

**The Impact of a First Year Living-Learning Community on First-Generation
College Student Academic Success and Persistence**

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Abstract

The purpose of this study was to examine the effect of participating in a first-year living learning community on academic success, defined as grade point average at the conclusion of the first year of college, and persistence to the beginning of the second year of college for first-generation college students in comparison to their continuing-generation college student peers at a regional, comprehensive, public university. Archival data were used from the institution's student information system. This study's research design utilized statistical analysis techniques to determine the relationship between participation in a first-year living learning community and academic success and persistence to the beginning of the second year of college. Twelve research questions were posed. To address these research questions, 30 hypotheses were tested using binary logistic regression models, two-factor ANOVAs, and three-factor ANOVAs. The study's sample consisted of 840 first-year students matriculating at the institution during the fall 2014 academic semester.

The results from the study indicated that participating in a first-year living learning community had a positive effect on persistence to the beginning of the second year of college for first-generation college students. First-generation college students who participated in a first-year living learning community were more than twice as likely as first-generation college students who did not participate to persist to the beginning of the second year of college. The variable academic readiness, defined as academically ready with ACT scores in a range of 21 and above and academically not ready with ACT scores in a range of 20 and below, affected the relationship between first-generation college students' participation in a first-year living learning community and academic

success. First-generation students who were academically ready for college and participated in a first-year living learning community had a higher average grade point at the completion of the first year of college than first-generation college students who were academically not ready and participated in a first-year living learning community. The findings of the study may be used by higher education leaders to better collaborate and provide the programs and services to best support first-generation college students as they navigate the transition into college.

Dedication

I dedicate this study to my family members who have supported me throughout my educational journey since kindergarten. I thank my mother, Kimberly LaPorte, and my brother, Chad Bruner, for their continued encouragement and enthusiasm as I began this journey to pursue a doctoral degree. Sincere appreciation is provided to my extended family members for their continued interest in engaging in conversations around first-generation college students as I pursued this topic for my study.

I also dedicate this study to my students, who are the backbone to my work and serve as my magnetic north in what I do on a daily basis. To all first-generation college students that I have worked with, I thank you for taking a leap of faith and choosing to honor your family by pursuing a postsecondary education. I thank you for allowing me to be a part of your journey.

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Table of Contents

Abstract	ii
Dedication	iv
Acknowledgements	v
Table of Contents	vi
List of Tables	ix
Chapter One: Introduction	1
Background	2
Statement of the Problem	5
Purpose of the Study	7
Significance of the Study	9
Delimitations	9
Assumptions	10
Research Questions	11
Definition of Terms	13
Organization of the Study	15
Chapter Two: Review of the Literature	17
First-Generation College Students	17
Living Learning Communities	31
Summary	37
Chapter Three: Methods	39
Research Design	40
Selection of Participants	40

Measurement.....	41
Data Collection Procedures.....	41
Data Analysis and Hypothesis Testing	42
Limitations	61
Summary	61
Chapter Four: Results	63
Descriptive Statistics.....	63
Hypothesis Testing.....	65
Summary.....	98
Chapter Five: Interpretation and Recommendations	100
Study Summary.....	100
Overview of the Problem	100
Purpose Statement and Research Questions	101
Review of the Methodology.....	102
Major Findings.....	102
Findings Related to the Literature.....	104
Conclusions.....	105
Implications for Action.....	105
Recommendations for Future Research	106
Concluding Remarks.....	108
References.....	110
Appendices.....	124
Appendix A. IRB Form for Baker University	125

Appendix B: IRB Approval from Baker University	131
Appendix C: IRB Form for Site of Study	133
Appendix D: IRB Approval from Site of Study	148

List of Tables

Table 1. One Year Retention Rate of First-Time, Full-Time Freshmen Excluding Transfers Beginning Fall 2009-2013.....	4
Table 2. Generation Status Frequency Table.....	63
Table 3. Gender Frequency Table.....	64
Table 4. Race Frequency Table.....	64
Table 5. Hometown Location Frequency Table.....	65
Table 6. Academic Readiness Frequency Table.....	65
Table 7. Descriptive Statistics for First-Year Academic Success Disaggregated by Generation Status and Participation in a First-Year Living Learning Community Living Learning Community.....	72
Table 8. Descriptive Statistics for Academic Success of First-Year, First-Generation College Students Disaggregated by Gender and Participation in First-Year Living Learning Community.....	82
Table 9. Descriptive Statistics for Academic Success of First-Year, First-Generation College Students Disaggregated by Race and Participation in First-Year Living Learning Community.....	83
Table 10. Descriptive Statistics for Academic Success of First-Year, First-Generation College Students Disaggregated by Hometown Location and Participation in First-Year Living Learning Community.....	84
Table 11. Descriptive Statistics for Academic Success of First-Year, First-Generation College Students Disaggregated by Academic Readiness and Participation in First-Year Living Learning Community.....	86

Table 12. Descriptive Statistics for Academic Success of First-Year, Continuing- Generation College Students Disaggregated by Gender and Participation in First-Year Living Learning Community	87
Table 13. Descriptive Statistics for Academic Success of First-Year, Continuing- Generation College Students Disaggregated by Race and Participation in First- Year Living Learning Community.....	88
Table 14. Descriptive Statistics for Academic Success of First-Year, Continuing- Generation College Students Disaggregated by Hometown Location and Participation in First-Year Living Learning Community	90
Table 15. Descriptive Statistics for Academic Success of First-Year, Continuing- Generation College Students Disaggregated by Academic Readiness and Participation in First-Year Living Learning Community	91
Table 16. Descriptive Statistics for Academic Success of First-Year Students Disaggregated by Generation Status, Participation in a First-Year Living Learning Community, and Gender.....	92
Table 17. Descriptive Statistics for Academic Success of First-Year Students Disaggregated by Generation Status, Participation in a First-Year Living Learning Community, and Race	94
Table 18. Descriptive Statistics for Academic Success of First-Year Students Disaggregated by Generation Status, Participation in a First-Year Living Learning Community, and Hometown Location	96

Table 19. Descriptive Statistics for Academic Success of First-Year Students
Disaggregated by Generation Status, Participation in a First-Year Living
Learning Community, and Academic Readiness98

Chapter One

Introduction

In 2015, nearly 11% of all students enrolled in colleges and universities across the nation identified themselves as first-generation college students (Lang, 2015). More first-generation college students continue to arrive to study at higher education institutions each year (Coffman, 2011; Davis, 2010; Smith, 2015). Attrition rates, though, have continued to rise for the first-generation student population faster than ever before (Ishitani, 2006; Lowery-Hart & Pacheco, 2011; Petty, 2014). Institutional first-generation graduation rates are lower than the graduation rates of students with at least one parent who has obtained a postsecondary credential (Nichols & Islas, 2016; Pelco, Ball, & Lockeman, 2014; Stephens, Hamedani, & Destin, 2014). First-generation college students face additional barriers to the academic and social integration into higher education than their continuing-generation peers, most notably perceiving themselves lower in academic ability than their continuing-generation peers (Gibbons & Borders, 2010; Macias, 2013; Raque-Bogdan & Lucas, 2016). Davis (2010) further reported, “first-generation college students are more likely to drop out, more likely to take longer to graduate if they do not drop out, and more likely to get less out of a college education” (p. 1).

In addition, first-generation college students must maintain a fine balance of navigating their collegiate experience while maintaining familiar relationships that may conflict with their own personal aspirations (Wang, 2014). Davis (2010) stated, “many first-generation student families see college attendance as a place where a child leaves the family behind” (p. 77). First-generation college students generally feel a need to

maintain a balance between their collegiate life and their familiar life. First-generation college students feel compelled to choose between family roles and their academic performance, often resulting in the lack of social support networks and peer engagement (Gibbons & Woodside, 2014; Petty, 2014; Vazquez-Salgado, Greenfield, & Burgos-Cienfuegos, 2015). Thus, colleges and universities across the nation must provide programmatic interventions to meet the academic and social integration transitional needs of the first-generation student population to assist the students in achieving success (Petty, 2014; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Woosley & Shepler, 2011).

