg (1989), when individuals experience marginality they have a sense of not fitting in, which can lead to everything from irritability to depression, and members of marginalized groups can experience marginality as a permanent feeling. Schlossberg (1989) defined mattering as one's perception that they are important to someone else.

According to Rayle and Chung (2007), "mattering is the experience of others depending on us, being interested in us, and being concerned with our fate" (p. 22). In transition from one institution to another, first-year college students at their new institution can feel marginal and that they do not make a difference or matter to their college or university (Rayle & Chung, 2007). Additionally, Rayle and Chung (2007) indicate, "Schlossberg suggested that it is during such transitions that individuals need to perceive that they matter to others" (p. 22). If students feel as if they matter to the institution and others during their transition, they may be retained by the institution and persist on to graduation.

Institutional Engagement

A student's level of involvement and engagement with their institution can greatly impact their success or failure at the institution. According to Rayle and Chung (2007), "Astin's (1977, 1985) theory of involvement stated that the more involved students are within their respective colleges, the greater the likelihood of those student persisting in college" (p. 24). Furthermore, "Tinto (1975, 1993) stated that social support allowed college students to become socially integrated and involved in their college academic environments which increased their likelihood of academic persistence and decreased their reported academic stress" (Rayle & Chung, 2007, p. 24). It is imperative for institutional leaders to engage transfer students of all types, as the more students are engaged at institutions, the higher their sense of mattering may become. Increased institutional engagement and mattering may lead to increased academic success and persistence towards graduation.

Retention & Persistence

Retention and persistence are important statistics for all higher education leaders. Both persistence and retention have lasting impacts on college drop-out and degree completion rates. According to the National Student Clearinghouse Research Center (NCS), persistence refers to students who return to any college for continued enrollment in their second year, and retention is referred to as the rate in which students return to the same institution for their second year (NSC, "Snapshot Report," 2015).

For first-time college students, high school GPA and first semester college GPA have been found to be significant predictors of persistence, and, "support services such as tutoring, mentoring, counseling services, early intervention systems, and financial aid

assistance will improve study participants' academic deficiencies and increase persistence beyond the first year" (Stewart, Lim, & Kim, 2015, p. 12). In research that utilized the Beginning Postsecondary Students Longitudinal Study (BPS:04/016), grade point average was shown to have positively influenced transfer and persistence among low-income students at the community college level (Mamiseishvili & Deggs, 2013). In the same study, Mamiseishvili and Deggs (2013) found, "20.7% of students transferred to another institution, with 12.4% transferring to a 4-year and 8.3% to another 2-year institution" (p. 425). Students who transfer to another institution and continue towards degree completion are considered to persist, even if at a different institution.

Persistence and institutional engagement are not separate entities. Milem and Berger (1997) called for a modified model of college student persistence which incorporated aspects of Tinto's (1974, 1993) theory of student departure and Astin's (1977, 1985) theory of involvement. Students who are more involved on campus and engaged with the institution can increase their sense of mattering and may be more likely to persist.

Problem Statement

The transfer population consists of students from many different institutions and backgrounds. One of the primary subpopulations of transfer students are vertical transfers. According to Crisp and Delgado (2014), these students "transfer from a community college to a 4-year institution" (p. 106). Alternatively, lateral transfer students are those that transfer from one four-year institution to another four-year institution (Kirk-Kuwaye & Kirk-Kuwaye, 2007).

There are differences in vertical and lateral transfer populations that have largely gone unexamined. The aim of this study was to examine the relationships among the type of transfer students, as well as various independent variables, and their effect on college retention. Previous studies focused primarily on vertical transfers and variables that predict retention; however, this study focused on both vertical and lateral transfers. In addition to retention, an analysis of transfer shock was completed in order to examine differences between vertical and lateral transfers. The results of this study allow admissions representatives, academic advisors, and retention specialists at institutions of higher education to understand what factors help predict whether a transfer student will persist at the institution. Higher education and student affairs professionals are able to identify students at risk and intervene to help increase chances of their retention.

Several researchers have studied the vertical transfer population (Chrystal, Gansemer-Topf, & Laanan, 2013; Diaz, 1992; Ishitani & McKitrick, 2010; Laanan, Starobin, & Eggleston, 2010; Lee & Frank, 1990; Nolan & Hall, 1978; Townsend & Wilson, 2006; Wang, 2009), and it has often received the bulk of the attention with the rise in higher education enrollment and push towards degree attainment. Conversely, little is known about the lateral transfer population, where studies suggest the population ranges anywhere from roughly 16% (Hossler, Shapiro, Dunder, Ziskin, Chen, Zerquera, & Torres, 2012) to nearly 50% (Kirk-Kuwayne & Kirk-Kuwayne, 2007) of the entire transfer population. A limited number of studies (Bahr, 2012; Li, 2010) have focused on the experiences of lateral transfers as a population. Similarly, researchers Kirk-Kuwayne and Kirk-Kuwayne (2007) are the few who have studied the difference in community college and lateral transfers in the same study.

This study intended to address a dearth in literature by examining differences between vertical and lateral transfer students. Furthermore, this study examined the difference in retention among vertical and lateral transfer students at a large, metropolitan, four-year public research university.

Significance of Study

Understanding the importance of successful transfer is imperative for leaders at institutions of higher education. The cost of attending a four-year institution in the United States has skyrocketed over the last thirty years. According to McGee (2015), “the price of attendance at four-year colleges and universities has risen considerably faster than family income at all levels but especially so for those with the lowest incomes” (p. 47). As the cost of attending a four-year institution continues to rise, many students turn to the community college as a more affordable avenue to earning a baccalaureate degree. Community college enrollment accounts for nearly 40% of all enrollment in higher education within the United States (McFarland et al., 2017). However, Monaghan and Attewell (2015) conclude students who begin at community colleges are less likely to earn a baccalaureate degree than those who begin at four-year institutions. Fully understanding the transfer process for students that transfer from both two-year and four-year institutions will allow universities and colleges to implement programming to smooth the articulation process and increases student persistence towards degree completion.

On a local level in Louisville, Kentucky, Mayor Greg Fisher leads an initiative to add 55,000 more college degree holders (40,000 baccalaureate and 15,000 associate degrees) to the Louisville workforce by the year 2020 (Aubdul-Alim, 2017). The public-

private partnership behind the 55,000 degree initiative is a collaboration among institutions of higher education in the area and primarily targets the nearly 100,000 Louisvillians who have some college credit but no earned degree (WICHE, “Effective Collaboration,” 2014). This study highlights retention differences between vertical and lateral transfer students and provides insight into barriers faced students in the program.

Additions to Higher Education Research

This study provides higher education administrators and student affairs practitioners with data comparing the differences in college retention among vertical and lateral transfer students. Additionally, this study demonstrates how the relative influence of other factors such as gender, race/ethnicity, transfer credits earned, residency, transfer GPA, and institutional GPA impact transfer student retention. Regarding community college student persistence toward a degree, some researchers conclude, “a student’s chances of earning a baccalaureate degree are diminished by beginning at a community college” (Allen, Smith, & Muehleck, 2014, p. 353). Conversely, little is known about the persistence and retention of those who start at a four-year institution and transfer to another four-year institution. Many studies (Lee, Mackie-Lewis, & Marks, 1993; Nuñez & Yoshimi, 2017; Wang, 2009) have focused on the persistence of community college transfer students, but a minority, if any, have attempted to analyze the difference between vertical and lateral transfers. This study fills a void in the literature about lateral transfer students and provides future researchers with a comparison of both vertical and lateral transfers at one institution. The methodology and results of this study can be used to replicate future studies at other institutions of higher education.

Furthermore, this study provides evidence that lateral transfer students require just as much support during the transfer process as vertical transfers. Lateral transfers may assume they know the system more than vertical transfers simply because they have previously attended a four-year institution; however, each four-year institution varies remarkably from the other. Institutions are structured differently and have different processes and guidelines.

Finally, this study provides data that allows admissions professionals to work closely with academic advisors, faculty, and student support staff to identify at-risk transfer students early in the process in hopes of increasing retention among vertical and lateral transfers. According to the results of a study by Duggan and Pickering (2008), there is promise in four-year institutions identifying at-risk transfer students and intervening when necessary. Orientation and mentorship programs may help transfer students assimilate to their new institution and keep them engaged (Flaga, 2006). As an outcome, transfer students will be better supported by the institution and more likely to persist to degree completion.

Research Questions & Hypotheses

Based on current literature and prior research studies, much is known about the experiences of vertical transfer students compared to that of lateral transfer students. Although several factors influencing college persistence and retention, this study aims to examine the relationships among the type of transfer student, as well as various independent variables, and their relationship to college retention. Two primary research questions were addressed in this study. Each research question and its corresponding hypothesis are found below:

1. Do lateral transfer students **suffer less transfer shock** during their first academic semester than vertical transfer students?

H₁: Lateral transfer students will experience **less transfer shock** than vertical transfer students.

2. Do lateral transfer students have a **higher retention rate** than vertical transfer students?

- a. Do students have a higher **first to second semester retention rate**?
- b. Do students have a higher **second to third term retention rate (overall persistence)**?

H₂: Lateral transfer students will have **higher retention rates** than vertical transfer students.

Delimitations

This dissertation research only consists of students who transferred to the University of Louisville, a four-year, large public, primarily nonresidential research university serving approximately 22,000 students in the Commonwealth of Kentucky. The University of Louisville is designated a high transfer-in institution by the Carnegie Classification of Institutions of Higher Education (2017), and the sample of transfer students will be limited to those who entered the institution between 2014 and 2016.

Conceptual Model

This study aimed to determine whether vertical transfer students persisted towards graduation and were retained at the same rate as lateral transfer students. Figure 1 shows the conceptual model that guides this study.

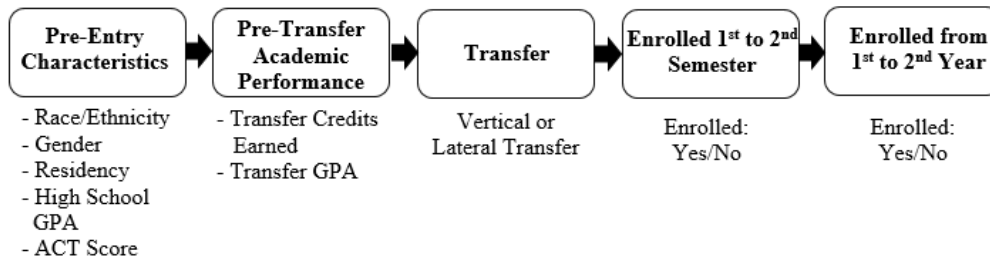


Figure 1. Conceptual Model

Definition of Terms

The following definitions apply to this study:

1. *Community college:* A regionally accredited institution of higher education that awards associate in arts or associate of science degrees as its highest awarded degree (Cohen & Brawer, 2008). The following terms are used interchangeably throughout this dissertation proposal: *community college, two-year institution, and two-year college.*
2. *First-time transfer:* A student is classified as a first-time transfer from the last institution attended, and prior to acceptance by the receiving institution, and a student can only be reported as a first-time transfer once (KY CPE, 2015, “Comprehensive Database”).
3. *Lateral transfer student:* A student who transfers from one four-year institution to another four-year institution (Kirk-Kuwaye & Kirk-Kuwaye, 2007).
4. *Native student:* A student who begins their postsecondary education at a four-year institution and remain at that four-year institution (Townsend & Wilson, 2006).

5. *Persistence*: Continued enrollment working towards graduation (Wessel, Bell, McPherson, Costello, & Jones, 2006).
6. *Receiving institution*: The new institution in which a transfer student transfers to attend (Ignash & Townsend, 2000).
7. *Retention*: The rate in which students return to the same institution for the second year of enrollment (NSC, "Snapshot Report," 2015).
8. *Transfer student*: According to Monroe (2006), a transfer student is typically a student who starts their education at a community college. For the purpose of this study, students who begin college at one four-year college or university and transfer to another four-year college or university are also considered transfer students.
9. *Transfer credit hours*: Credits earned that are transferrable to a student's new institution (Lee & Frank, 1990).
10. *Transfer shock*: The initial drop in academic performance defined by GPA upon transfer (Hills, 1965).
11. *Vertical transfer student*: Students that transfer from a community college or two-year institution to a four-year institution (Crisp & Delgado, 2014).

CHAPTER II

REVIEW OF LITERATURE

Transfer students often receive little attention at four-year colleges and universities for many reasons. First, many of the theories centering on retention and persistence focus on the traditional, eighteen-year-old college student who enrolls at one institution and remains there through graduation (Li, 2010). Second, according to Li (2010), “policymakers have not adequately realized the inefficiency in four-to-four transfer . . . students who transfer from one institution to another may unnecessarily repeat courses, which delays their degree completion and increases the cost of postsecondary education for both individual students and governments” (p. 208). Third, institutional leaders and administrators have mixed views on enrolling lateral transfer students due to no guaranteed articulation agreements and some students’ inability to receive financial aid when transferring (Li, 2010).

Theoretical Framework

When students transfer from one institution to another, the transition itself can impact a student’s success at the new institution. Schlossberg’s transition theory allows researchers and higher education administrators to contextualize the transition experiences of students (Schlossberg, 1981). A transition itself not only affects a student’s success, their affiliation and sense of mattering and belonging at an institution can also contribute towards academic success, according to Schlossberg’s theory on marginality and mattering (Schlossberg, 1989). A successful transition to college can be the result of an environment conducive to success. According to Strange and Banning (2015), college and universities should help students resolve adjustment concerns during

transition and support students to benefit from the education experience. To achieve student success during transition, Strange and Banning (2015) outline how the physical, aggregate, organizational, and socially constructed environments can either facilitate or inhibit student success at the institution. Vincent Tinto's theory of student departure attempts to explain why some students do not persist at their current institution, which can affect their decision to transfer (Tinto, 1988). Schlossberg's theories combined with Tinto's theory provide a comprehensive framework to study persistence differences among lateral and vertical transfer students.

Transition Theory

Nancy Schlossberg (1981) created a theory to contextualize transitions of individuals. The transition model attempts to understand transitions and how individuals cope with them (Schlossberg, 2011). Transitions affect individuals in different ways; some may easily adapt to changes and others may flounder. Several studies (DeVilbiss, 2014; Rall, 2016; Schiavone & Gentry, 2014; Workman, 2015) have used Schlossberg's transition theory as a theoretical framework to understand and contextualize transition experiences.

Nancy Schlossberg's transition theory posits how transitions impact a student and how they respond to transition situations (Schlossberg, 1981). Transferring from one institution to another can be a major life transition, which can have adverse effects on a student's academic performance. Schlossberg indicated the context, type, and impact of the transition all affect the outcome; additionally, personal and demographic characteristics of the student, as well as the psychological resources available, affect the student's self-perceptions and outcomes (Evans et al., 2010). According to Schlossberg

(1981), gender, socioeconomic status, and race/ethnicity all play a role in determining if a student is successful during a transition, which are also known predictors of student persistence.

Transition types. Schlossberg (2011) indicated transition can be anticipated (major life events usually expected), unanticipated (disruptive events that occur unexpectedly), and nonevents (transitions that are expected but fail to occur). A student's decision to transfer to another university or college can be any one of these types. Students may transfer because a different institution has their intended major or after the completion of an associate's degree (expected). Additionally, students may transfer due to performing poorly academically or may need to return closer to home due to a family emergency (disruptive and unexpected). Third, a student may intend to transfer but remain at their home institution (transition that fails to occur).

Four S's. Schlossberg (2011) identified a four S system to coping with transitions. The first S, situation, refers to an individual's situation at time of transition (Schlossberg, 2011). Some individuals may experience outside stress, which can affect their coping with transition. The second S, self, refers to an individual's inner strength to cope with the transition (Schlossberg, 2011). An individual's resiliency and outlook can affect their coping. Support, the third S, refers to the support systems an individual has to cope with transition (Schlossberg, 2011). Social and familial support can help an individual cope during transition. Finally, strategies, the last S, are those coping mechanism one relies on during transition (Schlossberg, 2011). Individuals may have pre-identified coping mechanisms that alleviate stress, thus allowing them to cope with transition much easier.

Campus Environment Theory

According to Strange and Banning (2015), institutions of higher education have two main roles in educating: help students resolve adjustment concerns so they can succeed and support students to reach a point of readiness where they can benefit from the educational experience. To fulfill these roles, Strange and Banning (2015) have identified four components of human environments that contribute to success in an educational context:

“physical condition, design, and layout [physical environment]; collective characteristics of the people who inhabit them [aggregate environment]; organizational structures related to their purposes and goals [organizational environments]; collective perceptions or social constructions of the context and culture of the setting [social constructed environments]” (p. 5).

Physical environments. Physical environments on college campuses not only include the actual classroom buildings, but also the people-made objects such as landscaping and artwork (Strange & Banning, 2015). The physical design of campus and learning spaces can have an impact on student development and experience. For instance, classrooms with bolted down chairs and desks may send the message interaction and collaboration are not valued (Strange & Banning, 2015). Campus decoration and artwork can portray symbols that send strong messages about the values and interests of the institution (Strange & Banning, 2015). To facilitate student development, it is important for institutions to design physical environments that are welcoming, inclusive, functional, societal, flexible, esthetic, reflective, regenerative, distinctive, and sustainable (Strange & Banning, 2015).

Aggregate environments. The character of an institution is partly a function of the dominant subcultures on campus (Strange & Banning, 2015). Institutions which are dominated by a particular subculture or type of student are presumed to reinforce the characteristics of that type (Strange & Banning, 2015). To achieve person-environment congruence, an individual needs to be the same or nearly the same as the dominant type at the institution, and a higher degree of person-environment congruence is predictive of student satisfaction and stability within the environment (Strange & Banning, 2015).

Organizational environments. Complexity, centralization production, efficiency, and morale are all important aspects of organizational environments (Strange & Banning, 2015). It is important for institutional leaders to understand how their structures contribute to the dynamic system and their implications on successful education experiences (Strange & Banning, 2015). Dynamic environments encourage the most student development and complex processes, whereas static environments typically discourage change and innovation (Strange & Banning, 2015).

Socially constructed environments. According to Strange and Banning (2015), “socially constructed models of the environment recognize that a consensus of individuals who perceive and characterize their environment constitutes a measure of environmental press, climate, or culture in a setting” (p. 115). Part of the socially constructed environment is the campus culture; the culture of a campus can define the nature of space and time, as well as the degree in which students interact with staff and faculty (Strange & Banning, 2015). In conclusion, campus organizations, residence halls, and classes and all institutional subcultures that contribute to the socially constructed

environment, which help staff and students make meaning of the college experience (Strange & Banning, 2015).

Student Departure & Involvement

Student departure from higher education can create lasting consequences for the student, as well as the institution. As students leave higher education without completing a degree, they run the risk of having taken out student loans they may not be able to pay back. This financial burden can affect quality of life, as well as employment. Additionally, institutions of higher education feel the effects of drop-outs in the form of missed tuition revenue, as well as decreased retention, persistence, and graduation rates.

In developing a theoretical model to assess dropout behavior, Vincent Tinto (1975) indicated:

“Individuals enter institutions of higher education with a variety of attributes (e.g., sex, race, ability), precollege experiences (e.g., grade-point averages, academic and social attainments), and family backgrounds (e.g., social status attributes, value climates, expectational climates), each of which has direct and indirect impacts upon performance in college . . . Given individual characteristics, prior experiences, and commitments, the model argues that it is the individual's integration into the academic and social systems of the college that most directly relates to his (sic) continuance in that college” (pp. 94-96).

According to Tinto's (1975) model, a variety of individual factors including external impacts, individual characteristics, family background, past education experiences, goal commitment, academic integration, social integration, and institutional commitment can impact student drop-out. In addition to individual factors, institution characteristics such

as type, college quality, student composition, and institutional size may contribute to a student's decisions to drop-out of the institution (Tinto, 1975). Students who drop-out are not retained and may risk ever receiving a degree from an institution of higher education (Tinto, 1975).

Student involvement is an important aspect of development for college students and may contribute to future enrollment and academic success. Alexander Astin (1999) developed a simple and comprehensive student involvement theory. Astin (1999) states, "student involvement refers to the quantity and quality of the physical and psychological energy that students invest in the college experience . . . according to the theory, the greater the student's involvement in college, the greater will be the amount of student learning and personal development" (p. 528). Students who are more involved in college may have a higher likelihood of being retained and persist towards degree completion due to increase academic and social integration. Milem and Berger (1997) concluded early involvement within the first 6 to 7 weeks of a semester are significantly related to whether a student is likely to persist at the institution. Community college students may have a harder time getting involved on campus, whereas their primary encounter with peers and faculty is in the classroom during formal educational activities (Tinto, 2010). On two-year campuses, the classroom becomes the primary place for institutional involvement that can directly impact learning, retention, and persistence towards degree completion (Tinto, 2010). As campuses focus on ways to increase student involvement, involved students may develop a higher sense of mattering to the institution, which may decrease the likelihood of drop-out and increase persistence.

As students are retained by institutions of higher education, they are able to persist towards degree completion. Similarly, Tinto (2010) indicates, “students are more likely to succeed and continue within the institution when they find themselves in settings that hold high expectations for their success, provide needed academic and social support, and frequent feedback about their performance, and actively involve them, especially with other students and faculty, in learning” (p. 73). The active learning component of Tinto’s theory, replicated in a study by Braxton et al. (2000), found active learning and faculty classroom behavior to be an empirically reliable sources that influence social integration, institutional commitment, and departure decisions.

In addition to student involvement, Walton and Cohen (2011) found social belonging interventions to improve academic performance, self-reported health, and well-being of minority students over the course of three years. Walton and Cohen (2011) suggest, “inequality between marginalized and nonmarginalized groups arises not only from structural factors but also from concern about social belonging” (p. 1450). Social belonging may be a side effect of involvement at an institution, and interventions aimed at increased social belonging and involvement may increase persistence rates for subpopulations of students. In general, these theories indicated many factors influence student persistence, retention, and departure, which are all important aspects to students and institutions of higher education.

Summary

When addressing the concept of transferring from one institution to another, it is necessary to consider Nancy Schlossberg’s transition theory and theory of marginality and mattering. Each student who transfers experiences all four s’s during their transition

from one institution to the next. Students transfer for a variety of reasons, which can include pursuing a degree their prior institution did not offer to feeling marginalized without a sense of mattering to their first college or university.

Similarly, when addressing retention among the transfer population, Tinto's theory of student departure is a useful lens. For reasons personal to each transfer student or due to environmental factors, transfer students make the decision to depart their original institution and attend a new college or university. To succeed and be retained after their transition, it is important to develop a sense of mattering to the new institution and stay involved.

Literature Review

To best understand the enrollment at colleges and universities and the transfer process, it is vital to understand the context of the higher education system in the United States. The transfer population is more complex than it appears, as there are several types of transfer students who face their own unique issues. Transfer shock, lack of financial aid and scholarships, and decreased persistence towards graduation are all barriers transfer students face when attaining a degree from an institution of higher education.

Benefits of Higher Education in the U.S.

Higher education attainment has proven to improve the lives of many. According to Hout (2012), "people who pursue more education and achieve it make more money, live healthier lives, divorce less often, and contribute more to the functioning and civility of their communities than less educated people do" (p. 394). Colleges and universities in

the United States allow students to acquire new skills and perspectives that make them better workers, partners, and citizens of their country and world (Hout, 2012).

Higher education attainment in the United States has risen rapidly since 1940. According to the U.S. Census Bureau (2012), in 1940 only 5% of the nation's population age 25 and older held a bachelor's degree, compared to 30% of the nation's population age 25 and older in 2009. In terms of economic advancement and opportunity in the United States, higher education attainment serves as a catalyst. Median earnings for those who hold a bachelor's degree are 77% higher than those who hold a high school diploma (U.S. Census Bureau, 2012). Furthermore, those who obtain advanced degrees beyond the bachelor's degree, median earnings are 31% higher than those who only obtain a bachelor's degree (U.S. Census Bureau, 2012). Obtaining a degree from a college or university in the United States has many benefits, however not all institutions are created equal.

The higher education system in the United States consists of many different colleges and universities with varying types of accreditation. According to the Council for Higher Education Accreditation, there are four types of accreditation: regional, national faith-related, national career-related, and programmatic (Eaton, 2012). Accreditation in the United States holds several roles including assuring quality, providing access to federal and state funds, engendering private sector confidence, and easing transfer (Eaton, 2012). When students consider transferring, the type of accreditation held by their home institution is important because accreditation can impact the transfer process. The University of Louisville holds regional accreditation and only accepts transfer credit from other regionally accredited institutions.

Shaping Higher Education in the U.S.

From its origins, higher education in the United States stems from different tiers. Some of the oldest institutions are now private or public state flagship institutions, known as research universities. According to Labaree (2006), research universities enjoy the most wealth of all types of institutions and offer wide and liberal curricula, but enroll the least number of students in the higher education system. Labree also indicates the Morrill Acts of 1862 and 1890 challenged states to develop land-grant colleges with a primarily vocational mission to be distinguished from the state's flagship campus. Furthermore, junior colleges emerged in the 1920s and later developed into today's community colleges; these campuses are vocational in nature and prepare students to enter the workforce to fill positions that do not require a baccalaureate degree (Labee, 2006). Students who attend community colleges have the option to transfer to a four-year institution to continue their studies as a measure of cost saving.

In 1944, the United States government passed the G.I. Bill to reintegrate nearly 16 million service members by paying for college (Murray, 2008). The G.I. Bill led to massive enrollment growths at institutions around the country. According to an analysis by *The Chronicle of Higher Education*, in the mid-2000s veterans who used the G.I. Bill preferred enrolling at community colleges and for-profit institutions compared to four-year, nonprofit institutions (Field, 2008). As veterans complete associate's degrees from community colleges, they are then able to transfer to a four-year institution and can benefit from seamless transfer policies and articulation agreements.

Future of Higher Education in the U.S.

The landscape of higher education will look much different in the years to come, which may have significant implications for transfer students. As demographics change in the population, campus populations will also change. The Hispanic population in the United States grew by 43% between 2000 and 2010, and 9 in 10 Hispanic students between the ages of 16 and 25 believe a college education is necessary to get ahead in life (McGee, 2015). As the cost of higher education continues to rise, many students will turn to the community college as an avenue to save money, and then transfer to a four-year college or university. Additionally, the United States is nearing the bottom of a long-predicted decline in the number of high school graduates, which means institutional leaders will no longer be able to rely on first-time freshmen to reach enrollment goals, and will be in competition with one another to lure students through the transfer process (McGee, 2015).

Bowen and McPherson (2016) indicate the future of higher education in the United States will depend on current pressing needs facing the industry: reducing time to degree and achieving affordability. Students are no longer taking the traditional four years to graduate with a bachelor's degree for a variety of reasons, including changing enrollment patterns, students dropping or failing and repeating courses, and stopping out (Bowen & McPherson, 2016). When students consider changing enrollment at one institution and transfer to another, they run the risk of losing credits, which can contribute to the increase in time to degree completion. Rising tuition coupled with longer time to degree results in increased student borrowing and debt. Students who fear borrowing large sums of money to attend a four-year institution may choose to attend a community

college to save money; an option more students may begin to choose. If more students begin their college career at a community college, transferring to another institution to finish their degree may be in their best interest. As a larger percentage of students look to transfer, the landscape of higher education must adapt.

According to Zemsky (2006), the third and fastest-growing higher education enrollees, online learners, take one or two courses at a time over the course of many years. Online programs also allow workforce members to acquire new knowledge quickly in their own personal style of learning (Zemsky, 2006). The United States has nearly 51% of all college students studying entirely online (Craig, 2015), and as students realize the potential and cost savings of online education they may turn to online courses as an alternative to earning credit towards the completion of general education requirements before transferring to another institution to take major-specific courses and degree requirements. No matter the route higher education in the United States takes over the coming years, it is apparent changing campus demographics and enrollment patterns will result in educational delivery adaptation.

Transfer Process

To assist students through the transfer process, many states have instituted transfer articulation agreements. These agreements are designed to allow credits earned at community colleges to transfer more easily to a four-year college or university. Prior to the 1980s, articulation agreements were typically drawn by individual institutions, but over time states have become heavily involved in the process (Roksa & Keith, 2008). Transfer articulation agreements can be initiated by individual institutions, state systems

of higher education, and be a formal good-standing agreements between one or two institutions.

Assessing the effectiveness of transfer articulation agreements has proven difficult for a number of reasons. Though research on the effectiveness of articulation agreements is fairly new, the initial results are not promising (Monaghan & Attewell, 2015). There is a dearth of available data on transfer students, as many states only began collecting information on transfers after agreements were in place (Roska & Keith, 2008). In order to assess the effectiveness of transfer articulation agreements, longitudinal data on students before and after the transfer articulation agree went into effect would be necessary (Roska & Keith, 2008). Roska (2009) concludes there are not enough data to adequately assess the effectiveness of transfer articulation agreements. According to Roska (2009), policy leaders need to work on “clearly defining goals of articulation policies and evaluating them accordingly, and developing a consistent set of definitions and measurements of transfer success” (p. 2444). In some cases articulation agreements have been found to be ineffective. Tinto (2006) indicates many low-income students begin their college career at two-year institutions, and articulation agreements do not help low-income students during transfer. More research on articulation agreements is needed to address gaps in effectiveness for various populations, including low-income and lateral transfer students.

The majority of transfer articulation agreements are designed for vertical transfer students (Ignash & Townsend, 2000). Many states do not have transfer articulation agreements for students who wish to transfer laterally from one four-year institution to another (Ignash & Townsend, 2000). The lack of lateral transfer articulation agreements

can result in credits not transferring as direct equivalencies, and can increase time to degree for transfer students. Transfer articulation policies and agreements have historically focused on upward transfer from the community college to the four-year institution, and expanding agreements for lateral transfers may benefit more students.

Transfer in Kentucky

The Commonwealth of Kentucky's governing body, which oversees higher education in the state, is known as the Council for Post-secondary Education (CPE). The higher education system in Kentucky consists of community and technical colleges, four-year public colleges and universities, as well as four-year private independent colleges and universities. The state's community colleges are part of a system known as the Kentucky Community and Technical College System (KCTCS) that reports to CPE.

Kentucky began to focus more seriously on higher education with the passage of the Kentucky Postsecondary Education Improvement Act of 1997, otherwise known as House Bill 1 (Howarth, 2003). A major tenant of House Bill 1 included the creation of a two-year course of general studies which was designed to transfer toward a baccalaureate degree program (Howarth, 2003). Beginning with the 2012-2013 academic year, the Statewide Transfer Committee and Kentucky CPE updated the General Education Transfer Policy and Implementation Guidelines. Under these revisions, "the agreement shall direct that the associate of arts and associate of science coursework meeting the learning outcomes specified shall be accepted for transfer and degree credit, whether earned as individual courses or within block programs" (KY CPE, 2012, "General Education Transfer," p. 2). The updated general education transfer policy sought to remove barriers during the transfer process by allowing credits to seamlessly transfer

between institutions within Kentucky. In return, students would have a smoother transition and be able to persist toward graduation at higher rates.

Transfer Population

College student demographics are constantly changing, as are trends in college attendance. According to Tobolowsky and Cox (2012), nearly 60% of all college students (transfer students) attend more than one institution in their lifetime. In addition, transfer students may co-enroll in two institutions at the same time, reverse transfer or transfer down from a four-year to a two-year, or transfer between institutions multiple times (Tobolowsky & Cox, 2012).

There are several types of transfer students, including vertical, lateral, and reverse transfers. Much focus has been given to the vertical transfers, as they are often identified as academically at risk (Rhine et al., 2000). Conversely, over half of all transfers students are lateral transfers, transferring from one four-year institution to another (Kirk-Kuwaye & Kirk-Kuwaye, 2007). In a conflicting report, a group of researchers indicate only 16.7% of transfer students are lateral transfers (Hossler et al., 2012). The difference in percent of lateral transfer students using national data outlined by the previous studies needs to be further explored.

Historically, vertical transfers were typically less successful academically in high school than those that attended a four-year institution right after high school (Lee & Frank, 1990). Similarly, students that choose to attend a two-year school upon high school graduation may do so to improve study skills (Laanan, Starobin, & Eggleston, 2010). Students also choose to attend a community college to improve their academic performance before transferring to a four-year institution (Chrystal, Gansemer-Topf, &

Laanan, 2013). Townsend and Wilson (2006) indicate community college transfer students often need assistance adjusting to size, culture, and academic rigor of their new institution.

Regarding lateral transfer students, roughly one-fourth of the students transferring from one four-year institution to another four-year institution transfer to a school out-of-state (Hossler et al., 2012). Of lateral transfers that transfer to a public four-year institution, nearly 52% complete a reverse degree, and earn a degree from their previous institution (Hossler et al., 2012). Contrary to the research on vertical transfer students, there are few findings on the transition of lateral transfer students.

Transfer Issues

Transfer students face many issues that native students at colleges and universities do not. Hoyt and Winn (2004) determined transfer students drop out of institutions and have lower GPAs when compared to native students. According to a 2005 study by the U.S. Department of Education, transfer students are at a disadvantage when it comes to completing their bachelor's degree; vertical transfer students take on average 5.4 years to earn a bachelor's degree, compared to 5.1 years for lateral transfers, and 4.4 years for those who do not transfer (Li, 2010). During transition from one institution to another, many transfers experience a phenomenon known as transfer shock, and may lose financial aid or scholarships. Transfer shock and a loss of funding may lead to a decrease in persistence toward graduation and retention for transfer students.