Background

A regional, comprehensive, public university located in Kansas has a stable enrollment of approximately 14,000 total students. Of that total, approximately 4,500 students are enrolled on-campus, experiencing the traditional collegiate environment. Another 5,860 students are enrolled through virtual courses with an additional 3,165 students enrolled in partner institutions in China (University A, 2015a).

The institution is one of six public universities within the state higher education system. The institution complies with the 10-year strategic agenda of the state system, more commonly known as Foresight 2020, which was originally adopted in 2010. This plan stated that public higher education institutions should “achieve a 10 percentage point increase in retention and graduation rates by 2020” (Kansas Board of Regents, 2015, p. 1). This expectation has lead institutions to focus on first-to-second year retention rates.

State comprehensive public universities face challenges different from their research, land-grant, and community college peers within the system. Henderson (2007) observed state comprehensive university students “tend to be less well prepared than those at research universities or elite liberal arts colleges” (p. 7). As a result, Henderson indicated that state comprehensive universities are traditionally challenged with lower first-to-second year retention rates as well as four-, five-, and six-year graduation rates. This difference in retention is characteristic of Lattuca and Stark’s (2009) description of utilitarian mission-driven institutions. Student access to higher education is a primary purpose of utilitarian mission-driven institutions, providing training for “citizens to participate in the nation’s economic and commercial life” (p. 26).

The institution in this study shares the characteristics of the institutions described by Henderson (2007) and Lattuca and Stark (2009). The institution’s first-to-second year retention rates have historically been the lowest within the four-year institutions in the state system (Kansas Board of Regents, 2016). Table 1 summarizes the five most recent years’ data provided by the state system. Although the institution’s retention rate was fairly stable, the state system’s goal of each institution increasing first-to-second year retention rates by 10% (Kansas Board of Regents, 2015) was not met over that time period.

Table 1

*One Year Retention Rate of First-Time, Full-Time Freshmen Excluding Transfers
Beginning Fall 2009-2013 at the Kansas Institution in this Study*

	First Fall Semester of Enrollment				
	2009	2010	2011	2012	2013
Number of first-time, full-time freshman	827	869	954	949	981
Number enrolled in succeeding year	572	553	652	623	662
Retention rate	69.2%	63.6%	67.3%	65.6%	67.5%

Note. Adapted from *State University Data Book* by Kansas Board of Regents, 2016. Retrieved from http://www.kansasregents.org/data/system_data/higher_education_data_books/2016-state-university-data-book. Copyright 2016 by the Kansas Board of Regents.

Defining a first-generation college student can be a challenging task since no centralized definition exists across all institutions (Pappano, 2015). Davis (2010) provided the simplest definition of a first-generation college student. His definition stated, “neither parent or guardian [of a student] possess a four-year degree” (p. 2). However, other characteristics confound the definition including if parents attended college and did not graduate, if parents graduated with a two-year college degree, and if siblings attended college (Smith, 2015). These variances in definition present a challenge to higher education personnel as they count, identify, and describe first-generation college students (Davis, 2010; Smith, 2015).

The Kansas institution in this study utilized Ward, Siegel, and Davenport’s (2012) definition of a first-generation college student as a “student for whom neither parent attended college or a student for whom neither parent attained a baccalaureate degree” (p. 3). Approximately one half of the institution’s first-year cohort each year has identified as a first-generation college student beginning in the 2014-2015 academic year. Over 58% of first-year students ($n = 875$) at the institution during the fall 2014 semester

claimed first-generation college student status (University A, 2015b). This was the largest first-year first-generation college student cohort in the history of the institution (University A, 2015b). While the admissions and enrollment of this student population continues to grow, persistence and retention rates have not increased. When examining historical first-to-second year retention rates by student demographics, first-generation college students have historically been retained at a rate approximately 20% lower than their continuing-generation college student peers (University A, 2015b).

Statement of the Problem

The student composition in today's higher education market continues to change and diversify. As the number of first-generation college students attending college increases, the demographics of the college student population diversify, as first-generation college students are more likely to be of lower socioeconomic backgrounds and underrepresented minority groups than continuing-generation college students (Gibbons & Woodside, 2014). Researchers have examined the transitional challenges encountered by first-generation college students that provide a barrier to their success when compared to their continuing-generation college student peers (Gibbons & Woodside, 2014; Ishitani, 2006; Meetze, 2006; Pascarella, Pierson, Wolniak, & Terenzini, 2004). First-generation college students may routinely lack the cultural capital routinely associated with continuing-generation college students, thus resulting in the need for academic support and social interventions from institutions (Stephens et al., 2012). Stebleton and Soria (2012) posited that the first-generation college student population is the most unknown to many higher education administrators but perhaps the most important to focus on in the present day of the academy. Higher education

institutions have traditionally relied upon the perspective and initiative individual faculty, staff, and administrators may bring to campus to support the success of first-generation college students (Macias, 2013). Stebleton, Soria, and Huesman (2014) argued that institutions should take a more intentional approach to engage first-generation college students in high-impact experiences to increase their sense of belonging and success.

Kuh (2008) described a series of 10 high-impact educational practices that have commonly led to increased rates of retention and engagement for all students within higher education institutions. Learning communities were noted as one of the high-impact educational practices. Kuh defined a learning community as “students tak[ing] two or more linked courses as a group and work[ing] closely with one another and with their professors” (para. 1). Previous research has highlighted the effectiveness of participation in living and learning communities for improving the academic success, retention rates, and persistence rates of first year students (Stier, 2014). Kurotsuchi Inkelas, Daver, Vogt, and Brown Leonard (2007) reported that first-generation college students who participated in living learning communities were more likely to persist and succeed academically. With college completion remaining a top priority for consideration by higher education leaders across the nation (Braxton et al., 2014; Kalsbeek, 2013), the institution in this study had an opportunity to identify the influence of living learning communities, one high-impact persistence intervention strategy, to retain the at-risk student population of first-generation college students.

Purpose of the Study

This study is a replication with modifications and extensions of Kurotsuchi Inkelas et al.’s (2007) study. The influence of first-generation students’ participation in

living learning communities at a Kansas regional comprehensive public university with a growing first-generation student population was examined in this study. The benefits of participating in an intervention like a living learning community align with the academic and social transitional needs of first-generation college students. Whereas Kurotsuchi Inkelas et al. collected data from multiple institutions in various states using the National Study of Living Learning Programs, this study was designed to examine the effects of living learning communities on the academic success, defined as grade point average at the completion of the first year, and persistence to the second year of college, for first-generation college students in comparison to their continuing-generation college student peers at a single institution in Kansas. The study was also designed to examine how the variables gender, race, hometown location, and academic readiness, defined as ACT scores in ranges of 21 and above and 20 and below, influenced the academic success, defined as grade point average at the completion of the first year, and persistence to the second year of college for first-generation and continuing-generation college students participating in a first-year living learning community.

The first purpose of this quantitative study was to examine the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-generation and continuing-generation college students at a regional comprehensive public university in Kansas. A second purpose of the study was to examine the extent to which a difference existed in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students. A third

purpose of the study was to examine the relationship between participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, between first-generation and continuing-generation college students. The fourth purpose of the study was to examine if a difference existed in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students. The fifth purpose of the study was to examine to what extent the relationship between first-year first-generation college students' and first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year was affected by the variables gender, race, hometown location, and academic readiness. A sixth purpose of the study was to examine if the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students was affected by gender, race, hometown location, and academic readiness. A seventh purpose of the study was to examine to what extent the relationship between first-year first-generation college students' and first-year continuing-generation college students' participation in a first-year living learning community and academic success was affected by the variables gender, race, hometown location, and academic readiness. The final purpose of the study was to examine if the difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college

students and first-year first-generation college students was affected by gender, race, hometown location, and academic readiness.