Transfer Shock. The term "transfer shock" was first introduced by Hills (1965) to describe the effects transferring has on grade point average (GPA). Transfer shock is typically defined as the initial drop in GPA when a student transfers from one institution

to another and may be the result of having to adjust from one campus to another (Townsend & Wilson, 2006). Students that transfer from a two-year institution to a four-year institution may expect transfer shock, as they anticipate increases in campus size, class size, and course difficulty (Chrystal et al., 2013). Additionally, inaccurate information and lackluster academic advising may negatively affect academic performance and adjustment (Laanan et al., 2010). Several studies have shown transfer shock to be alleviated after the first academic year, as grades tend to increase after the initial transition (Diaz, 1992; Nolan & Donald, 1978; Porter, 1999).

Transfer shock can result in lower grades and is widely studied among vertical transfer students and may affect a student's ability to persist at their new institution due to course failures (Nolan & Donald, 1978; Thurmond, 2007). However, one study conducted at a Canadian university examined measures of academic success between community college transfers, transfers from other four-year universities, and non-transfer students. Researchers found transfers from other four-year universities had higher final grades and were less likely to fail classes in the first semester than community college transfers and non-transfers (Stewart & Martinello, 2012).

A study conducted at a major state university in Kentucky found students who transfer with more than 60 credits from community colleges have GPAs comparable to native junior students who began their baccalaureate career at the university (Gladstone & Gehring, 1993). However, Gladstone and Gehring (1993) found students who transfer from community colleges before earning 60 credit hours have significantly lower GPAs at the university than those who persisted at the community college long enough to earn 60 or more credit hours. The results from the presented study may allow institutional

leaders to identify students that are susceptible to experiencing transfer shock, thus allowing staff and faculty to intervene and promote improved academic success.

Persistence and Retention. When students transfer out of their institutions, many institutional leaders count those students as drop-outs, which negatively affects persistence and retention rates. According to Allen, Robbins, Casillas, and Oh (2008), transferring from one institution to another has a negative effect on degree attainment. Referencing the rapidly changing demographics of today's college students, Reason (2003) indicates, "isolating a small number of variables to examine their impacts will no longer suffice . . . studies must be inclusive of as many variables and interactions as possible in order to fully understand retention issues in light of the increasingly diverse student population" (p. 177).

According to Reason (2003), "gender, race and ethnicity, socioeconomic status, high school grade point average, college grade point average, as well as the interaction between these variables, are related to persistence" (p. 177). These predictors have not changed dramatically over the past decades; Wang (2009) used the National Education Longitudinal Study of 1988 and Postsecondary Education Transcript Study and found gender, socioeconomic status, high school curriculum, college grade point average, educational expectations upon entering college, college involvement and math remediation to all be significant predictors of college persistence among community college transfer students. Again, Wang (2009) focused solely on vertical transfer students, leaving out lateral transfers altogether.

Of the known persistence factors, college grade point average can be especially predictive. Cejda, Rewey, and Kaylor (1998) found that transfer students from

community colleges with a 3.0 or higher grade point average persisted toward graduation at a rate equal to first-time freshmen. Ishitani (2008) also discovered semester GPAs to be the explanatory variable most significantly associated with departure among transfer students. In addition to college GPA, academic level has also been found to impact persistence among transfer students. In the same study, Ishitani (2008) found, “freshman transfer students were indeed more likely to depart than native students in the first 3 years at the study institution . . . and sophomore and junior transfer students exhibited higher persistence rates than native and freshman transfer students” (p. 411).

Pre-college academic achievement, including high school GPA and ACT/SAT scores, have been shown to impact persistence (Allen et al., 2008; Kuh et al., 2008; Stewart, Lim, & Kim, 2015). A longitudinal study conducted by DeBerard, Speilmans, and Julka (2004) found SAT scores, along with other variables, to be a predictor of cumulative GPA among college freshmen. Bridgeman, McCamley-Jenkins, and Ervin (2000) found SAT and ACT scores to predict college GPA during the first year of college. Similarly, Aleadmoni and Oboler (1978) concluded, “[the] ACT and SAT are equally able to predict first semester GPA either alone or in multiple prediction” (p. 398). Levitz, Noel, and Richter (1999) concluded a linear relationship exists between SAT/ACT scores and retention (as cited in Reason, 2003). Similarly, Astin (1997) found SAT scores to be a predictor that influence retention.

Being able to predict the cumulative GPA of first-time college freshmen at the end of the first academic year can have significant effects on retention. A study conducted by Mattson (2007) found high school GPA, gender, and leadership experience to significantly predict college GPA. In the same study, though, Mattson found SAT

scores failed to predict college GPA as a measure of success. However, Murtaugh, Burns, and Schuster (1999) demonstrated the predictive power of pre-college academic variables on retention, and found SAT score to be more predictive than high school GPA. Murtaugh et al. (1999) recommend universities use these variables to identify at-risk students who may withdraw before graduation and introduce an intervention program. For example, Oregon State University is using results to guide and improve university retention efforts through marketing, recruitment, and orientation and other transition programs (Murtaugh et al., 1999).

For a student to persist through graduation, they must be retained by the institution. Ishitani and McKittrick (2010) indicate “transfer students are retained one to nine percentage points lower than, and graduate two to eight percentage points lower than, native students” (p. 578). Duggan and Pickering (2008) found barriers to persistence and retention differ based on the academic level of the incoming transfer student, thus indicating a need for institutional leaders to address the needs of transfers more specifically, rather than broadly. Gladstone and Gehring (1993) found transfers from community colleges in Kentucky who transferred to a university in the state had different graduation rates depending on their time of transfer. Students who completed at least 60 credits before transferring (transfer juniors) persisted towards graduation at significantly higher rates than those who earned fewer than 60 credit hours; 40% of transfer juniors had graduated by spring 1990, compared to only 30.9% who had earned fewer than 60 credits before transferring (Gladstone & Gehring, 1993). When graduation rates of transfer juniors were compared to native juniors, 40.1% of transfer juniors graduated compared to 60.4% of native juniors (Gladstone & Gehring, 1993).

The statistics presented above indicate much work is needed to increase the persistence and graduation rates of transfer students as a whole. Using known persistence factors previously outlined, along with residency and type of transfer student (vertical vs. lateral), higher education professionals may better identify those at risk of not persisting to the next academic year. Having identified those at risk, postsecondary institutional leaders can implement early interventions to bolster retention and persistence rates.

Financial aid. During transfer, students may lose institution financial aid and scholarships. Li (2010) found institutional leaders may have mixed reviews when it comes to enrolling lateral transfer students due to their inability to receive financial aid after transfer. A study conducted by Hood, Hunt, and Haefele (2009) on transfer students from Illinois found most transfer students were only offered loans or no financial aid at all. This becomes a barrier for many students who rely on financial aid and scholarships to continue their education.

In examining the relationship between both merit- and need-based financial aid with persistence, several studies have found a positive relationship (DesJardins & McCall, 2010; St. John, 1998). DesJardins and McCall (2010) simulated financial aid package strategies to analyze their effect on persistence toward graduation, and found, “stopout probabilities are higher and the graduation chances lower when financial aid is zeroed out compared to the status quo—in other words, when the student aid variables reflect the actual aid students received” (p. 529). The effect of financial aid on persistence is a well known phenomenon, as demonstrated by a meta-analysis conducted by Murdock back in 1987. After reviewing and analyzing the results of numerous

studies, Murdock (1987) found, “financial aid promotes student persistence in higher education” (p. 84).

Princeton University is well known for making the switch from providing loans to attend the university to providing scholarships; more specifically, “under the Princeton policy, aid packages are determined and any loans in the package are replaced (dollar for dollar) by institutional grants or scholarships” (DesJardins & McCall, 2010, p. 533). In another simulation, DesJardins and McCall (2010) under the Princeton strategy found persistence towards graduation improves by 32% even if a student has one stopout spell, and overall chances of graduation are 9% higher under the Princeton approach compared to the baseline model of financial aid packaging.

Different types of financial aid (need-based and merit-based) both have positive impacts on persistence toward graduation. Persistence toward graduation can lead to improved retention rates, as one must persist to be retained by the institution. Singell (2004) found need-based aid to positively impact retention, and merit-based aid to have the largest impact on retention rates using data from the University of Oregon.

The positive relationship between persistence and financial aid is present at all types and levels of post-secondary institutions. In a case study at a private university, St. John (1998) found increases in grants and loans improved annual retention rates. At the community college level, McKinney and Novak (2012) found simply filing the Free Application for Federal Student Aid (FAFSA) led to higher odds of persisting, because without filing the FAFSA students are likely not eligible to receive financial aid. More specifically, full-time students who file the FAFSA are 79% more likely to persist after

controlling for other persistence factors and part-time students are 100% more likely to persist (McKinney & Novak, 2012).

Overall, it appears access to financial aid and scholarships impact persistence toward graduation. For many, filing the FAFSA is the first step to gain access to different forms of financial aid. As transfer students face losing financial aid and scholarships upon transfer, they gain a barrier that affects their chances of graduation.

Conclusion

When addressing issues related to the transfer itself, Nancy Schlossberg's transition theory serves as a framework for researchers and practitioners. Theories centering on engagement, retention, and persistence also provide insight on a student's desire to either maintain enrollment, or transfer from their institution. Overall, transfer students encompass a large percentage of all college students, and their needs and issues are often addressed broadly, rather than individually. The following chapters outline methods, statistical analyses, and results of this research study, which examined the differences in the transfer population, comparing vertical and lateral transfers.

CHAPTER III

METHODS & MATERIALS

Data Source & Collection Procedures

For the purpose of this study, data were collected from one university, and multiple forms of data analysis were used to address the two research questions. The methods of data collection and statistical analysis are discussed below.

Institutional Setting

The study took place at the University of Louisville, a large public, primarily residential, four-year institution in the southeastern United States. The University of Louisville is labeled a “highest research activity” university by The Carnegie Classification of Institutions of Higher Education (2017). The University of Louisville is also labeled a four-year, full-time, more selective, higher transfer-in institution, and to receive these labels, the institution meets the following criteria:

- fall enrollment data indicate at least 80 percent of undergraduates are enrolled full-time at these bachelor's or higher degree granting institutions;
- test score data for first-year students indicate that these institutions are more selective in admissions (80th to 100th percentile of selectivity among all baccalaureate institutions);
- at least 20 percent of entering undergraduates are transfer students (Carnegie Classification of Institutions of Higher Education, 2017).

Total enrollment at the institution is over 20,000 students, and approximately 16,000 of those students are at the undergraduate level (UofL, “Profile,” 2016). The student body is approximately split 50% male and 50% female, and 74% are residents of

Kentucky while 26% of students are classified as non-residents (UofL, “Just the Facts,” 2017). The University of Louisville is a predominately-White institution comprised of 72% White, 10% Black, and 4% Hispanic students (UofL, “Just the Facts,” 2017).

The University of Louisville has three campuses with the majority of undergraduate and graduate programs located on the main campus, referred to as the Belknap campus, located approximately five miles south of Downtown Louisville (UofL, “Campuses,” 2017). The Health Sciences Campus in Downtown Louisville houses all undergraduate, graduate, and professional health-related degree programs (UofL, “Campuses,” 2017). Degree programs at the University of Louisville range anywhere from history and liberal studies to engineering and medicine.

The University of Louisville provides programs and initiatives to aid in the adjustment of transfer students. Within the Office of Admissions at UofL, a separate Office of Transfer and Adult Services exists to assist transfer and adult students with their transition from their home institution to UofL. Transfer and Adult Services houses a student mentorship program, known as the Transfer Ambassador Program, which connects prospective transfer students with current transfer students at UofL in an effort to begin institutional engagement with peers who have already successfully completed the transfer process (UofL, “Transfer Ambassadors,” 2017). To assist vertical transfer students from Kentucky Community and Technical Colleges and Ivy Tech Community College in Sellersburg, Indiana, Transfer and Adult services provides the ULtra program. ULtra is a program that provides students at community colleges the opportunity to meet with UofL advisors, live in on-campus UofL residence halls, obtain a UofL student ID card, utilize UofL campus buildings and resources, as well as attend university sponsored

sporting events (UofL, “ULtra,” 2017). In addition to the program run out of the Office of Admissions and Office of Transfer and Adult Services, the University of Louisville participates in the 55,000 Degrees initiative through Mayor Greg Fischer’s Office, aimed at assisting nearly 100,000 Louisville residents that have at least some college credit to complete a college degree (WICHE, “Effective Collaboration,” 2014). By utilizing the ULtra and Transfer Ambassador programs, along with capitalizing on the 55,000 degree initiative, the University of Louisville is positioned to accept and enroll more transfer students each year.

Population & Sample

The population for this study included transfer students at colleges and universities. To study the desired sample from the University of Louisville, convenience sampling was utilized due to the convenient availability of data from the institution (Shavelson, 1996). First-time freshmen who have earned college work (AP credit and dual enrollment) prior to attending the institution full-time were not included in this study, as they are not considered transfer students. It should also be noted that transfer students who have earned more than twenty-four transferrable credit hours prior to admission to the university are not required to submit high school transcripts or standardized test scores (ACT or SAT), although some student records contain this data from prior applications; this limitation is discussed in detail in the limitations section.

This study used transfer students who first enrolled at the University of Louisville in the fall 2014, fall 2015, and fall 2016 semesters. According to the Office of Academic Planning and Accountability at the University of Louisville, 1,001 transfer students enrolled during fall 2014, 959 transfer students enrolled during fall 2015, and 959

transfer students enrolled during fall 2016 (UofL, “Common Data Sets,” 2015, 2016, 2017). Combining transfer student enrollment from fall 2014, fall 2015, and fall 2016 yielded a total sample of 2,924.

Data Collection

A formal request for data through the Office of Academic Planning and Accountability at the University of Louisville was filed to obtain the data for this study. The following data were requested of each enrolled transfer student for the 2014, 2015, and 2016 fall semesters: high school GPA, ACT score, race/ethnicity, gender, residency status, earned transfer credits, transfer GPA, type of transfer institution (two-year or four-year institution), credits earned during first semester at UofL, first semester UofL GPA, confirmation of enrollment in second semester, cumulative earned credits, cumulative institutional GPA after first and second semesters, and confirmation of enrollment for subsequent fall semester (third semester). The University of Louisville’s student information system runs a night process to convert SAT scores submitted by students to ACT composite scores, therefore ACT composite scores were used for the purpose of this study. The conversion in the student information system uses concordance tables jointly provided by The College Board (SAT) and the ACT, which all college and university admissions representatives use to compare the scores of the two standardized exams to one another, as well as compare versions of the SAT before and after the March 2016 revisions.

Research Questions & Analyses

This study addressed two research questions and their corresponding hypotheses. Each statistical method, along with its assumptions, are addressed below.

Procedures

Data were reviewed to assess discrepancies, outliers, or missing information. Any case that was missing data was excluded from the analysis. Following review of data, all categorical variables were dummy coded as needed. Specifically, race/ethnicity were dummy coded as: White, Black, and All Other Minorities; the dummy coded categories are based on university reporting in for “Just the Facts” (2017) publications. Descriptive statistics were analyzed to provide demographic information about the sample, as well as to identify outliers. For a complete list of variables with levels of measurement and coding, see Table 1.

Variables

The independent and predictor variables for this study included the following: race/ethnicity, gender, residency status, high school GPA, ACT composite score, credit hours earned prior to transfer, transfer GPA, type of transfer institution (two-year or four-year institution), credits earned during first semester at UofL, first semester UofL GPA, confirmation of enrollment in second semester, cumulative earned credits, cumulative institutional GPA after first and second semesters. The dependent variable for this study was retention (semester one to semester two and year one to year two), represented by enrollment at the institution the subsequent semesters. Transfer GPA was also used as a dependent variable to assess transfer shock.

Table 1
Background, Independent, and Dependent Variables

Type of Variable	Variable	Level of Measurement	Coding
Independent background variables	Race/Ethnicity	Categorical, 4 levels	Dummy Code, White, Black, All Other Minorities
	High school GPA	Interval	0.0-4.0
	ACT Score	Interval	1-36
	Gender	Nominal, 2 levels	Female = 0, Male =1
	Residency	Nominal, 2 levels	Resident = 0, Non-Resident = 1
	Pell Eligibility	Nominal, 2 levels	Not Eligible = 0, Eligible = 1
	Transfer GPA	Interval	0.0 – 4.0
Independent variable	Transfer credit hours earned	Ratio	0-120
	Type of transfer	Nominal, 2 levels	Lateral = 0, Vertical =1
Dependent variables	Transfer GPA	Interval	0.0 – 4.0
	UofL First Semester GPA	Interval	0.0 – 4.0
	UofL 1 st to 2 nd semester retained	Nominal, 2 levels	No = 0, Yes = 1
	UofL cumulative GPA	Interval	0.0 – 4.0
	UofL 2 nd to 3 rd semester retained	Nominal, 2 levels	No = 0, Yes = 1

Analyses

The researcher used the Statistical Package for the Social Sciences (SPSS) and employed a variety of statistical techniques to respond to each research question and its hypothesis. The overall aim of this study was to investigate differences in vertical and lateral transfer students. The design of this study began with basic statistical analyses that ignored pre-existing differences between vertical and lateral transfers and concluded

with multiple regression analyses that incorporate pre-existing differences. The two statistical techniques used, repeated measures analysis of variance (RM ANOVA) and multiple regression, fall under the general linear model. The assumptions of RM ANOVA include independent random sampling, normal distribution, homogeneity of variance, and sphericity (Cohen, 2008). Additionally, multiple regression assumptions include independent random sampling, normal distribution, homogeneity of variance, and linearity (Shavelson, 1996). Assumptions for each test were analyzed and necessary tests were employed to address assumption issues when necessary. To test the level of significance, all tests were performed at an alpha level of .05.