Significance of the Study

This study contributed to an existing gap within the body of knowledge related to first-generation college students and living learning communities. Kurotsuchi Inkelas et al.'s (2007) study has been the only research that examined the first-generation college student population participating in this high-impact practice while other researchers (Jehangir, 2009; Spanierman et al., 2013; Sperry, 2015; Stebleton & Soria, 2012; Stebleton et al., 2014) have stressed the need for future research on this intersection.

Understanding how participation in a first-year living learning community correlates to persistence to the second year and to academic success can provide institutional administrators, faculty, and staff with information and practical application to further support success with first-generation college students. Responsibility for living learning communities and first-generation college student programming initiatives usually is placed within a first year experience office, residential life office, division of student affairs, or division of academic affairs. However, this study contributed to the body of knowledge related to collaboration between academic affairs and student affairs divisions.

Delimitations

Lunenburg and Irby (2008) stated, "Delimitations are self-imposed boundaries set by the researcher on the purpose and scope of the study" (p. 134). The delimitations used in the study clearly set the boundaries for the study's framework. The delimitations set by the researcher were as follows:

1. The study was conducted at one mid-sized, public, regional, comprehensive university located in Kansas.
2. The sample for the study was comprised of only first-year, full-time, on-campus, degree-seeking college students who were living in an on-campus residence hall and had graduated from high school in the year 2014.

Commuter students and students living off-campus were excluded from the study as they would not have been eligible to participate in a first year living learning community.
3. The sample for the study had continuous enrollment in the spring semester in between the two fall semesters of enrollment. A student could have attended a different institution or not attended any institution during the spring semester of her or his first year and still have persisted to the second year of college.
4. The researcher in this study analyzed the persistence to the second year and the academic success of first-generation and continuing-generation college students participating in first-year living learning communities as well as looking at the variables of gender, race, hometown communities as either urban or rural, and academic readiness defined as a range of ACT scores.

Assumptions

Lunenburg and Irby (2008) stated, “Assumptions are postulates, premises, and propositions that are accepted as operational for purposes of the research” (p. 135). The study was conducted with the following assumptions:

1. The archival data were up-to-date, accurate, and stored in a secure manner.

2. All students were correctly coded as either a first-generation or a continuing-generation student within the archival data.

Research Questions

The study addressed the relationship between participation in a first-year living learning community and first-to-second year persistence and academic success of first-generation college students through eight research questions. The first and second research questions related to the first purpose of the study. The third research question related to the second purpose of the study. The fourth and fifth research questions related to the third purpose of the study. The sixth research question related to the fourth purpose of the study. The seventh and eighth research questions related to the fifth purpose of the study. The ninth research question related to the sixth purpose of the study. The tenth and eleventh research questions related to the seventh purpose of the study. The twelfth research question related to the eighth purpose of the study.

RQ1. To what extent is there a relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college?

RQ2. To what extent is there a relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college?

RQ3. To what extent is there a difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students?

RQ4. To what extent is there a relationship between first-year first-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year?

RQ5. To what extent is there a relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year?

RQ6. To what extent is there a difference in the relationship between participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, between first-year continuing-generation college students and first-year first-generation college students?

RQ7. To what extent is the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college affected by the variables gender, race, hometown location, and academic readiness?

RQ8. To what extent is the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college affected by the variables gender, race, hometown location, and academic readiness?

RQ9. To what extent is the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students affected by gender, race, hometown location, and academic readiness?

RQ10. To what extent is the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, affected by the variables gender, race, hometown location, and academic readiness?

RQ11. To what extent is the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, affected by the variables gender, race, hometown location, and academic readiness?

RQ12. To what extent is the difference in the relationship between participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, between first-year continuing-generation college students and first-year first-generation college students affected by gender, race, hometown location, and academic readiness?

Definition of Terms

The following definitions are provided to allow for a common understanding of terminology used throughout the study.

Academic readiness. The Kansas Board of Regents (2014) utilized an “ACT score of at least 21” (p. 1) to determine qualified admissions to the state system universities. This ACT minimum score was utilized to define academic readiness in this study.

Academic success. According to Bailey (2012), academic success is defined as “a cumulative grade point average of 2.0 or higher” (p. 15).

Class-identity reformation. Hinz (2016) defined class-identity reformation as “a shift in the social class to which individuals feel they belong” (p. 285).

Continuing-generation college student. According to Leopold (2014), a continuing-generation college student is a student “with at least one parent with a four-year college degree” (para. 2).

Cultural capital. Lundberg, Schreiner, Hovaguimian and Slavin Miller (2007) defined cultural capital as “the extent to which one is comfortable and familiar with the norms and culture of the institution” (pp. 58-59).

First-generation college student. According to Ward et al. (2012), a first-generation college student is a “student for whom neither parent attained a baccalaureate degree” (p. 3).

Living learning community. Arensdorf and Naylor-Tincknell (2016) defined a living learning community as “a group of freshmen college students who live on the same floor of a residential hall,...share an interest in a common theme or major...,[and is] intentionally structured around curricular and co-curricular components” (Article 4).

Persistence. According to Habley, Bloom, and Robbins (2012), persistence is when a student “continues to enroll at the institution after matriculation” (p. 4).

Retention. Habley et al. (2012) defined retention as “a rate or percentage of students who return from one enrollment period to another” (p. 8).

Social capital. According to Nichols and Islas (2016), the three elements of social capital include “resources embedded in social structures, accessibility to those resources, and use of such resources” (p. 63).

Sophomore year of college. University A (2016) defined the sophomore year of college as when a student has completed “30-59 credit hours” (University A, 2016).

Thriving. According to Schreiner (2012), thriving is described as “optimal functioning in three key areas that contribute to student success and persistence: (a) academic engagement and performance, (b) interpersonal relationships, and (c) psychological well-being” (pp. 4-5).

Transition. Schreiner (2012) defined a transition as “an event or nonevent that is perceived as significant by the student: something occurs that was either anticipated or unexpected, or a significant event that was expected to happen does not” (p. 3).

Organization of the Study

This study consisted of five chapters. The first chapter provided the background and statement of the problem, purpose of the study and its significance to the knowledge base within higher education. It also included the specification of the 12 research questions that guided the study as well as definition of key terminology, assumptions, and delimitations. Chapter two provides a review of literature that begins with an examination of first-generation college students within higher education in today’s context. An analysis of the pre-college characteristics that influence the success of first-generation college students is provided followed by an analysis of the challenges encountered by the population as they transition into a postsecondary education environment. Featured next are the struggles first-generation college students face with navigating familiar and collegiate roles, mental health barriers encountered by the student population while enrolled in college, and degree completion barriers reported by institutions in supporting these students. Finally, a review of living learning communities

is provided that includes a review of quantitative and qualitative benefits of participation in such programs for student success. Chapter three describes the method used in conducting the research study and includes the research design, population of the study, sampling procedures, instrumentation, data collection procedures, research questions and the associated hypotheses, and limitations. Chapter four presents the results of the hypothesis testing. Chapter five provides a summary of the findings including major findings, conclusion, implications for actions, and recommendations for future research.

Chapter Two

Review of the Literature

Chapter two provides a review of the literature related to first-generation college students and living learning community programs. The first section includes a review of first-generation college students and their pre-college characteristics that likely influence their success or lack thereof during college. Next, the transition to college is described for this population including common academic and social struggles as well as support strategies utilized. Mental health challenges and barriers to success are identified. This section also focuses on the interpersonal relationships that first-generation college students must navigate as they balance their family relationships and their newfound collegiate environment. Finally, this section describes the institutional challenges for retaining and ultimately graduating first-generation college students.

The second part of chapter two concludes with a review of living learning communities. The first section includes a historical review of living learning communities and living learning communities in today's higher education context. Quantitative and qualitative academic and social benefits from participating in living learning communities are described. The final section examines the significance of living learning communities as a high-impact practice and the possibilities of success when applied to the at-risk population of first-generation college students.

First-Generation College Students

Stebbleton and Soria (2012) stated, "The number of first-generation students pursuing four-year degrees likely will continue to increase" (p. 16). In 2014, Pelco et al. reported that the number of first-generation college students at colleges and universities

had significantly increased during the past several years. Even with this student population continuing to increase in visibility across institutions nation-wide, higher education leaders know little about how to support this student population to succeed, persist, and graduate (Stebbleton & Soria, 2012). First-generation college students are more likely than their continuing-generation college students to have pre-college characteristics that ultimately place them at an immediate disadvantage to college success (Stebbleton et al., 2014). However, first-generation college students and higher education leaders have the opportunity to reframe these pre-college characteristics and shift the paradigm to view them as ways to manage stress and ultimately thrive and succeed within the college environment (Stephens, Townsend, Hamedani, Destin, & Manzo, 2015).

Pre-college characteristics. Before first-generation college students even begin attending their first college course, a number of factors will already impede the likelihood of their success when compared to their continuing-generation peers (Somers, Woodhouse, & Cofer, 2004). Engle, Bermeo, and O'Brien (2006) stated, "Preparing for and going to college is a 'leap of faith' for these students because no one else in their families has done it before them" (p. 5). Thus, first-generation college students commonly have no or lower aspirations to pursue a postsecondary education compared to continuing-generation college students (Engle et al., 2006). If they do choose to pursue a postsecondary education, they are more likely to delay their transition from high school to college, thus causing them to be even more at-risk of persisting and graduating (Stebbleton et al., 2014).

Access to pre-college information serves as one source of characteristics that may disadvantage first-generation college students. A lack of pre-college information may

impede a first-generation college-student's choice of "which college to attend and what kinds of academic and social choices to make while in attendance" (Pascarella et al., 2004, p. 252). This lack of college information while in high school is directly linked to a distinct disadvantage when first-generation college students arrive to college campuses (Lundberg et al., 2007). Moreover, first-generation college students' lack of cultural capital serves as a distinct pre-college characteristic that inhibits their likelihood of college success (Longwell-Grice & Longwell-Grice, 2008). This lack of cultural capital directly influences future academic success including college preparation, academic success strategies, behaviors and skills, and knowledge, all of which are apparent within continuing-generation college students (Engle et al., 2006; Jenkins, Belanger, Londono Connally, Boals, & Duron, 2013; Pascarella et al., 2004).

Financial knowledge and behaviors are important pre-college characteristics influencing the success of and ability for first-generation college students to thrive in a postsecondary environment. Macias (2013) reported that generally first-generation college students are more likely to be from a lower socioeconomic class. Thus, first-generation college students tend to be loan-averse, even refusing to apply for federal financial assistance, including grants, because of the negative connotation associated with loans (Engle et al., 2006; Somers et al., 2004). This lack of knowledge of the federal financial assistance system and the grants available is a direct result of limited pre-college knowledge and information available to this student population.

First-generation college students are traditionally academically unprepared to succeed within the collegiate environment (Garcia, 2015; Pelco et al., 2014; Soria, 2015). Poor academic preparation can routinely be found within first-generation college students

who have weak math skills, lack appropriate study skills, and showcase inadequate writing skills (Coffman, 2011; Macias, 2013; Sanacore & Palumbo, 2015; Soria, 2015; Stebleton & Soria, 2012). Somers et al. (2004) stated first-generation college students “have weaker cognitive skills” than continuing-generation college students (p. 421). When all these pre-college academic characteristics are coupled together, Mangan (2015) posited that first-generation college students “are more likely to arrive academically unprepared for the rigors of college” (para. 9). Thus, the need for remedial coursework is commonplace for first-generation college students upon entrance into the collegiate curriculum, often resulting in a lack of academic self-confidence (Engle et al., 2006; Mangan, 2015; Stebleton & Soria, 2012).

Stebleton and Soria (2012) stated, “First-generation students often recognize and acknowledge that they will need assistance to address the...barriers to academic success” (p. 12) needed to succeed in college. Their pre-college characteristics, though, do not have to be defined from a deficit perspective. Rather, for many first-generation college students, their motivation to attend college and pursue a baccalaureate degree is often to honor their family members (Gibbons & Woodside, 2014). Their “backgrounds...also serve as a source of strength as [first-generation college students] learn to navigate college” (Stephens et al., 2015, p. 1557).

Transition to higher education. The transition process is an integral component to student persistence. According to Schreiner (2012), “Successful transitions are integral to a student’s ability to complete and benefit from a college education, and many of the students who choose to leave college do so during transition periods” (p. 1). The transition from high school to higher education can be a challenging one for many first-

generation college students (Jenkins et al., 2013; Lohfink & Paulsen, 2005; Pascarella et al., 2004; Stephens et al., 2014). These “acculturative stressors specific to their entrance into higher education’s academic culture” may impede the transition process for first-generation college students (Jenkins et al., 2013, p. 130). Longwell-Grice and Longwell-Grice (2008) further described the transition experience to higher education for first-generation college students as an “enormous transformation as they negotiate the difficult transition into the culture of academia” (p. 407). Moreover, “the experience associated with being the first in your family to attend college and to surpass the accomplishments of family members may impact the transition to college” (Covarrubias & Fryberg, 2014, p. 427). Thus, institutions should examine and provide additional academic and social support as first-generation college students navigate the transition to the college environment (Mangan, 2015). Somers et al. (2004) stated, “First-generation students need both academic and social support from the beginning of their college experience” (p. 430).

According to Engle et al. (2006), “First-generation students describe the academic transition as one of the most difficult they have to make when they get to college” (p. 31). The types of academic courses are one direct source of this challenging academic transition. Whereas continuing-generation college students tend to thrive in courses of a more abstract nature, first-generation college students prefer and thrive more frequently in very concrete courses. Courses that challenge them to think in a more unstructured way routinely challenge first-generation college students (Nichols & Islas, 2016).

Faculty engagement or lack thereof differentiated the academic transition of first-generation college students from continuing-generation college students. First-generation

college students were fearful of engaging or conversing with their faculty members (Longwell-Grice & Longwell-Grice, 2008; Nichols & Islas, 2016; Stebleton & Soria, 2012). Routinely this was because first-generation college students viewed their faculty members as experts and lacked confidence to engage in a conversation with an expert (Nichols & Islas, 2016). Conversely, continuing-generation college students were “more likely than first-generation college students to approach and gain assistance from professors” (Nichols & Islas, 2016, p. 59).

As they gained confidence in approaching and engaging with faculty members, first-generation college students discovered a source of transitional support from their professors (Wang, 2013). Female first-generation college students routinely benefit from this transitional support through the development of relationships with female faculty and staff members who have influenced the success of their students in navigating the transition to and through college (Gibbons & Woodside, 2014). When these interpersonal relationships are appropriately cultivated and stewarded by first-generation college students, faculty and staff members have the opportunity to validate these students’ feelings and lack of cultural and social capital that may inhibit their success and thriving in college (Lundberg et al., 2007).

Social transition strategies must also be in place for first-generation college students if they are to thrive in the transition into and through the collegiate environment. Petty (2014) stated, “Many first-generation students are forced to have multiple roles while attempting to attend college” (p. 258). These multiple roles may pose a challenge for them to develop a social support system. However, having this social support system is critical to their success and ability to thrive in transition (Gibbons & Woodside, 2014).