RM ANOVA. A repeated measures ANOVA was used to address the first research question. A RM ANOVA was used to, “determine whether the observed differences between two or more sample means [were] due to chance or systematic differences among population means” (Shavelson, 1996, p. 465). The assumption of independence was met due to measurements of each subject not being related to or influence by another (Cohen, 2008). To ensure the normality assumption was met, histograms were generated and examined. A repeated measures design requires the same number of observations at each treatment level (e.g., subject one has a measurement at treatment A and treatment B), therefore the homogeneity of variance assumption can be ignored (Cohen, 2008). Additionally, sphericity was met due to only two treatment levels in the design (Field, 2016). A detailed description of the research question, its variables, and analysis procedure is found below:

1. Do lateral transfer students **suffer less transfer shock** during their first academic semester than vertical transfer students?

H₁: Lateral transfer students will experience **less transfer shock** than vertical transfer students. (Table 2)

Table 2
Research Question 1 Variables and Analysis

Dependent Variables	Independent Variable	Control Variables	Method of Analysis
Transfer GPA, UofL first semester GPA	Type of transfer institution ¹	HS GPA, ACT Score	RM ANOVA

¹Two-year or four-year institution

Procedure: A RM ANOVA was computed to determine if lateral transfer students experienced less transfer shock than vertical transfer students.

Transfer GPA and first semester UofL GPA were entered into the model as within-subjects variables. Type of transfer institution was entered into the model as the between-subjects factor. Both high school GPA and ACT score were used a control variables.

Ordinary least squares regression. The second research question addressing retention required an ordinary least squares (OLS) regression analysis. The aim of this study was to examine the separate and collective relationships among the type of transfer student, as well as various independent variables and their effect on college retention; college retention is a dichotomous variable (retained, not retained), and OLS regression can be used for the prediction of a dichotomous outcome (Peng, Lee, & Ingersoll, 2002). The independent variables in this study were either categorical or continuous, and the purpose of this study was to assess the relationship independent variables have on a dichotomous dependent variable. Therefore, OLS regression is the appropriate form of analysis.

OLS regression has five underlying assumptions that affect the validity of the hypothesis test. According to Hayes and Cai (2007), the five assumptions of the OLS regressions include:

“The Y_i s are generated according to the model equation, (2) the X values are fixed (rather than random), (3) the errors are uncorrelated random variables with (4) means of zero, and (5) constant variance, the latter assumption known as homoscedasticity” (p. 709).

The assumption of independence was met since all cases are independent of one another. A residual scatterplot was generated and analyzed to check the assumptions of linearity and homoscedasticity, and to assess for outliers (Shavelson, 1996). A normal probability plot was generated and analyzed to check the assumption of normality (Stevens, 2009). Multicollinearity among independent variables was assessed by reviewing the Variance Inflation Factors (VIF); skew and nonlinearity were also addressed. An OLS regression model was used to assess the influence of several predictor variables in a sequential manner (Petrocelli, 2003).

High school GPA and ACT composite score were used in an attempt to control for student background differences in the final model. Several studies support the notion SAT and ACT scores are predictors of academic success in higher education (DeBerard, Speilmans, & Julka, 2004; Marsh, Vandehey, & Diekhoff, 2008). Other studies have found high school GPAs to be significant predictors of academic success and retention (Hoffman, 2002; Waugh, Micceri, & Takalkar, 1994). Similarly, Astin and Oseguera (2005) found both high school GPA and standardized test scores to be significant predictors of college degree completion rates.

By first running two OLS regression analyses without both high school GPA and ACT score, the initial research question was analyzed with the largest possible sample. To assess for potentially strong confounds and to account for known predictors of retention, both ACT score and high school GPA were added as control variables to investigate their effects on the magnitude of the regression coefficient. Adding ACT score and high school GPA as control variables reduced sample size due to admissions criteria established by the Commonwealth of Kentucky and University of Louisville. However, adding both high school GPA and ACT score collectively as control variables incorporates additional background variables to highlight the differences in lateral and vertical transfer students, yielding less biased results.

A detailed description of the research question, its variables, and analyses can be found below:

2. Do lateral transfer students have a **higher retention rate** than vertical transfer students? (Table 3)
 - a. Do lateral students have a higher **first to second semester retention rate**?
 - b. Do lateral students have a higher **second to third term retention rate (overall retention)**?

H₂: Lateral transfer students will have **higher retention rates** than vertical transfer students.

Table 3

Research Question 2 Variables and Analyses

Analysis	Dependent Variable	Independent Variable	Method of Analysis
One	Retention from semester one to semester two	Block 1: race/ethnicity, gender, residency, Pell eligibility; Block 2: transfer GPA, transfer credits earned; Block 3 type of transfer institution ¹	OLS regression
Two	Retention from semester one to semester two	Block 1: HS GPA, ACT score; Block 2: race/ethnicity, gender, residency, Pell eligibility; Block 3: transfer GPA, transfer credits earned; Block 4: type of transfer institution ¹	OLS regression
Three	Retention from semester two to semester three (overall retention)	Block1: race/ethnicity, gender, residency, Pell eligibility; Block 3: transfer GPA, transfer credits earned; Block 3: type of transfer institution ¹	OLS regression
Four	Retention from semester two to semester three (overall retention)	Block1: HS GPA, ACT score; Block 2: race/ethnicity, gender, residency, Pell eligibility; Block 3: transfer GPA, transfer credits earned; Block 4: type of transfer institution ¹	OLS regression

¹Two-year or four-year institution.

Procedure: An OLS regression analysis was used to determine if a statistically significant difference in retention from semester one to semester two was present between vertical and lateral transfers for

analyses one and two. High school GPA and ACT score were added as control variables as block one in analysis two. Similarly, an OLS regression analysis was used for analyses three and four to determine if a statistically significant difference in retention from semester two to semester three (overall retention) between vertical and lateral transfer students was present. High school GPA and ACT score were added as control variables as block one in analysis four.

Limitations

Although this study used a robust set of data from three years of transfer students, limitations do exist. The first limitation is the nature of the institution. According to The Carnegie Classification of Institutions of Higher Education (2017), the University of Louisville is labeled a high transfer-in, and not all institutions have the same rate of transfer. Similarly, UofL is a metropolitan research university with a diverse student body that primarily serves the city of Louisville and the region, and may not be comparable to other large predominately-White institutions. Additionally, the results may not be generalizable to private or liberal arts institutions. Therefore, results may not be applicable across all college and university campuses. Future studies should aim to incorporate data from multiple types of higher education institutions.

Second, the results of this study were based solely on existing data and may not accurately account for other variables. Studies have shown many other variables impact student persistence and retention, including non-cognitive variables (Duggan & Pickering, 2008), as well as student engagement (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008) and involvement (Milem & Berger, 1997). Using measures of student engagement

and involvement may allow future studies to account for further variance of factors impacting the persistence of vertical and lateral transfer students.

Third, due to transfer guidelines established by the Commonwealth of Kentucky and the University of Louisville, transfer students who earned more than twenty-four transferrable credit hours at time of admission do not need to submit high school transcripts or ACT/SAT scores. Since participants are not required to submit high school transcripts and ACT/SAT scores, the sample size was limited. Future studies may consider incorporating more incoming transfer classes, and/or replicating the presented study at an institution that requires all transfer students to submit high school transcripts and ACT/SAT scores. Additionally, obtaining data from the National Student Clearinghouse may bolster generalizability.

Fourth, the quantitative nature of this study may be a limitation. Many times, the individual stories and narratives of students provide insight into reasons for not persisting at an institution. Holding focus groups to capture individual student perspectives may allow future studies to account for further variance of factors impacting the retention and academic success of vertical and lateral transfer students. Focus groups may allow intuitional leaders to account for non-cognitive effects on academic success that traditional measures of retention do not account for.

Fifth, several factors outside of academic preparedness have been shown to impact college persistence are missing from this study. Measures of student engagement, specifically student engagement in educationally purposeful activities, have shown to positively impact persistence between the first and second year at the same institution (Kuh et al., 2008). Additionally, students from families with greater incomes tend to

persist at higher rates than those from families with lower incomes (Braunstein, McGrath, & Pescatrice, 2001). Whether or not a student receives a federal Pell Grant can also have an effect on college retention. Researchers found non-Pell Grant recipient minority students have higher risks of dropping out and not being retained compared to their White counterparts; however, when minority students receive larger Pell Grants, they have lower dropout rates (Chen & DesJardins, 2010). Researchers (Walpole, 2003; Wang, 2009) have also found socio-economic status to influence educational outcomes, such as persistence and degree attainment. Future studies focusing on the retention differences between vertical and lateral transfer students should consider adding student engagement, campus climate measures, and financial variables to bolster results. Examples of variables that significantly impact retention include student involvement and math remediation (Wang, 2009).

CHAPTER IV

RESULTS

Introduction

The current study examined the relationship between variables, including type of transfer institution (two-year or four-year) and retention. Two research questions were identified along with their corresponding hypotheses. Chapter three outlined the methodology for testing the hypotheses; this chapter outlines key demographics of the sample and the results of each analysis.

Sample Size

Upon review of the ordinary least squares regression results comparing retention from semester one to semester two and semester two to semester three (overall retention), it was determined adding the pre-college academic variables of high school GPA and ACT score as controls were necessary to establish a baseline for the sample. Adding high school GPA and ACT score did not affect the significance of the variable of interest (type of transfer institution). Furthermore, adding high school GPA and ACT score increased model fit from 3.8% ($R^2 = 0.038$) to 7.4% ($R^2 = 0.074$) when assessing retention from semester one to semester two. Similarly, adding high school GPA and ACT score increased model fit from 5% ($R^2 = 0.050$) to 9.2% ($R^2 = 0.092$) when assessing overall retention. The addition of high school GPA and ACT score decreased the overall sample from 2,924 ($N = 2,924$) to 1,032 ($N = 1,032$) but yielded statistically significant results. A post hoc analysis was also conducted using G*Power to assess effect size; each post hoc analysis revealed the calculated F statistic was larger than the critical F statistic.

Sample Demographics

The overall sample for this study consisted of 1,032 students who transferred to the University of Louisville in the fall 2014, fall 2015, or fall 2016 semesters. The sample consisted of 570 (55%) female and 462 (45%) male students, closely mirroring the demographics of the university (50% female). In terms of race/ethnicity, the demographic breakdown was 75% White, 13% Black, and 12% identified as “All Other Minorities.” The race/ethnicity demographics of the sample also closely mirror those of the university (72% White, 10% Black, and 18% “All Other Minorities”). Regarding residency, 92% of the sample was considered a resident of Kentucky or received resident rates as part of the Indiana reciprocity agreement (resident), and 8% were residents of other states (non-resident). Concerning Pell Grant eligibility, 43% of the sample was eligible for the Pell Grant. Fifty-eight percent of students transferred from a four-year institution (i.e., were lateral transfers). See Table 4 for more detailed demographics.

Table 4
*Descriptive Statistics of Sample Demographics*¹

Variable	Final Sample ¹		Full Sample ²	
	<i>n</i>	%	<i>n</i>	%
Gender				
Female	570	55%	1,595	55%
Male	462	45%	1,329	45%
Race/Ethnicity				
White	776	75%	2,101	72%
Black	132	13%	408	14%
All Other Minorities	124	12%	415	14%
Pell Eligibility				
Not Eligible	585	57%	1,532	52%
Eligible	447	43%	1,392	48%
Transfer Type				
Lateral	597	58%	1,509	52%
Vertical	435	42%	1,415	48%
Residency				
Resident	950	92%	2,545	87%
Non-Resident	82	8%	379	13%

¹(*N* = 1,032)

²(*N* = 2,924)

Data are available for a subsample of students on some measures of pre-college and college-level academic achievement using the final sample. The average ACT score was 22.0 (*SD* = 4.0) and the average high school GPA was 3.2 (*SD* = 0.6). At the college level, the average number of credit hours transferred in was 41.3 (*SD* = 23.4) and the average college transfer GPA was 2.8 (*SD* = 0.7). A detailed breakdown of differences in vertical and lateral transfer academic achievement comparing the full and final samples is available (Table 5). Table 6 provides a correlation matrix of academic variables and retention using the final sample.

Table 5
Descriptive Statistics of Academic Achievement

Variable	Final Sample ¹				Full Sample ²			
	Vertical Transfer ³		Lateral Transfer ⁴		Vertical Transfer ⁵		Lateral Transfer ⁶	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
ACT Score	20.8	3.5	22.8	4.1	.	.	.	.
HS GPA	3.0	0.6	3.3	0.5	.	.	.	.
Transfer Credits	45.6	22.8	38.1	23.3	56.3	23.6	50.5	28.1
Transfer GPA	2.9	0.6	2.7	0.7	3.0	0.5	2.7	0.6

¹(*N* = 1,032)

²(*N* = 2,924)

³(*n* = 435)

⁴(*n* = 597)

⁵(*n* = 1,415)

⁶(*n* = 1,509)

Table 6
Correlations of Academic & Retention Variables

Variables	HS GPA	ACT Score	TRF GPA	TRF Credits	TRF Type	UofL GPA	2 nd SEM RET	3 rd SEM RET
HS GPA	1.00	.	.	.	.	.	.	.
ACT Score	0.47	1.00	.	.	.	.	.	.
TRF GPA	0.29	0.06	1.00	0.14	0.17	0.37	0.18	0.20
TRF Credits	0.00	-0.04	0.17	1.00	0.11	0.11	0.07	0.08
TRF Type	-0.20	-0.24	0.15	0.15	1.00	0.04	0.05	0.05
UofL GPA	0.24	0.18	0.41	0.12	0.00	1.00	0.49	0.48
2 nd SEM RET	0.07	0.05	0.24	0.09	-0.00	0.49	1.00	0.59
3 rd SEM RET	0.09	0.04	0.25	0.13	0.01	0.47	0.58	1.00

Note. Bolded Pearson correlation coefficients in the top half of the table are for the full sample (*N* = 2,294) and Pearson correlation coefficients in the bottom half of the table are for the final sample (*N* = 1,032).

Results

This section contains the results of each analysis used to address the two research questions. An alpha level of 0.05 was used for all analyses.

Research Question 1

1. Do lateral transfer students suffer less transfer shock during their first academic semester than vertical transfer students?

A one-way repeated-measure analysis of variances (RM ANOVA) was used to determine whether lateral transfer students suffered more transfer shock during their first academic semester compared to vertical transfer students. The independent variable represented the two types of transfer students: 1) lateral transfer students, and 2) vertical transfer students. The dependent variables included transfer GPA as time one and first semester UofL GPA as time two. High school GPA and ACT score were used as control variables. See Table 7 for means and standard deviations of the two groups.

Table 7
*Means and Standard Deviations of Transfer Shock*¹

Variable	Vertical Transfers ²		Lateral Transfers ³	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Transfer GPA	2.9	0.6	2.7	0.7
UofL GPA	2.5	1.1	2.5	1.1
HS GPA	3.0	0.6	3.3	0.5
ACT Score	20.0	3.5	22.8	4.1

¹($N = 1,032$)

²($n = 435$)

³($n = 597$)

The one-way RM ANOVA of transfer shock revealed a statistically significant effect of time (i.e., between transfer GPA and UofL GPA), $F(1, 1028) = 23.0, p < 0.001$ (Table 8). Additionally, results revealed a statistically significant main effect for transfer type, $F(1, 1028) = 4.7, p < 0.05$. On average and not controlling for high school GPA

and ACT score, vertical transfer students experienced a transfer shock of -0.4 points in GPA compared to -0.2 points for lateral transfer students. After assessing transfer shock by controlling for high school GPA and ACT score, on average vertical transfer students still experienced a transfer shock of -0.4 points in GPA compared to -0.2 points for lateral transfer students. See Figure 2 for a visual representation of transfer shock controlling for high school GPA and ACT score; controlling for high school GPA and ACT score did not highlight differences in transfer shock.

Table 8
*Transfer Shock RM ANOVA Results*¹

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Transfer Shock (Time)	12.7	1	12.7	23.0	0.022
Transfer Type ²	2.6	1	2.6	4.7	0.005
Error	569.3	1028	0.5		

¹(*N* = 1,032)

²Transfer Type was analyzed using high school GPA and ACT score as control variables.