“First-generation students may feel a cultural, social, and emotional disconnect from campus life” (Stebbleton & Soria, 2012, pp. 14-15). Failure to establish this social support will affect first-generation college students not only in the present but also in the future with a non-existent professional network that can be relied upon for career exploration and advancement (Tate et al., 2015).

A barrier to overcome for first-generation college students in the transition to college is the development of authentic connections with others. First-generation college students on college campuses lack a community of their fellow first-generation college student peers (Braskamp, Braskamp, & Glass, 2015; Gibbons & Woodside, 2014; Orbe, 2004). According to Jenkins et al. (2013), “Supportive peer relationships are important for adaptation to college and may be more difficult for first-generation undergraduates to establish” (p. 131). This is directly caused by first-generation college students’ more infrequent experiences in establishing interpersonal relationships and friendships with peers (Lundberg et al., 2007; Soria, 2016).

Co-curricular engagement through student clubs and organizations is one avenue for first-generation college students to build a community of peers and improve interpersonal communication skills. Pascarella et al. (2014) stated, “The social capital gained through extracurricular...involvement during college may be a particularly useful way for first-generation students to acquire the additional cultural capital that helps them succeed” (p. 278). When compared to their continuing-generation college student peers, first-generation college students achieved more significant gains in critical thinking skills as a result of co-curricular involvement (Garcia, 2015; Pascarella et al., 2004). Fear of financial struggles, though, may constrain a first-generation college student’s deep and

meaningful involvement in co-curricular experiences. According to Lundberg et al. (2007), “Financial need may limit first-generation students’ involvement in campus experiences, as they invest more time off campus to support themselves and their families” (p. 58).

As they have navigated this transitional period, first-generation college students have found themselves identifying a potential cultural mismatch between their personal norms and values and those values espoused and enacted by higher education institutions (Tibbetts et al., 2016). “Whereas a culture of independence may be familiar and comfortable to middle-class students, it can be experienced as threatening by many first-generation students who may have been socialized with more interdependent norms” (Tibbetts et al., 2016, p. 636). Soria (2016) described the hidden curriculum as “the norms, values, beliefs, and processes of socialization that students learn but are not overtly taught” (p. 32) as a significant barrier to their transition to the academy. Thus, first-generation college students must begin to rely more on their individual skills, behaviors, and knowledge to navigate this transition process in order to thrive and succeed (Nichols & Islas, 2016). First-generation college students who can utilize their background, motivations for attending college, and desire for upward social mobility as sources of strength to navigate this transitional experience can positively influence their likelihood of student success, thriving, persistence, and graduation (Engle et al., 2006; Lightweis, 2014; Stephens et al., 2015).

Mental health struggles. While financial pressure is a daunting challenge articulated by them, mental health struggles are challenges often unstated but apparent in first-generation college students that affect their likelihood of persisting and thriving in

college (Braskamp et al., 2015). According to Tibbetts et al. (2016), “The social-class achievement gap may also reflect psychological factors related to how first-generation students experience the college environment” (pp. 635-636). Examples of such mental health challenges encountered by first-generation college students include lack of a sense of belonging, confidence, coping strategies, and resiliency.

First-generation students routinely described lacking a sense of belonging on college campuses (Braskamp et al., 2015; Engle et al., 2006; Owens, Lacey, Rawls, & Holbert-Quince, 2010; Sanacore & Palumbo, 2015; Stebleton et al., 2014). Williams and Ferrari (2015) defined a sense of belonging as “the perception of inclusion within college climates along with welcoming, affirming, and supportive interactions and environments from the institution” (p. 379). First-generation college students have a need for acceptance on college campuses (Gibbons & Woodside, 2014). However, first-generation college students are more likely to identify as outsiders on college campuses, citing feelings of alienation and isolation (Lundberg et al., 2007; Stebleton & Soria, 2012).

First-generation college students also noted a lack of self-confidence that impedes their success and thriving in college (Somers et al., 2004; Stebleton & Soria, 2012). Imposter syndrome is a routinely cited source of a lack of self-confidence within first-generation college students. Stebleton and Soria (2012) defined imposter syndrome as “a dissociative state in which estranged first-generation students may never feel confident, grounded or socially connected to their academic experience on campus” (p. 15). Imposter syndrome may also result in other mental health challenges for first-generation college students including frequent self-doubt, a lack of self-efficacy,

decreased ability to advocate on behalf of oneself, and performance fatigue (Lang, 2015; Nichols & Islas, 2016; Olive, 2008; Sanacore & Palumbo, 2015).

Jenkins et al. (2013) stated, “Adapting to a new cultural environment is often stressful” (p. 131). With this class-identity reformation, first-generation college students reported more frequent feelings of depression and stress that negatively influenced their academic success compared to their continuing-generation peers (Stebbleton & Soria, 2012; Stebleton et al., 2014; Wang 2013). “Until and unless [first-generation college students] can acquire the needed cultural capital by a process of acculturation into academic culture and its related institutional processes, first-generation students are likely to experience more frustration failure” (Jenkins et al., 2013, p. 130).

Family-related issues are frequent sources of stress for first-generation college students (Wang, 2013). First-generation college students routinely experience family achievement or survivor guilt (Somers et al., 2004), defined by Covarrubias and Fryberg (2014) as “guilt because they earned the opportunity to attend college and, in doing so, surpassed the achievements of close others” (p. 420). Thus, a first-generation college student’s physical, mental, and emotional health and wellbeing is directly correlated to being able to cope with this survivor or family achievement guilt (Covarrubias, Romero, & Trivelli, 2015; Wiggins, 2011).

These coping strategies can present a problem for first-generation college students navigating collegiate life. A psychological support network must be in place to allow for first-generation college students to cope with stress and feelings while establishing a community and a sense of belonging (Coffman, 2011; Stephens et al., 2014). However, first-generation college students cannot simply duplicate the coping strategies and

support networks utilized by continuing-generation college students. According to Stephens et al. (2015), “The pressure to assimilate to the mainstream middle-class culture by covering, or hiding meaningful identities, may exact a serious toll on students’ ability to cope with stress and their subsequent health” (p. 1564). Thus, first-generation college students need to recognize and incorporate their unique familiar backgrounds in building a supportive network and utilizing appropriate coping strategies (Wang, 2013).

First-generation college students who were successful in persisting and thriving in college were able to shift their mindsets from a deficit perspective to one of independence, motivation, and responsibility (Tate et al., 2015). Resiliency was also noted by first-generation college students as a significant shift in perspective to not only persisting and thriving but also honoring their family members (Wang, 2013). Those first-generation college students who were more resilient in overcoming setbacks were more likely to persist, thus necessitating a needed focus on establishing the skill in students (Macias, 2013, Pascarella et al., 2004; Stephens et al., 2014).

Family engagement and interaction. Parents and family members play a significant role in the lives of college students (Baier, Markman, & Pernice-Duca, 2016). When their children made the decision to attend college, parents and family members identified feelings of anxiety related to how their college students will succeed (Engle et al., 2006). First-generation college students navigate familiar relationships differently than their continuing-generation college student peers. Covarrubias et al. (2015) stated, “The family context may be a particularly central reference point among first-generation college students...because of how families are valued and prioritized” (p. 2032). Continuing-generation college students frequently utilized their parents as a form of

social capital to succeed in the transition to college (Nichols & Islas, 2016). However, the complicated family relationships for first-generation college students may challenge them more during their transition to college due to their parents' lack of college experiences (Lang, 2015; Orbe, 2008; Wang, 2013).

Family time and values management are two challenges encountered by first-generation college students in transition to college. Vazquez-Salgado et al. (2015) reported that the greatest conflict encountered by first-generation college students in navigating familiar balance is the “conflict between internalized demands for family obligation behaviors and internalized demands for academic performance” (p. 272). First-generation college students were routinely caught between home and school work choices, perhaps even deviating from the traditional familiar expectations, resulting in external conflict and inner turmoil (Mangan, 2015; Olive, 2008; Soria, 2016; Vazquez-Salgado et al., 2015). These competing family relationships negatively influenced the academic performance of first-generation college students attending college (Stebbleton & Soria, 2012).