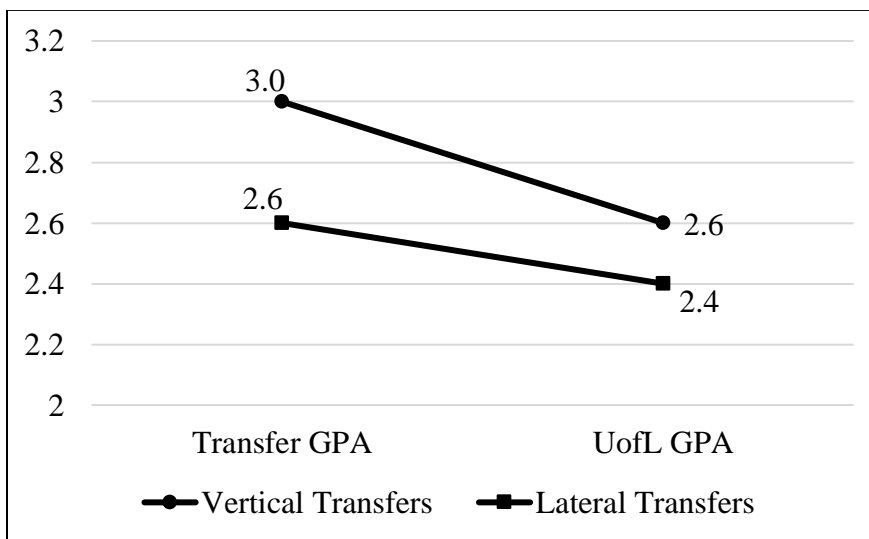


Figure 2. Transfer Shock (High school GPA and ACT score used as control variables)

A one-way RM ANOVA without using high school GPA and ACT score as covariates revealed a statistically significant effect of time (i.e., between transfer GPA

and UofL GPA), $F(1, 1030) = 95.5, p < 0.001$. Additionally, results revealed a statistically significant main effect for transfer type, $F(1, 1030) = 10.2, p < 0.05$. Incorporating high school GPA and ACT score as control variables highlighted possible academic differences (i.e. UofL GPA) in vertical and lateral transfer students post-transfer. Without high school GPA and ACT score, both groups (vertical and lateral) appear to have the same average UofL GPA ($M = 2.5$) post-transfer, but including the covariates resulted in a difference in average UofL GPA of 0.2 points.

Research Question 2

2. Do lateral transfer students have a higher retention rate than vertical transfer students? More specifically, do lateral transfer students have a higher first to second semester retention rate, and a higher second to third semester retention rate (overall retention)?

Four separate OLS regression analyses were conducted. Analyses one and two compared retention rate from semester one to semester two. Analyses three and four compared retention rate from semester two to semester three (overall retention).

All Variance Inflation Factors (VIF) were reviewed and all VIF values were approximately 1.0. After assessing the normal probability plots and histograms of residuals, all values appear to be normally distributed. Residual scatterplots were used to assess homoscedasticity and linearity, and violations of these assumptions did not appear to be present.

Analysis one. An OLS regression was calculated using the full sample to predict retention from semester one to semester two based on participant demographics (block one: Pell Grant eligibility, gender, race, and residency), pre-transfer academics (block

two: transfer GPA and transferrable credit hours), and type of transfer institution (block three). A detailed breakdown on retention differences for vertical and lateral transfers can be found in Table 9.

Table 9
Cross-tabulation: Retention to Semester Two – Part 1¹

Group	Retained			
	No		Yes	
	<i>N</i>	%	<i>n</i>	%
Vertical Transfer	233	16%	1182	84%
Lateral Transfer	311	21%	1198	79%

(*N* = 2,924)

The OLS regression revealed a statistically significant regression equation for model one, but accounted for less than 1% of the variation in retention from semester one to semester two [$F(5, 2918) = 3.25, p < 0.05$] (Table 10). Introducing pre-transfer academics into model two, including transfer GPA and transferrable credit hours earned, explained an additional 3.3% ($\Delta R^2 = .033$) of the variation in retention from semester one to semester two and produced a statistically significant regression model controlling for demographic variables [$F(7, 2916) = 16.53, p < 0.001$]. Finally, adding type of transfer institution into model three did not explain statistically significant variation in retention from semester one to semester two controlling for other variables in the model [$F(8, 2915) = 14.55, p < 0.001$].

Analysis one examined first semester to second semester retention rates between vertical and lateral transfer students. Raw data showed that on average, vertical transfer students were retained from semester one to semester two 4.5 percentage points higher than lateral transfer students (i.e. 83.5% of vertical transfer students vs. 79% of lateral transfer students). Controlling for demographics, the final model indicated residency, transfer GPA, and transfer credit hours significantly contributed to retention from semester one to semester two (Table 10). Results indicated non-resident students were 5% less likely to be retained than residents of Kentucky. For every one-point increase in transfer GPA,

students were 10% more likely to be retained to semester two. Similarly, every one-credit hour increase in amount of transfer credit hours earned positively influenced the likelihood of being retained by less than one percentage point.

Table 10
*Summary of OLS Regression for Variables Predicting Second Semester Retention – Part 1*¹

Variable	Full Sample Model 1 ²	Full Sample Model 2 ³	Full Sample Model 3 ⁴
HS Background			
HS GPA	.	.	.
ACT Score	.	.	.
Demographics			
Gender ⁵	-.03*	-.01	-.01
Black ⁶	-.04	-.00	-.00
All Other Minorities	.00	.00	.00
Residency ⁷	-.05*	-.05*	-.06*
Pell Eligibility ⁸	-.00	-.00	-.00
Pre-Transfer Academics			
Transfer GPA		.10*	.10*
Transfer Credit Hours		.001*	.001*
Transfer Institution			
Transfer Type			.01

Note. Data are presented as unstandardized regression coefficients. The regression coefficients can be interpreted as percentage point differences in second semester retention rates associated with the variable, controlling for other variables in the model (e.g., -.03 is interpreted as a three-percentage point difference between vertical and lateral transfers).

¹($N = 2,924$)

² $F(5, 2918) = 3.25, R^2 = 0.006, \Delta R^2 = 0.006, p < 0.001$

³ $F(7, 2916) = 16.53, R^2 = 0.038, \Delta R^2 = 0.033, p < 0.001$

⁴ $F(8, 2915) = 14.55, R^2 = 0.038, \Delta R^2 = 0.000, p < 0.001$

⁵Female coded as reference group

⁶White was left out of model as reference group

⁷In-state (residents of Kentucky) coded as reference group

⁸Not eligible coded as reference group

* $p < .05$

Results indicated the type of institution a student transfers from does not significantly affect retention rate. The initial hypothesis for this research question

predicted lateral transfer students would be retained at a higher rate from semester one to semester two; however, results indicated vertical transfer students were retained at a higher rate.

Analysis two. An OLS regression was calculated using the final sample to predict retention from semester one to semester two based on pre-college academic achievement (block one: high school GPA and ACT score), participant demographics (block two: Pell Grant eligibility, gender, race, and residency), pre-transfer academics (block three: transfer GPA and transferrable credit hours), and type of transfer institution (block four). A detailed breakdown of retention differences between vertical and lateral transfers can be found in Table 11.

Table 11
Cross-tabulation: Retention to Semester Two – Part 2¹

Group	Retained			
	No		Yes	
	<i>n</i>	%	<i>n</i>	%
Vertical Transfer	83	19%	352	81%
Lateral Transfer	113	19%	484	81%

(*N* = 1,032)

The OLS regression revealed a statistically significant regression equation for model one [$F(2, 1029) = 3.24, p < 0.05$] (Table 12). Adding demographic variables into the model two explained an additional 1.6% ($\Delta R^2 = .016$) variation in retention from semester one to semester two, and yielded a significant regression model controlling for pre-college academic achievement [$F(7, 1024) = 2.34, p < 0.001$]. Introducing pre-transfer academics into model step three, including transfer GPA and transferrable credit hours earned, explained an additional 7.2% ($\Delta R^2 = .072$) variation in retention from semester one to semester two [$F(9, 1022) = 8.82, p < 0.001$]. Adding type of transfer

institution into model four accounted for an additional 0.2% ($\Delta R^2 = .002$) variation in retention from semester one to semester two and produced a statistically significant model controlling for all other variables in the model [$F(8, 1021) = 8.12, p < .001$].

Analysis two examined first semester to second semester retention rates between vertical and lateral transfer students using high school GPA and ACT score as controls. Raw data show that on average, lateral transfer students were retained from semester one to semester two one percentage point higher than vertical transfer students (i.e. 81.1% of lateral transfer students vs. 80.1% of vertical transfer students). Controlling for pre-college academic achievement, the final model indicated Pell eligibility, transfer GPA, and transfer credit hours significantly contributed to retention from semester one to semester two. Results indicated Pell eligible students were 5% less likely to be retained than students who were non-eligible. For every one-point increase in transfer GPA, students were 13% more likely to be retained to semester two. Similarly, every one-unit increase in amount of transfer credit hours earned positively influenced the likelihood of being retained by less than one percentage point.

Table 12
Summary of OLS Regression for Variables Predicting Second Semester Retention – Part 2

Variable	Full Sample Model 1	Full Sample Model 2	Full Sample Model 3	Final Sample Model ¹ 1	Final Sample Model ² 2	Final Sample Model ³ 3	Final Sample Model ⁴ 4
HS							
Background							
HS GPA	.	.	.	.04	.03	-.01	-.02
ACT Score	.	.	.	.00	.00	.00	.00
Demographics							
Gender ⁵	-.03*	-.01	-.01		-.04	-.02	-.02
Black ⁶	-.04	-.00	-.00		-.02	.00	-.00
All Other Minorities	.00	.00	.00		.03	.04	-.04
Residency ⁷	-.05*	-.05*	-.06*		-.03	-.01	-.01
Pell Eligibility ⁸	-.00	-.00	-.00		-.05*	-.05*	-.05*
Pre-Transfer							
Academics							
Transfer GPA		.10*	.10*			.12*	.13*
Transfer Credit Hours		.001*	.001*			.00	.001*
Transfer Institution							
Transfer Type			.01				-.03

Note. Data are presented as unstandardized regression coefficients. The regression coefficients can be interpreted as percentage point differences in second semester retention rates associated with the variable, controlling for other variables in the model (e.g., -.03 is interpreted as a three-percentage point difference between vertical and lateral transfers). Final sample size was 1,032 ($N = 1,032$) and full sample size was 2,924 ($N = 2,924$).

¹ $F(2, 1029) = 3.24, R^2 = 0.006, \Delta R^2 = 0.006, p < 0.05$

² $F(7, 1024) = 2.34, R^2 = 0.016, \Delta R^2 = 0.009, p < 0.05$

³ $F(9, 1022) = 8.25, R^2 = 0.072, \Delta R^2 = 0.056, p < 0.001$

⁴ $F(10, 1021) = 8.12, R^2 = 0.074, \Delta R^2 = 0.002, p < 0.001$

⁵Female coded as reference group

⁶White was left out of model as reference group

⁷In-state (residents of Kentucky) coded as reference group

⁸Not eligible coded as reference group

* $p < .05$

The initial hypothesis for this research question predicted lateral transfer students would be retained at a higher rate from semester one to semester two, and results supported this hypothesis. Results indicated the type of institution a student transfers from does not significantly affect the retention rate, indicating other factors may contribute to retention differences.

Analysis three. An OLS regression was calculated using the full sample to predict retention from semester two to semester three (overall retention) based on participant demographics (block one: Pell Grant eligibility, gender, race, and residency), pre-transfer academics (block two: transfer GPA and transferrable credit hours), and type of transfer institution (block three). A detailed breakdown on retention differences for vertical and lateral transfers can be found in Table 13.

Table 13
Cross-tabulation: Overall Retention – Part 1¹

Group	Retained			
	No		Yes	
	<i>n</i>	%	<i>n</i>	%
Vertical Transfer	404	29%	1011	71%
Lateral Transfer	502	33%	1007	67%

(*N* = 2,924)

The OLS regression revealed a statistically significant regression equation for model one, but accounted for less than 1% of the variation in overall retention [$F(5, 2918) = 5.46, p < 0.001$] (Table 14). Introducing pre-transfer academics into model two, including transfer GPA and transferrable credit hours earned, explained an additional 4.1% ($\Delta R^2 = .041$) of the variation in overall retention and produced a statistically significant regression model controlling for demographic variables [$F(7, 2916) = 21.84, p < 0.001$]. Finally, adding type of transfer institution into model three did not explain

statistically significant variation in overall retention controlling for other variables in the model [$F(8, 2915) = 19.18, p < 0.001$].

Analysis three examined overall retention rates between vertical and lateral transfer students. Raw data showed that on average, vertical transfer students were retained from semester two to semester three four-percentage points higher than lateral transfer students (i.e. 71% of vertical transfer students vs. 67% of lateral transfer students). Controlling for demographics, the final model indicated residency, Pell eligibility, transfer GPA, and transfer credit hours significantly contribute to overall retention rate (Table 14). Results indicated non-resident students were 8% less likely to be retained than residents of Kentucky and those receiving Indiana reciprocity rates. Furthermore, Pell eligible students were 5% less likely to be retained than students who were non-eligible. For every one-point increase in transfer GPA, students were 13% more likely to be retained to semester three. Similarly, every one-unit increase in amount of transfer credit hours earned positively influenced the likelihood of being retained by less than one percentage point.

Table 14

Summary of OLS Regression for Variables Predicting Overall Retention – Part 1¹

Variable	<i>Full Sample Model 1²</i>	<i>Full Sample Model 2³</i>	<i>Full Sample Model 3⁴</i>
HS Background			
HS GPA	.	.	.
ACT Score	.	.	.
Demographics			
Gender ⁵	-.03	.00	.00
Black ⁶	-.05*	-.01	-.01
All Other Minorities	.01	.01	.01
Residency ⁷	-.08*	-.08*	-.08*
Pell Eligibility ⁸	-.04*	-.05*	-.05*
Pre-Transfer Academics			
Transfer GPA		.13*	.13*
Transfer Credit Hours		.001*	.001*
Transfer Institution			
Transfer Type			.01

Note. Data are presented as unstandardized regression coefficients. The regression coefficients can be interpreted as percentage point differences in second semester retention rates associated with the variable, controlling for other variables in the model (e.g., -.03 is interpreted as a three-percentage point difference between vertical and lateral transfers).

¹($N = 2,924$)

² $F(5, 2918) = 5.46, R^2 = 0.009, \Delta R^2 = 0.009, p < 0.001$

³ $F(7, 2916) = 21.84, R^2 = 0.050, \Delta R^2 = 0.041, p < 0.001$

⁴ $F(8, 2915) = 19.18, R^2 = 0.050, \Delta R^2 = 0.000, p < 0.001$

⁵Female coded as reference group

⁶White was left out of model as reference group

⁷In-state (residents of Kentucky) coded as reference group

⁸Not eligible coded as reference group

* $p < .05$

The initial hypothesis for this research question predicted lateral transfer students would be retained at a higher rate from semester two to semester three, however results indicated vertical transfer students were retained at a higher rate. Results indicated the type of institution a student transfers from does not affect their likelihood of being retained through the third semester of enrollment, indicating other factors may contribute to retention differences.

Analysis four. An OLS regression was calculated using the final sample to predict retention from semester two to semester three (overall retention) based on pre-college academic achievement (block one: high school GPA and ACT score), participant demographics (block two: Pell Grant eligibility, gender, race, and residency), pre-transfer academics (block three: transfer GPA and transferrable credit hours), and type of transfer institution (block four). A detailed breakdown of retention differences between vertical and lateral transfers can be found in Table 15.

Table 15
Cross-tabulation: Overall Retention – Part 2¹

Group	Retained			
	No		Yes	
	<i>n</i>	%	<i>n</i>	%
Vertical Transfer	127	29%	308	71%
Lateral Transfer	181	30%	416	70%

(*N* = 1,032)

The OLS regression revealed a statistically significant regression equation for model one and accounted for 0.9% ($R^2 = 0.009$) variation in overall retention [$F(2, 1029) = 4.51, p < 0.05$] (Table 16). Adding demographic variables into model two explained an additional 2.2% ($\Delta R^2 = .022$) variation in overall retention and yielded a significant regression equation for model two [$F(7, 1024) = 4.62, p < 0.001$]. Introducing pre-transfer academics into model three, including transfer GPA and transferrable credit hours earned, explained an additional 6.0% ($\Delta R^2 = .060$) variation in overall retention and yielded a statistically significant model [$F(9, 1022) = 11.37, p < 0.001$]. Adding type of transfer institution into model four accounted for an additional 0.1% ($\Delta R^2 = .001$) variation in overall retention and yielded a statistically significant model [$F(10, 1021) = 10.33, p < 0.001$].

Analysis four examined overall retention rates between vertical and lateral transfer students using high school GPA and ACT score as controls. Raw data showed that on average, vertical transfer students were retained from semester two to semester three 1.1 percentage points higher than lateral transfer students (i.e. 70.8% of vertical transfer students vs. 69.7% of lateral transfer students). Controlling for other variables in, the final model indicated Pell eligibility, transfer GPA, and transfer credit hours significantly contributed to overall retention (Table 16). Results indicated Pell eligible students were 10% less likely to be retained than students who were non-eligible. For every one-point increase in transfer GPA, students were 14% more likely to be retained to semester three. Similarly, every one-unit increase in amount of transfer credit hours earned positively influenced the likelihood of being retained by less than one percentage point.

Table 16

Summary of OLS Regression for Variables Predicting Overall Retention – Part 2

Variable	Full	Full	Full	Final	Final	Final	Final
	Sample Model 1	Sample Model 2	Sample Model 3	Sample Model ¹ 1	Sample Model ² 2	Sample Model ³ 3	Sample Model ⁴ 4
HS							
Background							
HS GPA	.	.	.	.07*	.05*	.00	-.00
ACT Score	.	.	.	.00	-.00	.00	-.00
Demographics							
Gender ⁵	-.03	.00	.00		-.06*	-.04	-.04
Black ⁶	-.05*	-.01	-.01		-.04	-.00	-.01
All Other Minorities	.01	.01	.01		.00	.01	.01
Residency ⁷	-.08*	-.08*	-.08*		-.10	-.08	-.07
Pell Eligibility ⁸	-.04*	-.05*	-.05*		-.10*	-.11*	-.10*
Pre-Transfer							
Academics							
Transfer GPA		.13*	.13*			.14*	.14*
Transfer Credit Hours		.001*	.001*			.002*	.002*
Transfer							
Institution							
Transfer Type			.01				-.03

Note. Data are presented as unstandardized regression coefficients. The regression coefficients can be interpreted as percentage point differences in second semester retention rates associated with the variable, controlling for other variables in the model (e.g., -.03 is interpreted as a three-percentage point difference between vertical and lateral transfers). Final sample size was 1,032 ($N = 1,032$) and full sample size was 2,924 ($N = 2,924$).

¹ $F(2, 1029) = 4.51, R^2 = 0.009, \Delta R^2 = 0.009, p < 0.05$

² $F(7, 1024) = 4.62, R^2 = 0.031, \Delta R^2 = 0.022, p < 0.001$

³ $F(9, 1022) = 11.37, R^2 = 0.091, \Delta R^2 = 0.060, p < 0.001$

⁴ $F(10, 1021) = 10.33, R^2 = 0.092, \Delta R^2 = 0.001, p < 0.001$

⁵Female coded as reference group

⁶White was left out of model as reference group

⁷In-state (residents of Kentucky) coded as reference group

⁸Not eligible coded as reference group

* $p < .05$

Results indicated the type of institution a student transfers from does not significantly affect retention rate. The initial hypothesis for this research question predicted lateral transfer students would be retained at a higher rate from semester two to semester three, however results indicated vertical transfer students were retained at a higher rate.

Summary

Chapter four began with an introduction of the overall sample demographics. The sample consisted of 1,032 students who transferred to the University of Louisville in the fall 2014, fall 2015, and fall 2016 semesters. Students were considered either vertical transfer students, having transferred from a community college, or lateral transfer students, having transferred from another four-year institution; the vertical population in the sample consisted of 435 transfers and the lateral population consisted of 597 transfers. The sample consisted of 570 women (55.2%) and 467 men (44.8%). The overall sample was predominately White (75.2%), 12.8% identified as Black, and 12% identified as “All Other Minorities.” The majority of the sample (92.1%) were considered residents of Kentucky or received resident rates as part of the Indiana reciprocity agreement (resident), while 7.9% were residents of other states (non-resident). Concerning Pell Grant eligibility, 43.3% of the sample was eligible for the Pell Grant and 56.7% were determined not eligible.

Following the introduction, the research questions were re-introduced and details about methodology were explained. Results of each question were provided, and all tests were conducted with an alpha level of .05. Table 17 provides a summary of the results.

Table 17

Overview of Results

Research Question	Statistical Procedures	Results
1. Do lateral transfer students suffer less transfer shock during their first academic semester than vertical transfer students?	RM ANOVA	A significant difference was found in the effects of transfer shock; on average, vertical transfers experienced greater transfer shock than lateral transfers.
2. Do lateral transfer students have a higher retention rate than vertical transfer students? More specifically, do lateral transfer students have a higher first to second semester retention rate, and a higher second to third semester retention rate (overall retention)?	OLS regression	Lateral transfers and vertical transfers were retained at approximately the same rates from semester one to semester two; vertical transfer students were retained at a higher rate than lateral transfers students from semester two to semester three (overall retention). Type of transfer institution was not significant predictor of retention.

CHAPTER V

SUMMARY AND CONCLUSIONS

This dissertation sought to determine if differences in transfer shock and retention were present between vertical and lateral transfer students. It was predicted lateral transfer students would suffer less transfer shock and be retained at higher rates than vertical transfer students. Data were obtained from the Office of Academic Planning and Accountability at the University of Louisville and used to analyze the two research questions. This final chapter expands upon the results of this study, and their relation to the fields of higher education and student affairs. This chapter concludes with recommendations for future policy, practice, and research.

Chapter one served as an introduction to this study and provided context concerning the two research questions. Chapter two outlined a theoretical perspective along with prior research and literature surrounding transfer students, academic success, retention, and current and future trends in higher education. Kirk-Kuwaye and Kirk-Kuwaye (2007) are among the limited researchers who have studied differences in vertical and lateral transfer students. In fact, so little is known about the lateral transfer student population, conflicting reports on the size of the population exist. Hossler et al. (2012) found approximately 16% of the transfer population to be lateral transfers, while Kirk-Kuwaye and Kirk-Kuwaye (2007) indicated over half of all transfer students are lateral.

Transfer students encounter issues native students at colleges and universities do not, which can influence the likelihood of persistence and retention. When students transfer from one institution to another, they can experience a phenomenon known as

transfer shock. Transfer shock is the initial drop in GPA when a student transfers from one institution to another and may impact persistence toward degree completion and retention (Townsend & Wilson, 2006). Similarly, when comparing native students to transfer students, Hoyt and Winn (2004) determined transfer students drop out of institutions and have lower GPAs. Transfer shock typically results in lower grades and has been widely studied by researchers among vertical transfer students, and course failures may impact a student's ability to persist at their new institution (Nolan & Donald, 1978; Thurmond, 2007). Although there is an abundance of information on academic success and degree completion among vertical transfer students, this study intends to fill the dearth in research and literature around lateral transfers.

Information in chapter two also discussed the current initiatives, trends, and state of the transfer process in the Commonwealth of Kentucky. This section provided an overview of the historical context and policy initiatives designed to bolster transfer student success and degree completion. In addition, factors related to persistence and retention were discussed, including gender, race/ethnicity, prior academic performance, and more. This study attempted to determine which factors both positively and negatively impact transfer student retention.

Chapter three provided an overview of the methods, data collection, and statistical analyses used in this study. A brief section on limitations was also included in chapter three. Chapter four provided a detailed description of each statistical analysis and included the results of each.

Discussion

The results of each research question are discussed below. Prior literature and

research are included to provide context.

Transfer Shock

Results from research question one indicate a significant main effect for transfer type as it relates to transfer shock. Although both groups of transfer students experienced transfer shock, vertical transfer students experienced a greater degree of transfer shock than lateral transfer students. Vertical transfer students experienced an average drop in GPA of 0.4 points down to an average of 2.6 post transfer, compared to an average drop of 0.2 points for lateral transfers.

Although this study is one of the limited to analyze transfer shock between vertical and lateral transfer students separately, other studies have found differences in transfer shock when comparing academic discipline and major. In a study of community college transfer students, Cejda and Kaylor (1997) found transfer shock to be primarily evident in business, math, and science students, whereas student in education, arts, humanities, and social sciences experienced an increase in GPA post transfer. In a similar study, Cejda (1997) found students with majors in mathematics and sciences experienced an average drop in GPA of 0.246, and students majoring in business experience an average drop in GPA of 0.342. However, students who majored in education, fine arts and humanities, and social sciences experienced average GPA increases of 0.024, 0.268, and 0.041, respectively (Cejda, 1997). The present study did not factor academic degree or major into the methodology, but future researchers may want to further explore interactions between academic program and transfer shock.

Stewart and Martinello (2012) found lateral transfers had higher final grades and were less likely to fail classes in the first semester than vertical transfers (Stewart &

Martinello, 2012). However, results from this study indicated vertical transfer students had higher final GPAs at their transfer institution than lateral transfers, but saw a larger drop in GPA upon transfer, indicating some may have failed courses or received lower grades than what was received at their prior institution.

Lee and Frank (1990) found vertical transfers were typically less successful academically in high school than compared to lateral transfers who attended a four-year institution right after high school. The current study sample supports this prior research, as lateral transfer students had higher average high school GPAs (3.3 vs. 3.0) and ACT scores (22.8 vs. 20.8).

Results from this study highlight two important differences in lateral and vertical transfer students. Upon completion of high school, lateral transfer students appear to be more academically prepared for college based on high school GPA and ACT score. After attending their first institution, the roles appear to switch. Vertical transfer students are more academically prepared based on college-level GPA prior to transfer; although vertical transfer students experienced greater transfer shock, they retained a higher average institution GPA than lateral transfers (2.6 vs. 2.4). Differences in mindset, amount of grit, adjusting to grading schema, academic rigor, and other institutional factors may have an impact GPA.

Retention

Students who transfer are already at risk when it comes to degree attainment and may not be retained (Allen et al., 2008). Results from research question two indicate the type of institution (community college vs. four-year institution) does not significantly

influence retention rate. Type of transfer institution was not a significant predictor of first to second semester or second semester to third semester (overall) retention rates.

Although type of transfer institution was not a statistically significant predictor of retention, other variables emerged as significant. The final model aimed at predicting retention from semester one to semester two and controlling for high school GPA and ACT score, indicated Pell Grant eligibility, transfer GPA, and transfer credit hours earned were significant predictors. Similarly, the final model predicting overall retention rate and controlling for high school GPA and ACT score found Pell Grant eligibility, transfer GPA, and transfer credit hours earned to be significant predictors.

Several studies explored the explanatory value high school GPA and ACT/SAT score have in predicting persistence and retention rates (Aleadmoni & Oboler, 1978; Allen et al., 2008; Kuh et al., 2008; Stewart et al., 2015). Results from this study do not support prior research and found high school GPA and ACT score are not significant predictors of retention for transfer students. Transfer students have already established a record of academic success at a post-secondary institution, therefore incorporating high school GPA and ACT score in the admissions process may not be necessary.

To assess the impact of socio-economic status on retention, Pell Grant eligibility was used as a factor in this study. In order to be eligible for the Pell Grant, college students must complete the FAFSA. Prior research demonstrated access to financial aid, and particularly need-based aid, has a positive impact on retention rates (Murdock, 1987; St. John, 1998; Singell, 2004). Results of the current study support prior research and found Pell Grant eligibility to be a significant predictor of retention.

Researchers found simply filing the FAFSA can positively influence the odds of persisting (McKinney & Novak, 2012) and being retained at an institution (Singell, 2004). Nora (1900) concluded Pell Grants to be significant in the retention process. A study conducted at the University of Oregon found access to need-based financial aid (i.e. Pell Grants and subsidized student loans) positively influence retention rates (Singell, 2004). Results from the final study sample indicated being eligible for the Pell Grant had a negative impact on retention rate from semester one to semester two and overall retention. Institutional differences between the University of Oregon and the University of Louisville may explain the conflicting findings, as well as the sample populations, as the presented study focused exclusively on transfer students.

Transfer GPA and transfer credit hours can be helpful predictors when determining persistence and retention rates, and results from the present study support this claim. Cejda et al. (1998) found students who transferred from a community college with a minimum transfer GPA of 3.0 were retained and persisted toward graduation at approximately the same rate as first-time native freshmen students. When assessing retention and drop-out rates, Ishitani (2008) found semester GPAs to be the most significant predictor of drop-out. Similarly, results of this study indicate the higher the transfer GPA, the more likely a transfer student is to be retained and persist towards degree completion at their new institution.

Matriculating with college credit has been shown to have a positive impact on college GPA (Jamelske, 2008). In addition to having higher transfer GPA, results from the presented study indicate the higher amount of transfer credits earned, the more likely a student is to be retained. Overall, the final OLS regression models indicated both

transfer GPA and transfer credit hours significantly impact retention rates, both first to second semester and overall retention.

Yu, DiGangi, Jannasch-Pennell, and Kaprolet (2010) found transfer credit hours to impact retention rates differently based on race/ethnicity. Although the methods of this study did not examine the interaction between transfer credit hours and race/ethnicity, this study examined the impact race/ethnicity has on retention rates for transfer students. Researchers found race/ethnicity, along with high school achievement variables were statistically significant variables when predicting retention (Astin, 1997; Tross, Harper, Osher, & Kneidinger, 2000). Conversely, results from the presented study did not find race/ethnicity to significantly impact the likelihood of retention. The largely diverse campus of the University of Louisville and metropolitan nature of the institution may explain this finding.

The impact gender plays on retention has received mixed results. In early studies, a student's gender was significantly related to whether they would be retained (Tinto, 1975; Astin, Korn, & Green, 1987); Astin et al. (1987) found male students to be retained at higher rates than female students. However, St. John, Hu, Simmons, and Musoba (2001) found gender to fluctuate in significance based on variables in the model. Gender was not a significant predictor of retention when institutional variables were added to the model or when variables related to first-semester college GPA were added (St. John et al., 2001). Results from the presented study found gender to be an insignificant predictor of retention. Given variables related to first-semester college GPA were included in the model (i.e., pre-college academic achievement, demographic variables), results from the presented study support the findings of St. John et al. (2001).

Recommendations for Policy and Practice

Results of the present study highlight the need for improved policies and practices regarding transfer students. A comprehensive orientation program for transfer students should be developed using Nancy Schlossberg's transition theory. Surveys targeting transfer students and focus groups using transfer students from a variety of backgrounds should be incorporated in the planning process. Focus groups will allow transfer students to dive deeper into how their transition affected their academic performance at the University of Louisville and may uncover barriers and how students do or do not overcome those barriers. Transition theory serves as a foundational framework for planning and implementation, as Schlossberg's theory aims to understand transitions and how individuals cope with their transition (Schlossberg, 2011). Using Schlossberg's four S system, institutional leaders can better understand the reasons a transfer student chose to depart their prior institution and why they chose to attend another institution. Through analyzing a student's situation, inner strength to cope with the situation, their social and familial supports during the transition, and self-coping mechanisms, institutional leaders can design innovative and targeted programming to ensure a smoother transition and provide support for students who may enter the new institution at risk of dropout.

In addition to Schlossberg's transition theory, campus environment theory may play a key role in retaining transfer students. Strange and Banning (2015) indicated colleges and universities must help students resolve adjustment issues and support students to reach a point of readiness where they are capable of succeeding to benefit from the educational experience. During the planning of a comprehensive orientation and transition program for transfer students, administrators must assess how their

physical environment (condition, design, layout), aggregate environment (characteristics of people in the physical environment), organizational environment (structures related to purposes and goals), and socially constructed environments (perceptions and social context) either promote or inhibit successful transitions (Strange & Banning, 2015). Institutional leaders should develop a series of surveys that target how each of the four environmental sectors are perceived by the student population. Each survey should include an option for students to indicate their interest in participating in a focus group to gather students' narratives in relation to their institutional environments. Results of the institutional analysis should be used to remove barriers, negative perceptions, and complicated processes that shape the campus environment. The campus environment plays an integral role throughout the recruitment and matriculation processes at institutions of higher education. An improved environment may ease the transition of transfer students, thereby eliminating barriers to persistence and retention.

Moreover, retention rates are vital for all parties involved. Students who dropout and are not retained may lose scholarships, begin repayment on student loans, increase time to degree completion, and face a higher cost of degree attainment as tuition continues to rise across the United States. Universities and colleges face financial hardships when enrollment drops as many rely heavily on tuition dollars for operations. Additionally, institutional leaders are under increasing pressure to increase retention rates for national metrics, and some states use retention and degree completion rates as metrics tied to funding. As students transfer to another institution, they bring a variety of external and internal factors that can impact their chance of dropping out; individual student characteristics, family background, prior education experiences, academic and

social integration, and institution commitment all impact the likelihood of persistence and retention (Tinto, 1975).

In addition to dedicated orientation programming for transfer students, institutional leaders should consider adding a transfer-year experience office or programming, similar to the first-year experience programs at many institutions; the addition of such office may help decrease the retention rate differences between vertical and lateral transfers. Astin's (1999) theory of student involvement is a foundation model demonstrating that the greater a student's involvement at their institution, the greater the personal development and student learning. Milem and Berger (1997) conducted a study on student involvement and found student involvement with the first 6 to 7 weeks of a semester was a significant factor in persistence, and therefore retention. Students who successfully navigated the transfer and transition process should serve as student orientation leaders, mentors that aid new transfer students throughout the process. Since transfer students may assume they know the processes at their new institution, dedicated programming covering policies, office structure, and important deadlines should be clearly communicated with an emphasis that each higher education institution is setup and operates differently. A dedicated transfer year orientation course should also be included. This course should serve as an academic orientation to the new institution, lasting approximately halfway through the semester (i.e. six weeks). Two sections of the course would be ideal, with one focusing on the needs of vertical transfers and the other focusing on lateral transfers; results from the present study indicate vertical transfer students struggle more academically than lateral transfers at their new institution, meaning an increased focus on academic support services may be necessary. The new

course can facilitate relationships among students facing the same transition, allowing them to get connected to resources on campus, and become further engaged on campus with increased social support. Adding a transfer year experience program demonstrates an institution's commitment to the success of the transfer population and provides dedicated programming at the beginning of the semester to foster social belonging.