First-generation college students strive to bring honor to their family members, who serve as their primary inspiration and motivation to attend college (Engle et al., 2006; Olive, 2008; Vazquez-Salgado et al., 2015). However, this primary focus on the family routinely leads to family achievement guilt within these students (Stephens et al., 2015). Covarrubias et al. (2015) defined family achievement guilt as “guilt that makes students feel uncomfortable for having more higher education opportunities and college success than their family members” (p. 2032). “First-generation college students...may feel that their individual academic achievements may disrupt the harmony of existing

family relationships that are based on collective family needs and obligations” (Covarrubias et al., 2014, p. 2032).

The feeling of family achievement guilt is only one example of the family relationship differences encountered by first- and continuing-generation college students. Parents who had graduated with a college degree were more likely to tell their college students to seek out advice and converse with faculty members and engage in meaningful conversations about decision-making processes (Nichols & Islas, 2016). The analogy of being pushed and being pulled through the college experience can perhaps best exemplify the experiences of the first- and continuing-generation college students and their parents as they navigate the college transition experience. Nichols and Islas (2016) stated, “Students whose parents have at least a bachelor’s degree are pulled through their first year with specific advice from their parents about how to succeed in college while first-generation college students are pushed by their parents with support” (p. 59). First-generation college students being pushed through college have the opportunity to enhance their problem-solving skills as they navigate and determine the answers to their own problems (Nichols & Islas, 2016).

The difference in values between a first-generation college student and an institution of higher education itself can also serve as a source of transitional challenge. First-generation college students “tend to straddle two cultures, that of the college community and that of [their] home environment” (Wiggins, 2011, p. 2). Vazquez-Salgado et al. (2015) noted a looming challenge for first-generation college students in transition when they bring their personal values that are more collectivist in nature to an institution of higher education that is more individualistic by design. Thus, “first-

generation college students have difficulty adjusting to an individualistic college environment...[because of] the collectivistic values they bring with them to college” (Vazquez-Salgado et al., 2015, p. 274). Raque-Bogdan and Lucas (2016) argued that first-generation college students routinely felt that they had to disregard these collectivist values that they held if they were to successfully transition and succeed in college.

Institutional challenges. Recognizing these barriers to success while in colleges, Wiggins (2011) stated, “More can be done to improve college retention and graduation rates of first-generation students at American colleges and universities” (p. 3). Colleges and universities are aware of the retention risk routinely associated with first-generation college students and their likelihood of persisting being lower than their continuing-generation college student peers (Engle et al., 2006; Ishitani, 2006; Pelco et al., 2014; Petty, 2014; Somers et al., 2004; Stephens et al., 2014; Tate et al., 2015). However, institutions must be aware of the academic struggles of these students that impede not only persistence but also degree completion (Tibbetts et al., 2016).

For those who do succeed in the transition to college and persist to a second semester, first-generation college students still face challenges when trying to complete a baccalaureate degree. First-generation college students routinely completed fewer credit hours during their first year than continuing-generation college students (Pascarella et al., 2004). First-generation college students who persisted to a second semester were more likely to leave at the end of that semester than continuing-generation peers (Pascarella et al., 2004). First-generation college students returning for a second and a third year were found to still have consistently lower grade point averages than continuing-generation students (Pascarella et al., 2004). Ultimately, these challenges resulted in

significant decreases in the likelihood of completing a degree. Ishitani (2006) stated, “Being a first-generation student reduced the odds of graduating in four and five years by 51% and 32%, [respectively]” (p. 880).

Colleges and universities have an opportunity to shift the paradigm of support for first-generation college students from a deficit approach. First-generation college students take great pride in succeeding and graduating (Gibbons & Woodside, 2014; Soria, 2016). However, first-generation students “who dropped out of college believed they needed to figure out how to do college on their own” (Lightweis, 2014, p. 466). Instead, when higher education institutions shift this paradigm, they have an opportunity to not only improve retention rates but also provide a holistic support system for student success. According to Tibbetts et al. (2016), “When the university culture was depicted as more interdependent (with an emphasis on working together, participating in collaborative research, and learning from others), first-generation students performed as well” as continuing-generation college students (p. 636).

Living Learning Communities

Colleges and universities have embraced living learning communities because of the possibility of life-changing experiences for those students who participate in them (Kuh, 2008). Living learning communities can trace their earliest beginnings to English universities’ social clubs and then later to similar establishments at the colonial colleges (Brower & Kurotsuchi Inkelas, 2010). Since then, “living-learning programs have emerged as one of many institutional responses to calls for strengthening the undergraduate educational experience, delivering supportive services targeted to particular populations and recruiting high-talent students” (Soldner & Szelenyi, 2008,

p. 15). Arensdorf and Naylor-Tincknell (2016) stated, “Learning communities provide value-added social and psychological benefits to the students who participate” (p. 13).

Mission. Living learning communities serve a variety of purposes for institutions of higher education. One of the primary purposes of living learning communities is to provide a seamless academic and social transition for students from high school to the collegiate environment (Brower & Kurotsuchi Inkelas, 2010; Garrett & Zabriskie, 2003; Kurotsuchi Inkelas, Johnson, et al., 2006; Kurotsuchi Inkelas, Vogt, Longerbeam, Owen, & Johnson, 2006; Stassen, 2003). To accomplish this central mission, “learning communities are intentionally structured around curricular and co-curricular components with the goal that students will form a community sooner during their collegiate experience and develop deep connections with faculty members and fellow students” (Arensdorf & Naylor-Tincknell, 2016, p. 1). Integration of the curriculum and co-curriculum allows living learning community students the opportunity for critical reflection that supports this academic and social transition (Ellett & Schmidt, 2011).

Academic engagement, support, and transition are primary purposes of the implementation of learning communities for many colleges and universities (Soldner & Szelenyi, 2008). Through the implementation of living learning communities, higher education institutions strive to establish “a learning environment that helps support [students’] academic success” (Stassen, 2003, p. 595). Focusing on the learning element of the living learning communities provides students with the opportunity to expand their academic experiences through common coursework with peers and integration of these learning experiences throughout their university life (Kurotsuchi Inkelas, Vogt, et al., 2006).

Learning communities also support the student social transition into the collegiate environment through harnessing the power of peers into a supportive network that supports student engagement and, ultimately, persistence and retention (Ericksen & Walker, 2015; Kurotsuchi Inkelas, Johnson, et al., 2006). The peer networks derived from living learning communities serve as conduits for student involvement and engagement across campus as well as peer-to-peer interaction (Garrett & Zabriskie, 2003; Kurotsuchi Inkelas, Johnson, et al., 2006). More recently, learning communities have been utilized by colleges and universities to increase students' commitment to civic and community engagement (Rowan-Kenyon, Soldner, & Kurotsuchi Inkelas, 2007).

Persistence and retention benefits of participation. Living learning communities have been reported to produce various types of benefits for student participants. First-year students who participate in living learning communities persist at a higher rate than non-participant first-year students (Ericksen & Walker, 2015; Hotchkiss, Moore, & Pitts, 2006; Kurotsuchi Inkelas, Johnson, et al., 2006; Kurotsuchi Inkelas, Vogt, et al., 2006; Murphy, 2010; Rowan-Kenyon, Soldner, & Kurotsuchi Inkelas, 2007; Stassen, 2003). In addition, students who participated in them cited living learning communities with several behaviors that positively influenced persistence including establishing a sense of belonging, satisfaction with the institution, and an affirmation of the decision to attend (Soldner & Szelenyi, 2008; Spanierman et al., 2013; Stassen, 2003).