Admissions offices around the country should design a process to identify transfer students at risk of not being retained at time of admission. The present study found transfer GPAs, transfer credit hours earned prior to transfer, and Pell Grant eligibility to be significant predictors of retention. Enrollment management, admissions, and institutional research officers should collaborate on data collection and analysis to determine thresholds of success for transfer students, and those who do not meet the threshold, should be identified for targeted programming and support. Results from these early categorizations in admissions offices can be used to assign lateral and vertical transfer students to their appropriate section of the transfer year orientation course. Institutional programming and support for those at risk of dropout may increase retention rates.

Results of this study outline two recommendations for future policy. The primary recommendation in policy is to revisit articulation agreements as initial results on the effectiveness of these policies are not promising (Monaghan & Attewell, 2015). Articulation agreements can be confusing for students and families to comprehend, therefore making it difficult to make an educated decision on choosing to transfer. The vast majority of articulation agreements are designed for vertical transfer students (Ignash & Twonsend, 2000), however the present study found more than half of transfer students

entering the University of Louisville to be lateral transfers. Tinto (2006) found many low-income students begin higher education at the community college level and discovered articulation agreements do not favor low-income students when transferring. The results of the present study indicate articulation agreements can be vital in retention efforts, as Pell eligibility (for low-income students), transfer GPA, and transfer credit hours proved significant factors in determining the likelihood of being retained. Revamped transfer articulation agreements that allow more credits to transfer into another institution and work towards degree completion may decrease time to degree. Similarly, revised articulation agreements may better serve low-income students during the transfer process. The revision and addition of new transfer articulation agreements may also decrease time to degree, where on average transfer students take 5.1-5.4 years to complete a bachelor's degree compared only 4.4 years for those who do not transfer (Li, 2010).

In addition to better articulation policies, the U.S. Department of Education, state governments, and individual colleges and universities should expand financial aid and scholarships for transfer students. According to Li (2010), institutional leaders have mixed feelings about enrolling transfer students due to their inability to receive financial aid after transfers. The case outlined in Illinois which found most transfer students were only awarded loans or received no financial aid at all, is unsustainable given the recent and impending changes in higher education demographics (Hood et al., 2009). As more students begin to “shop around” for academic programs and transfer to an institution that better meets their needs, articulation policies work to ensure students do not lose academic credit during their transition.

Recommendations for Future Research

Results from the present study highlight the need for future research into differences in the transfer student population as a whole and its various subpopulations. Results indicate vertical and lateral transfer students are retained at different rates; further research is needed to investigate the differences in both subpopulations in an effort to understand why the two groups are retained at different rates.

Townsend and Wilson (2006) indicated vertical transfers often need assistance adjusting to size, culture, and academic rigor of their new institution. In an effort to better understand retention among transfer students, other known predictors of persistence and retention should be assessed. Chrystal et al. (2013) indicated class size, course difficulty, and campus size can all impact transfer shock. Students who experience a high degree of transfer shock may run the risk of dropping out, therefore affecting a student's ability to persist and be retained (Nolan & Donald, 1978; Thurmond, 2007). A multi-institutional study using institutional characteristics (i.e. campus size, average class size) may provide insight into retention differences across institutions.

Future researchers should consider adding interaction between variables known to impact retention. Reason (2003) found gender, race, socioeconomic status, high school GPA, and college GPA all to be factors related to persistence. Interactions between these variables were also related to persistence, therefore adding interaction in the study of persistence and retention should be further explored (Reason, 2003). St. John et al. (2001) concluded interactions between variables, particularly gender and other variables of retention, were present. Researchers have also found interactions between gender and race that significantly impact retention (Murtaugh, 1999; Leppel, 2002).

Categorizing the continuous variable transfer credit hours into four categorical dummy codes (freshmen, sophomore, junior, and senior) should also be explored. Academic level has also shown to be a predictor related to retention among transfer students (Duggan & Pickering, 2008). Age may also be added to determine if difference exist between traditional-aged transfer students and adult transfers.

Less quantitative measures of persistence and retention should also be explored. Wang (2009) found educational expectations upon entering college, student involvement, and math remediation to be factors relate to persistence among vertical transfer students. Incorporating student involvement, educational expectation, and math remediation in the study of retention for the transfer population as a whole may provide additional context in retention rate differences for vertical and lateral transfer students. Focus groups including both vertical and lateral transfers may also provide additional insight into barriers of persistence and retention, and provide a more holistic view of the transfer student experience.

Finally, this study should be replicated at multiple institutions. The University of Louisville is labeled a high transfer-in institution by the Carnegie Classification of Institutions of Higher Education (2017); this designation is given to institutions where at least 20 percent of entering undergraduate students are classified as transfers. In an effort to understand the transfer population nationally, the replication of this study at similar high transfer-in and those not labeled high transfer-in institutions may provide further context to the retention differences. Results may answer the following questions: 1) are high transfer-in institutions retaining transfer students at higher rates than non-high

transfer-in institutions; and 2) are there differences in retention rates between vertical and lateral transfers among high transfer-in and non-high transfer-in intuitions?

Conclusion

A small number of studies have researched the subpopulations of transfer students and most have researched transfers as a whole. This dissertation was designed to assess the differences in transfer shock and retention among vertical and lateral transfer students, attempting to address differences in the transfer student population (vertical vs. lateral transfers).

Institutional environments can affect transition and departure from institutions of higher education and may lead to increased transfer shock. Results indicated a significant difference was found in the effects of transfer shock, and on average vertical transfers experienced greater transfer shock than lateral transfers. Concerning retention, results indicated vertical and lateral transfer students were retained at approximately the same rates from semester one to semester two, and vertical transfer students were retained at a higher rate than laterals transfer students from semester two to semester three (overall retention). However, type of transfer institution was not a significant factor in predicting retention rate.

Results of this study were used to develop recommendations for policy and practice, as well as future research. Higher education institutional leaders need to refocus their attention on the transfer student population. Dedicated programming, orientation sessions, and transfer year experience courses may curb transfer shock and have a positive influence on persistence and retention rates. Although this study found type of transfer institution (community college vs. four-year institution) to not significantly

impact retention rates, results may differ across institutions. The current study adds to literature around transfer student success and fills a void in literature assessing transfer students specifically, rather than broadly. Further research is needed to support the growing number of transfer students across the United States, as well as populations other than first-time native freshmen college students.

REFERENCES

- Abdul-Alim, J. (2017). Can chess be a gateway to college? *Diverse: Issues in Higher Education*, 34(18), 15-16.
- Aleamoni, L. M., & Oboler, L. (1978). ACT versus SAT in predicting first semester GPA. *Education and Psychological Measurement*, 38, 393-399.
- Allen, J. M., Smith, C. L., & Muehleck, J. K. (2014). Pre- and post-transfer academic advising: What students say are the similarities and differences. *Journal of College Student Development*, 55(4), 353-367. DOI: 10.1353/csd.2014.0034
- Allen, J., Robbins, S. B., Casillas, A., & Oh, I. (2008). Third-year college retention and transfer: Effects of academic performance, motivation, and social connectedness. *Research in Higher Education*, 49(7), 647-664.
- Astin, A. W. (1997). How 'good' is your institution's retention rate? *Research in Higher Education*, 38(6), 647-658.
- Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 40(5), 518-529.
- Astin, A. W., Korn, W., & Green, K. (1987). Retaining and satisfying students. *Educational Record*, 68, 36-42.
- Astin, A. W., & Oseguera, L. (2005). *Degree Attainment Rates at American Colleges and Universities. Revised Edition*. Los Angeles: Higher Education Research Institute, UCLA.
- Bahr, P. R. (2012). Student flow between community college: Investigation lateral transfer. *Research in Higher Education*, 53(1), 94-121. DOI: 10.1007/s11116-011-9224-5.
- Borden, V. M. H. (2004, March-April). Accommodating student swirl: When traditional students are no longer the tradition. *Change*, 36(12), 10-17.
- Bowen, W. G., & McPherson, M. S. (2016). *Lesson plan: An agenda for change in American higher education*. Princeton, NJ: Princeton University Press.

- Braunstein, A., McGrath, M., & Pescatrice, D. (2001). Measuring the impact of financial factors on college persistence. *Journal of College Student Retention*, 2(3), 191-203.
- Braxton, J. M., Milem, J. F., & Sullivan, A. S. (2000). The influence of active learning on the college student departure process: Toward a revision of Tinto's theory. *The Journal of Higher Education*, 71(5), 569-590.
- Bridgeman, B., McCamley-Jenkins, L., & Ervin, N. (2000). *Predictions of freshman grade-point average from the revised and recentered SAT I: reasoning test (College Board Report No. 2000-1)*. New York: College Entrance Examination Board.
- Cejda, B. D. (1997). An examination of transfer shock in academic disciplines. *Community College Journal of Research and Practice*, 21(3), 279-288.
- Cejda, B. D., & Kaylor, A. J. (1997). Academic performance of community college transfer students at private liberal arts colleges. *Community College Journal of Research and Practice*, 21, 651-659.
- Cejda, B. D., Rewey, K. L., & Kaylor, A. J. (1998). The effect of academic factors on transfer student persistence and graduation: A community college to liberal arts college case study. *Community College Journal of Research & Practice*, 22, 675-686.
- Chen, R., & DesJardins, S. L. (2010). Investigating the impact of financial aid on student dropout risks: Racial and ethnic differences. *The Journal of Higher Education*, 81(2), 179-208. DOI: <https://doi.org/10.1353/jhe.0.0085>
- Chrystal, L. L., Gansemer-Topf, A., & Laanan, F. S. (2013). Assessing students' transition from community college to a four-year institution. *Journal of Assessment and Institutional Effectiveness*, 3(1), 1-18.
- Cohen, B. H. (2008). *Explaining psychological statistics* (3rd ed.). Hoboken, NJ: John Wiley & Sons, Inc.
- Cohen, A. M., & Brawer, F. B. (2008). *The American community college* (5th ed.). San Francisco, CA: Jossey-Bass.
- Craig, R. (2015). *College disrupted: The great unbundling of higher education*. New York, NY: Palgrave Macmillan.
- Crisp, G., & Delgado, C. (2014). The impact of developmental education on community college persistence and vertical transfer. *Community College Review*, 42(2), 99-117. DOI: 10.1177/0091552113516488

- Demir, M., Özen, A., & Dogan, A. (2012). Friendship, perceived mattering and happiness: A study of American and Turkish college students. *The Journal of Social Psychology, 152*(5), 659-664. DOI: 10.1080/00224545.2011.650237
- DeBerard, M. S., Speilmans, G. I., & Julka, D. C. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. *College Student Journal, 38*(1), 66-80.
- DesJardins, S. L., & McCall, B. P. (2010). Simulating the effects of financial aid packages on college student stopout, reenrollment spells, and graduation chances. *The Review of Higher Education, 33*(4), 513-541. DOI: 10.1353/rhe.0.0169
- DeVilbiss, S. E. (2014). *The transition experience: Understanding the transition of high school to college for conditionally-admitted students using the lens of Schlossberg's transition theory* (Doctoral dissertation). Retrieved from ProQuest. (UMI Number: 3618529)
- Diaz, P. E. (1992). Effects of transfer on academic performance of community college students at the four-year institution. *Community Junior College Research Quarterly of Research and Practice, 16*(3), 279-292. DOI: 10.1080/0361697920160307
- Duggan, M. H., & Pickering, J. W. (2008). Barrier to transfer student academic success and retention. *Journal of College Student Retention, 9*(4), 437-459. DOI: 10.2190/CS.9.4.c
- Eaton, J. S. (2012) *An overview of U.S. accreditation*. The Council of Higher Education Accreditation. Retrieved from <http://files.eric.ed.gov/fulltext/ED544355.pdf>.
- Elliot, G. C., Kao, S., & Gran, A. (2004). Mattering: Empirical validation of a social-psychological concept. *Self and Identity, 3*, 339-354. DOI: 10.1080/13576500444000119
- Evans, N. J., Forney, D. S., Guido, F. M., Patton, L. D., & Renn K. A. (2010). Student development in college, *Schlossberg's Transition Theory*, (pp. 212-226). San Francisco, CA: Jossey-Bass.
- Field, A. (2016). Repeated measures ANOVA. Retrieved from <http://www.discoveringstatistics.com/docs/repeatedmeasures.pdf>
- Field, K. (2008, July 25). *Cost, convenience drive veterans' college choices*. Retrieved from <http://www.chronicle.com/article/Cost-Convenience-Drive/20381>
- Flaga, C. T. (2006). The process of transition for community college transfer students. (unpublished doctoral dissertation). Michigan State University, East Lansing, MI.

- Gibson, D., & Myers, J. E. (2006). Perceived stress, wellness, and mattering: A profile of first year Citadel Cadets. *Journal of College Student Development, 47*, 647-660.
- Hayes, A. F., & Cai, L. (2007). Using heteroscedasticity-consistent standard error estimators in OLS regression: An introduction and software implementation. *Behavior Research Methods, 39*(4), 709-722.
- Heppner, P. P., Wampold, B. E., & Kivlighan, D. M. (2008). *Research design in counseling, 3rd ed.* Belmont, CA: Thomson Brooks/Cole.
- Hills, J. R. (1965). Transfer shock: The academic performance of the junior college transfer. *The Journal of Experimental Education, 33*, 201-215.
- Hoffman, J. L. (2002). The impact of student cocurricular involvement on student success: Racial and religious differences. *Journal of College Student Development, 43*(5), 712-739.
- Hood, L., Hunt, E., & Haefele, L. M. (2009). Illinois post-secondary transfer students: Experiences in navigating the higher education transfer system. *Planning and Changing, 40*(1/2), 116-131.
- Hossler, D., Shapiro, D., Dundar, A., Ziskin, M., Chen, J., Zerquera, D., & Torres, V. (2012). Transfer and mobility: A national view of pre-degree student movement in postsecondary institutions. Signature report 2. *National Student Clearinghouse*.
- Hout, M. (2012). Social and economic returns to college education in the United States. *The Annual Review of Sociology, 38*, 379-400.
DOI: 10.1146/annurev.soc.012809.102503
- Howarth, D. A. (2003). Pathways to success: A successful university/community college/public school partnership. *Metropolitan Universities: An International Forum, 14*, 78-89.
- Hoyt, J. E., & Winn, B. A. (2004). Understanding retention and college student bodies: Differences between drop-outs, stop-outs, opt-outs, and transfer-outs. *NASPA Journal, 41*(3), 395-417.
- Ignash, J. M., & Townsend, B. K. (2000). Evaluation state-level articulation agreements according to good practice. *Community College Review, 28*(3), 1-21.
- Isen, A. M., & Levin, P. F. (1972). Effect of feeling good on helping: Cookies and kindness. *Journal of Personality and Social Psychology, 21*(3), 384-388.
- Ishitani, T. T. (2008). How do transfers survive after “transfer shock”? A longitudinal study of transfer student departure at a four-year institution. *Research in Higher Education, 49*(5), 403-419. DOI: 10.1007/s11162-008-9091-x

- Ishitani, T. T., & McKittrick, S. A. (2010). After transfer: The engagement of community college students at a four-year collegiate institution. *Community College Journal of Research and Practice*, 34(7), 576-594.
- Jamelske, E. (2008). Measuring the impact of a university first-year experience program on student GPA and retention. *Higher Education*, 57, 373-391.
DOI: 10.1007/s10734-008-9161-1
- Kentucky Council on Postsecondary Education. (2012). *General education transfer: General education transfer policy and implementation guidelines (effective fall semester 2012)*. Retrieved August 12, 2017 from <http://cpe.ky.gov/policies/transfer.html>
- Kentucky Council on Postsecondary Education. (2015). *Comprehensive database reporting guidelines independent institutions 2015-2016*. Retrieved August 7, 2017 from <http://cpe.ky.gov/policies/data/2015-16guidelines-independent.pdf>
- Kirk-Kuwaye, C., & Kirk-Kuwaye, M. (2007). A study of engagement patterns of lateral and vertical transfer students during their first semester at a public research university. *Journal of the First-Year Experience & Students in Transition*, 19(2), 9-27.
- Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, 79(5), 540-563.
- Laanan, F. S., Starobin, S. S., & Eggleston, L. E. (2010). Adjustment of community college students at a four-year university: Role and relevance of transfer student capital for student retention. *Journal of College Student Retention*, 12(2), 175-209.
- Labee, D. F. (2006). Mutual subversion: A short history of the liberal and the professional American higher education. *History of Education Quarterly*, 46(1), 1-15.
- Lee, V. E., & Frank, K. A. (1990). Students' characteristics that facilitate their transfer from two-year to four-year colleges. *Sociology of Education*, 63, 178-193.
- Lee, V. E., Mackie-Lewis, C., & Marks, H. M. (1993). Persistence to baccalaureate degree for students who transfer from community college. *American Journal of Education*, 102(1), 80-114.
- Leppel, K. (2002). Similarities and differences in the college persistence of men and women. *The Review of Higher Education*, 24, 433-450.

- Li, D. (2010). They need help: Transfer students from four-year to four-year institutions. *The Review of Higher Education*, 33(2), 207-238. DOI: 10.1353/rhe.0.0131 2011.
- Mamiseishvili, K. M., & Deggs, D. M. (2013). Factors affecting persistence and transfer of low-income students at public two-year institutions. *Journal of College Student Retention*, 15(3), 409-432. DOI: <http://dx.doi.org/10.2190/CS.15.3.f>
- Marsh, C.M., Vandehey, M. A., & Diekhoff, G. M. (2008). A comparison of an introductory course to SAT/ACT scores in predicting student performance. *The Journal of General Education*, 57(4), 244-255. doi: 10.1353/jge.0.0024
- Mattson, C. E. (2007). Beyond admission: Understanding pre-college variables and success of at-risk students. *Journal of College Admission*, 196, 8-13.
- McFarland, J., Hussar, B., de Brey, C., Snyder, T., Wang, X., Wilkinson-Flicker, S., Gebrekristos, S., Zhang, J., Rathbun, A., Barmer, A., Bullock Mann, F., & Hinz, S. (2017). *The Condition of Education 2017 (NCES 2017-144)*. U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved November 11, 2017 from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2017144>
- McGee, J. (2015). *Breakpoint: The changing marketplace for higher education*. Baltimore, MD: John Hopkins University Press.
- McKinney, L., & Novak, H. (2012). The relationship between FAFSA filing and persistence among first-year community college students. *Community College Review*, 41(1), 63-85. DOI: 10.1177/0091552112469251
- Milem, J. F., & Berger, J. B. (1997). A modified model of college student persistence: Exploring the relationships between Astin's theory of involvement and Tinto's theory of student departure. *Journal of College Student Development*, 38(4), 387-400.
- Monaghan, D. B., & Attewell, P. (2015). The community college route to the bachelor's degree. *Educational Evaluation and Policy Analysis*, 37(1), 70-91. DOI: 10.3102/0162373714521865
- Monroe, A. (2006). Non-traditional transfer student attrition. *The Community College Enterprise*, 12(2), 33-54.
- Murdock, T. A. (1987). It isn't just money: The effects of financial aid on student persistence. *The Review of Higher Education*, 11(1), 75-101. DOI: 10.1353/rhe.1987.0009
- Murray, M. (2008). When war is work: The G.I. bill, citizenship, and the civic generation. *California Law Review*, 96, 967-998.

- Murtaugh, P. A., Burns, L. D., & Schuster, J. (1999). Predicting the retention of university students. *Research in Higher Education, 40*(3), 355-371.
- National Student Clearinghouse. (2015). *Snapshot report: Persistence-retention*. Retrieved November 3, 2017 from <https://nscresearchcenter.org/wp-content/uploads/SnapshotReport18-PersistenceRetention.pdf>
- Nolan, E. J., & Hall, D. L. (1978). Academic performance of the community college transfer student: A five year follow up study. *Journal of College Student Personnel, 19*(6), 543-548.
- Nora, A. (1990). Campus-based aid programs as determinants of retention among Hispanic community college students. *The Journal of Higher Education, 61*(3), 312-331.
- Nuñez, A., & Yoshimi, J. (2017). A phenomenology of transfer: Students' experiences at a receiving institution. *Innovative Higher Education, 42*(2), 173-187. DOI: 10.1007/s10755-016-9374-7
- Patton, L. D., Renn, K. A., Guido, F. M., & Quaye, S. J. (2016). *Student development in college: Theory, research, and practice*. San Francisco, CA: Jossey-Bass.
- Peng, S. S., & Bailey, J. P. (1977). Differences between vertical transfers and native students in four-year institutions. *Research in Higher Education, 7*, 145-154.
- Peng, C. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *The Journal of Educational Research, 96*(1), 3-14. DOI: 10.1080/00220670209598786
- Petrocelli, J. (2003). Hierarchical multiple regression in counseling research: Problems and possible remedies. *Measurement and Evaluation in Counseling and Development, 36*, 9-22.
- Porter, S. (1999). Assessing transfer and native student performance at four-year institutions. Paper presented at the Annual Forum of the Association for Institutional Research, Seattle, WA.
- Rall, M. R. (2016). Forgotten students in a transitional summer: Low-income racial/ethnic minority students experience the summer melt. *The Journal of Negro Education, 85*(4), 462-479. DOI: 10.7709/jnegroeducation.85.4.0462
- Rayle, A. D., & Chung, K. (2007). Revisiting first-year college students' mattering: Social support, academic stress, and the mattering experience. *Journal of College Student Retention, 9*(1), 21-37.

- Reason, R. D. (2003). Student variables that predict retention: Recent research and new developments. *NASPA Journal*, 40(4), 172-191.
- Rhine, T. J., Milligan, D. M., & Nelson, L. R. (2000). Alleviating transfer shock: Creating an environment for more successful transfer students. *Community College Journal of Research and Practice*, 24(6), 443-453.
- Roska, J. (2009). Building bridges for student success: Are higher education articulation policies effective? *Teachers College Record*, 111(10), 2444-2478.
- Roska, J., & Keith, B. (2008). Credit, time, and attainment: Articulation policies and success after transfers. *Educational Evaluation and Policy Analysis*, 30(3), 236-254. DOI: 10.3102/0162373708321383
- St. John, E. P. (1998). The effects of changes in student aid policy on persistence: A case study of a private university. *Journal of Student Financial Aid*, 28(1), 7-18.
- St. John, E. P., Hu, S., Simmons, A. B., & Musoba, G. D. (2001). Aptitude vs. merit: What matters in persistence. *The Review of Higher Education*, 24, 131-152.
- Schiavone, V., & Gentry, D. (2014). Veteran-students in transition at a Midwestern university. *The Journal of Continuing Higher Education*, 62, 29-38. DOI: 10.1080/07377363.2014.872007
- Schlossberg, N. K. (1981). A model for analyzing human adaptation to transition. *The Counseling Psychologist*, 9(2), 2-18. DOI: 10.1177/ 001100008100900202
- Schlossberg, N. K. (1989). Marginality and mattering: Key issues in building community. In *New Directions for Student Services*, 5–15. DOI: 10.1002/ss.37119894803
- Schlossberg, N.K. (2011). The challenge of change: The transition model and its implications. *Journal of Employment Counseling*, 48, 159-162.
- Shavelson, R. J. (1996). *Statistical reasoning for the behavioral sciences* (3rd ed.). Boston, MA: Allyn and Bacon, Inc.
- Singell, L. D., Jr. (2004). Come and stay a while: Does financial aid affect enrollment and retention at a large public university? *Economics of Education Review*, 23(5), 459–471.
- Stebbleton, M. J., Huesman, R. L., & Kuzhabekova, A. (2010). *Do I belong here? Exploring immigrant college student responses on the SERU survey sense of belonging/satisfaction factor*. Unpublished manuscript, Center for Studies in Higher Education, University of California Berkeley, Berkeley, California.

- Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences* (5th ed). New York, NY: Routledge.
- Stewart, S., Lim, D. H., & Kim, J. (2015). Factors influencing college persistence for first-time students. *Journal of Developmental Education*, 38(3), 12-20.
- Stewart, J., & Martinello, F. (2012). Are transfer students different? An examination of first-year grades and course withdrawals. *Canadian Journal of Higher Education*, 42(1), 25-42.
- Strange, C. C., & Banning, J. H. (2015). *Designing for learning: Creating campus environments for student success*. San Francisco, CA: Jossey-Bass.
- The Carnegie Classification of Institutions of Higher Education. (2017). Retrieved October 7, 2017 from <http://carnegieclassifications.iu.edu/>
- Thurmond, K. (2007). *Transfer shock: Why is a term forty years old still relevant?* Retrieved from <http://www.nacada.ksu.edu/Resources/Clearinghouse/View-Articles/Dealing-with-transfer-shock.aspx>
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational research*, 45(1), 89-125.
- Tinto, V. (1988). Stages of student departure: Reflections on the longitudinal character of student leaving. *The Journal of Higher Education*, 59(4), 438-455.
- Tinto, V. (2006). Research and practice of student retention: What next? *Journal of College Student Retention*, 8(1), 1-19.
- Tinto, V. (2010). From theory to action: Exploring the institutional conditions for student retention. In *Higher education: Handbook of theory and research* (pp. 51-89). Springer Netherlands.
- Tobolowsky, B. F., & Cox, B. E. (2012). Rationalizing neglect: An institutional response to transfer students. *The Journal of Higher Education*, 83(3), 389-410.
- Townsend, B. K., & Wilson, K. (2006). "A hand hold for a little bit": Factors facilitating the risk of community college transfer students to a large research university. *The Journal of College Student Development*, 47, 439-456.
- Tross, S. A., Harper, J. P., Osher, L. W., & Kneidinger, L. M. (2000) Not the usual cast of characteristics: Using personality to predict college performance and retention. *Journal of College Student Development*, 41, 323-334.
- University of Louisville Campuses. Retrieved October 9, 2017 from <http://louisville.edu/about/campuses.html>

- University of Louisville. (2015). *Common data set 2014-2015*. Retrieved October 9, 2017 from <http://louisville.edu/oapa/institutional-research-and-planning/folder.2015-08-13.2184249854/facts-and-figures-about-uofl-1/cds/2014%20-%202015%20CDS>
- University of Louisville. (2016). *Common data set 2015-2016*. Retrieved October 9, 2017 from http://louisville.edu/oapa/institutional-research-and-planning/docs/CDS_20152016FINAL.pdf
- University of Louisville. (2017). *Common data set 2016-2017*. Retrieved October 9, 2017 from http://louisville.edu/oapa/institutional-research-and-planning/quick-facts/copy_of_CDS_20162017.pdf
- University of Louisville. (2017). *Just the facts*. Retrieved October 11, 2017 from http://louisville.edu/oapa/institutional-research-and-planning/quick-facts/201617JusttheFactsweb_FINAL.pdf
- University of Louisville. (2017). *Transfer Ambassadors*. Retrieved November 10, 2017 from <http://louisville.edu/admissions/apply/transfer/services/TA>
- University of Louisville. (2017). *ULtra*. Retrieved November 10, 2017 from <http://louisville.edu/admissions/apply/transfer/ultra>
- University of Louisville Profile. (2016). Retrieved October 9, 2017 from <http://louisville.edu/about/profile>
- U.S. Census Bureau. (2012). *Educational attainment in the United States: 2009*. Retrieved from <http://files.eric.ed.gov/fulltext/ED529755.pdf>
- Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *The Review of Higher Education*, 27, 45-73. DOI: 10.1353/rhe.2003.0044
- Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science*, 331, 1447-1451.
- Wang, X. (2009). Baccalaureate attainment and college persistence of community college transfer students at four-year institutions. *Research in Higher Education*, 50(6), 570-588. DOI: 10.1007/s11162-009-9133-z
- Waugh, G., Micceri, T., & Takalkar, P. (1994, June). *Using ethnicity, SAT/ACT scores, and high school GPA to predict retention and graduation rates*. Paper presented at FAIR Conference, Orlando, FL. (ERIC Document Reproduction Service No. ED 453 704)

- Wessel, R. D., Bell, C. L., McPherson, J. D., Costello, M. T., & Jones, J. A. (2006). Academic disqualification and persistence toward graduation by financial aid category and academic ability. *Journal of College Student Retention*, 8(2), 185-198.
- Western Interstate Commission for Higher Education. (2014). *Effective collaboration and coordination: Lessons from research and practice*. Boulder, CO. Retrieved November 10, 2017 from <http://files.eric.ed.gov/fulltext/ED557762.pdf>
- Workman, J. L. (2015). Parental influence on exploratory students' college choice, major, and career decision making. *College Student Journal*, 49(1), 23-30
- Yu, C. H., DiGangi, S., Jannasch-Pennell, A., & Kaprolet, C. (2010). A data mining approach for identifying student retention from sophomore to junior year. *Journal of Data Science*, 8, 307-325.
- Zemsky, R., Wegner, G. R., & Massy, W. F. (2006). *Remaking the American university: Market-smart and mission-centered*. New Brunswick, NJ: Rutgers University Press.

CURRICULUM VITA

NAME: Joshua Harris McKee

ADDRESS: Department of Counseling and Human Development
University of Louisville
1905 S 1st Street
Louisville, Kentucky 40208

DOB: Winchester, Virginia – January 16, 1990

EDUCATION

& TRAINING: B.A., Psychology
University of Tennessee, Knoxville
2009-2012

M.Ed., Counselor Education
Concentration in Student Affairs
Clemson University
2012-2014

Ph.D., Counseling and Personnel Services
Concentration in College Student Personnel
2014-2019

AWARDS: New Professional of the Year
Southern Association for College Student Affairs
2018

PROFESSIONAL EXPERIENCE:

Workforce Solutions Manager, Louisville Metro Government
Louisville Forward, Department of Economic Development
Louisville, Kentucky
2018-Present

Assistant Director of Career Engagement, Career Development
University of Louisville
Louisville, Kentucky
2017-2018

Senior Admissions Counselor, Office of Admissions
University of Louisville
Louisville, Kentucky
2015-2017

Doctoral Graduate Intern, Dean of Students Office
University of Louisville
Louisville, Kentucky
2016

Admissions Counselor, Office of Admissions
University of Louisville
Louisville, Kentucky
2014-2015

Graduate Assistant, Center for Career & Prof. Development
Clemson University
Clemson, South Carolina
2012-2014

Graduate Intern, Office of Community & Ethical Standards
Clemson University
Clemson, South Carolina
2014

Graduate Intern, New Student & Family Programs
Clemson University
Clemson, South Carolina
2013

NATIONAL MEETING PRESENTATIONS:

Cawthon, T., Kniess, D., Walker, K., **McKee, J.**, Danyi, M. (2018, November). *Using resources to “heighten” our potential and “advocate” for students*. Presentation conducted at SACSA annual conference in Myrtle Beach, South Carolina, US.

Cawthon, T., Walker, K., **McKee, J.**, Tugas, F., & Smith, T. (2017, October). *Keeping current in the changing environment of higher education*. Presentation conducted at SACSA annual conference, Chattanooga, Tennessee, US.

McKee, J. & Spoden, E. (2016, November). *Connecting and engaging transfer students: Start there, finish here*. Presentation conducted at SACSA annual conference, Jacksonville, Florida, US.

- Cawthon, T., Walker, K., **McKee, J.**, Tugas, F., & Smith, T. (2016, November). *Connecting resources and success: Building your professional library*. Presentation conducted at SACSA annual conference, Jacksonville, Florida, US.
- Walker, K., **McKee, J.**, & Tipton, E. (2016, March). *I have to present?: Preparing for and executing an effective on-campus interview presentation*. Webinar presented for American College Personnel Association (ACPA) Career Central.
- Cawthon, T., Walker, K., **McKee, J.**, Trudell, C., & Hammett, M. (2015, November). *Your professional library: Books designed to make it grow*. Presentation conducted at SACSA annual conference, Greenville, South Carolina, US.
- McKee, J.** & Rice, T. (2015, June). *Kentucky pathways to graduation: Start there, finish here*. Presentation conducted at Kentucky and Ohio Association of College Admission Counseling, Covington, Kentucky, US.
- Cawthon, T., Walker, K., Jameison, L., **McKee, J.**, & Childress, A. (2014, November). *Achieving the Triple Crown: Scholar, practitioner, researcher*. Presentation conducted at SACSA conference, Louisville, Kentucky, US.
- Wilson, M., Nunamaker, T., Irwin, K., **McKee, J.**, & Georgiev, N. (2013, October). *The ROI of study abroad: A comparison of the impact of collaboration between study abroad and career services at two institutions*. Presentation conducted at Region VII National Association of Foreign Educators annual conference, Raleigh, North Carolina, US.
- Cawthon, T., Walker, K., Jameison, L., **McKee, J.**, & Childress, A. (2013, October). *Current resources for reinventing yourself as Carolina scholar-practitioners*. Presentation conducted at North Carolina-South Carolina College Personnel Association annual conference, Winston-Salem, North Carolina, US.

PROFESSIONAL SOCIETIES:

American Association for Employment in Education
Member June 2018 to Present

National Association of Colleges and Employers (NACE)
Member May 2018 to Present

Southern Association for College Student Affairs (SACSA)
Member May 2014 to Present

National Association of College Admissions Counseling (NACAC)
Member May 2014 to May 2015