Academic engagement results of participation. Academic engagement and transition is central to the purpose of implementing living learning communities (Rowan-Kenyon et al., 2007). Soldner and Szelenyi (2008) stated, "It is the unique educational

activities in which [learning community] students engage that are believed to help promote learning” (p. 21). Thus, studies have successfully correlated involvement in living learning communities to the establishment of a sense of academic support as well as increased academic self-confidence in participants (Brower & Kurotsuchi, 2010; Spanierman et al., 2013). Moreover, living learning community students attained higher grade point averages than those students choosing not to participate (Baier et al., 2016; Ellett & Schmidt, 2011; Hotchkiss et al., 2006; Kurotsuchi Inkelas, Johnson, et al., 2006; Stassen, 2003).

Beyond the quantitative skills associated with academic performance in courses, student participants derived additional academic behaviors and skills as a result of participating in living learning communities. Students were introduced to collaborative learning techniques and engaged with peers more frequently than non-learning community students to apply this method of learning (Arensdorf & Naylor-Tincknell, 2016; Spanierman et al., 2013; Stassen, 2003). The nature of the living learning community allowed conversations within courses to extend to out-of-class experiences, transcending to greater academic engagement and support for struggling students (Felten, Gardner, Schroeder, Lambert, & Barefoot, 2016). Living learning community students demonstrated stronger study skills than non-participants (Arensdorf & Naylor-Tincknell, 2016; Stassen, 2003). Gains in critical thinking skills were attributed to participation in living learning communities (Brower & Kurotsuchi Inkelas, 2010; Garrett & Zabriskie, 2003; Rowan-Kenyon et al., 2007; Soldner & Szelenyi, 2008). Learning community students were also more likely to engage in other high-impact practices such as undergraduate research (Brower & Kurotsuchi Inkelas, 2010). Finally, living learning

community student participants showed increases in liberal learning, defined as “an appreciation of a broad education; openness to opposing views; ability to discuss controversial issues; and enjoyment of art, music, and cultural diversity” (Kurotsuchi Inkelas, Johnson, et al., 2006).

Interpersonal interaction. Faculty engagement is a core component of the living learning community program design (Arensdorf & Naylor-Tincknell, 2016). This engagement is intentionally embedded based on the principle that “student-faculty interactions that extend beyond the classroom have significant effects on a host of student outcomes including academic achievement, personal and intellectual development, persistence, and degree attainment” (Ellett & Schmidt, 2011, p. 28). Living learning community student participants were more likely to cite comfort in authentically engaging with faculty members as a direct result of their participation in the program (Felten et al., 2016; Garrett & Zabriskie, 2003; Kurotsuchi Inkelas, Vogt, et al., 2006; Rowan-Kenyon et al., 2007; Soria, 2016; Stassen, 2013). Learning community students cited that these “supportive, nurturing relationships with faculty...were more caring, mentor-like, and friendlier than those of typical college students” (Arensdorf & Naylor-Tincknell, p. 10). These faculty relationships extended beyond the students’ direct years of participation in the living learning communities; these mentoring relationships endured throughout the students’ tenure as undergraduate students and even served as the catalyst for other opportunities and experiences (Arensdorf & Naylor-Tincknell, 2016; Kurotsuchi Inkelas, Johnson, et al., 2006).

Interpersonal engagement as a direct result of participating in a living learning community extended beyond faculty members to also include peers (Garrett & Zabriskie,

2003; Rowan-Kenyon et al., 2007; Spanierman et al., 2013; Stassen, 2003). Students cited participants in a living learning community as an invaluable strategy to assist them in socially transitioning to collegiate life (Ericksen & Walker, 2015; Kurotsuchi Inkelas, Johnson, et al., 2006; Rowan-Kenyon et al., 2007; Soldner & Szelenyi, 2008; Spanierman et al., 2013). These students made connections much sooner with each other due to the nature of being in a living learning community whereas non-participants cited limited or non-existent engagement with their peers early on in their first year of attendance (Arensdorf & Naylor-Tincknell, 2016). This stronger sense of community with fellow peers early on lead to learning community students making better choices about the use of alcohol and other drugs during their formative early years of college (Brower & Kurotsuchi Inkelas, 2010).

Peer engagement and social interactions continued beyond a living learning community student's first year of enrollment. Students cited the living learning community experience as a leadership catalyst (Spanierman et al., 2013) for other involvement and engagement opportunities. Thus, learning community students were more apt to seek assistance when needed for campus resources and personal skills (Kurotsuchi Inkelas, Vogt, et al., 2006). Finally, students participating in living learning communities were more likely to mentor other students (Brower & Kurotsuchi Inkelas, 2010).

Engagement with peers within the residential community were positively influenced by living learning communities. According to Spanierman et al. (2013), "students' living environments...play a role in their sense of community and belonging" (p. 310). Students who had participated in a living learning community viewed their

residence hall environments as “academically and socially supportive” (Kurotsuchi Inkelas, Johnson, et al., 2006).

Multicultural and civic engagement. A living learning community has a unique opportunity to expose students to different ideas and experiences that can provide a foundation to global citizenship and engagement (Kurotsuchi Inkelas, Johnson, et al., 2006). Students participating in living learning communities were more likely to engage in discussions of equity, diversity, and inclusion (Kurotsuchi Inkelas, Johnson, et al., 2006), participate in activities of multicultural student organizations, and intentionally engage with people from diverse backgrounds different from their own (Spanierman et al., 2013). Living learning community student participants also had a heightened sense of civic and social responsibility (Rowan-Kenyon et al., 2007). These students were more apt to volunteer within the community as well as take service-learning courses throughout their second, third, and fourth years of undergraduate study (Brower & Kurotsuchi Inkelas, 2010).

Summary

Multiple barriers influence persistence of first-generation college students. However, there are also several predictors of the likelihood of persistence for this student population. First-generation college students are more likely to persist and succeed in a transition if they live in a campus residence hall, engage in academic coursework, and intentionally develop relationships with their faculty members (Somers et al., 2004). Living learning communities can serve as sources for these early predictors of persistence and success. They can provide first-generation college students with the social engagement and transition needed to succeed through the development of a supportive

network of peers (Jehangir, 2009; Spanierman et al., 2013). These interpersonal relationships and contact with their peers is directly related to the persistence and success of first-generation college students, even if they may not realize it at the time of participation (Kurotsuchi Inkelas et al., 2007).

Based on the results of their studies, researchers have called for the intentional participation of first-generation college students in high-impact practices, such as learning communities, due to the sense of belonging they can provide that might be lacking for these students (Stebbleton et al., 2014). However, first-generation college students tend to not participate in these experiences and, thus, struggle in the academic and social transition to postsecondary education (Kurotsuchi Inkelas et al., 2007; Stebleton & Soria, 2012). Stebleton and Soria (2012) stated learning communities should be recommended for first-generation college students in their first year. These programs may “act as the conduit through which the innate interests and abilities of first-generation students are valued and cultivated in ways that contribute to their ultimately successful transition to college” (Kurotsuchi Inkelas et al., 2007, p. 423). Sperry (2015) emphasized the need for future research to examine the influence of first-year, first-generation college students participating in learning communities.

Chapter Three

Methods

This research was a replication with modifications and extensions of Kurotsuchi Inkelas et al.'s (2007) study to determine the influence of first-generation students' participation in living learning communities at a Kansas regional comprehensive public university with a growing first-generation student population. The benefits of participating in an intervention like a living learning community align with the academic and social transitional needs of first-generation college students. Whereas Kurotsuchi Inkelas et al. collected data from multiple institutions in various states using the National Study of Living Learning Programs, this study examined the effects of living learning communities on the academic success and persistence of first-generation college students in comparison to their continuing-generation college student peers at a single institution in Kansas. This quantitative study examined the relationship between participation in a first-year living learning community and academic success, defined as grade point average at the end of the first year, and persistence to the second year of college for first-generation and continuing-generation college students at a regional comprehensive public university in Kansas. The extent to which a difference existed in the relationship between participation in the first-year living learning community and academic success and participation in the first-year living learning community and persistence to the second year of college were analyzed between the two generational student populations. The study also examined the extent to which the variables gender, race, hometown location, and academic readiness affected the relationship between participation in the first-year living learning community and academic success and persistence to the second year of

college for both student populations. This chapter provides an overview of the research methodology utilized in this study including descriptions of the research design, selection of participants, measurement, data collection procedures, data analysis and hypothesis testing, and limitations.

Research Design

The quantitative methodology used in this study involved the application of statistical analysis techniques to hypothesis testing. Creswell (2014) stated, “Examining the relationships between and among variables is central to answering questions and hypotheses” (p. 155). The dependent variables in this study were persistence, measured as being enrolled on the 20th day of courses in the second year; and academic success, measured as grade point average at the completion of the first year. The independent variables were generation status, participation in a first-year living learning community, gender, race, hometown location, and academic readiness.

Selection of Participants

The population for this study included all first-year first-generation and continuing-generation college students enrolled at the institution during the fall 2014 academic semester. The sample for this study included first-time, full-time, on-campus, degree-seeking students who had graduated high school in 2014, began their first semester at the institution during the fall 2014 semester, and resided in an on-campus residence hall. Only first-time, full-time, on-campus, degree-seeking students who graduated high school within the past 12 months of their first enrollment semester who resided in an on-campus residential facility were eligible to participate in a first-year living learning community. The nonrandom sampling method used in this study was

purposive sampling. Lunenburg and Irby (2008) defined purposive sampling as “selecting a sample based on the researcher’s experience or knowledge of the group to be sampled” (p. 175).

Measurement

Archival data from the institution’s student information system were used for this study. The categorical variable of generation status included first-generation college student, a student for whom neither parent has obtained a baccalaureate degree, or continuing-generation college student, a student for whom at least one parent has obtained a baccalaureate degree. The categorical variable of participation in a first-year living learning community included the classifications of participated or did not participate. The categorical variable of gender included male or female. The categorical variable of race included white or other. The categorical variable of hometown location included the classifications of urban or rural as defined by the U.S. Census Bureau (2015). An urban area was defined as having a population of at least 50,000 people whereas a rural area was defined as having a population below 50,000 people (U.S. Census Bureau, 2015). The categorical variable of academic readiness involved recoding ACT scores into a range of 21 and above, classified as academically ready, and 20 and below, classified as academically not ready. These categories were determined using the state system’s qualified admissions standards (Kansas Board of Regents, 2014).

Data Collection Procedures

The researcher submitted a request for approval of the study through the Baker University Institutional Review Board (IRB) on December 13, 2016 (see Appendix A). The researcher was granted approval to conduct research from the IRB committee on

December 15, 2016 (see Appendix B). In addition, a request to conduct research was submitted to the IRB at the site of the study on December 30, 2016 (see Appendix C). The researcher was granted approval to conduct research from the IRB committee on January 26, 2017 (see Appendix D).

Archival data were collected from the student information system at the selected institution site. The data included the student's name, generation status, first-year living learning community participation status, gender, race, ACT score, first-year cumulative grade point average, enrollment at the institution on the 20th day of the fall semester in the second year, and hometown city and state. Hometown cities were manually coded as urban or rural using the United States Census Bureau's (2015) urban and rural classification system. Once all data were collected student names were deleted, and each row of data was assigned an identification number for confidentiality purposes. Data were organized into a Microsoft Excel document and input into IBM SPSS Statistics 24 for analysis.

Data Analysis and Hypothesis Testing

The following section includes the 12 research questions, the associated hypotheses, and the analyses.

RQ1. To what extent is there a relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college?

H1. There is a statistically significant relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

Three binary logistic regression models were analyzed to address the potential relationship between the best subsets combination of the independent variables with the binary dependent variable, persistence. Binary Logistic Regression Model 1 (BLRM 1), which was used to address RQ1, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the single variable first-year living learning community participation status term provided evidence to support H1. All hypothesis testing was conducted at $\alpha = .05$.

RQ2. To what extent is there a relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college?

H2. There is a statistically significant relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

Binary Logistic Regression Model 2 (BLRM 2), which was used to address RQ2, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the single variable first-year living learning community participation status term provided evidence to support H2. All hypothesis testing was conducted at $\alpha = .05$.

RQ3. To what extent is there a difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students?

H3. There is a statistically significant difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

Binary Logistic Regression Model 3 (BLRM 3), which was used to address RQ3, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and generation status term provided evidence to support H3. All hypothesis testing was conducted at $\alpha = .05$.

RQ4. To what extent is there a relationship between first-year first-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year?

H4. There is a relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

A two-factor analysis of variance (ANOVA) was conducted to test H4. The two categorical variables used to group the dependent variable, academic success, which defined as first-year cumulative grade point average, were first-generation college

students' first-year living learning community participation status (participated, did not participate) and gender (male, female). The two-factor ANOVA can be used to test three hypotheses including a main effect for first-generation college students' first-year living learning community participation status, a main effect for gender, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x gender). The main effect for first-generation college students' first-year living learning community participation status was used to test H4. All hypothesis testing was conducted at $\alpha = .05$.

RQ5. To what extent is there a relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year?

H5. There is a statistically significant relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

A second two-factor ANOVA was conducted to test H5. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were continuing-generation college students' first-year living learning community participation status (participated, did not participate) and gender (male, female). The two-factor ANOVA can be used to test three hypotheses including a main effect for continuing-generation college students' first-year living learning community participation status, a main effect for gender, and a two-way interaction effect (continuing-generation college students' first-year living learning community participation status x gender). The main effect for continuing-generation

college students' first-year living learning community participation status was used to test H5. All hypothesis testing was conducted at $\alpha = .05$.

RQ6. To what extent is there a difference in the relationship between participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, between first-year continuing-generation college students and first-year first-generation college students?

H6. There is a statistically significant difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students.

A third ANOVA, a three-factor ANOVA, was conducted to test H6. The three categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were college students' living learning community participation status (participated, did not participate), gender (male, female), and generation status (first-generation, continuing-generation). The three factor ANOVA can be used to test seven hypotheses including a main effect for college students' first-year living learning community participation status, a main effect for gender, a main effect for generation status, a two-way interaction effect (college students' first-year living learning community participation status x gender), a two-way interaction effect (college students' first-year living learning community participation status x generation status), a two-way interaction effect (generation status x gender), and a three-way interaction effect (college students' first-year living learning community participation status x gender x generation status). The two-way interaction effect for

college students' first-year living learning community participation status by generation status was used to test H6. All hypothesis testing was conducted at $\alpha = .05$.

RQ7. To what extent is the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college affected by the variables gender, race, hometown location, and academic readiness?

H7. The variable gender affects the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 1, which was used to address RQ7, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and gender term provided evidence to support H7. All hypothesis testing was conducted at $\alpha = .05$.

H8. The variable race affects the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 1, which was used to address RQ7, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year

living learning community participation status and race term provided evidence to support H8. All hypothesis testing was conducted at $\alpha = .05$.

H9. The variable hometown location affects the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 1, which was used to address RQ7, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and hometown location term provided evidence to support H9. All hypothesis testing was conducted at $\alpha = .05$.

H10. The variable academic readiness affects the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 1, which was used to address RQ7, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and academic readiness term provided evidence to support H10. All hypothesis testing was conducted at $\alpha = .05$.

RQ8. To what extent is the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence

to the beginning of the second year of college affected by the variables gender, race, hometown location, and academic readiness?

H11. The variable gender affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 2, which was used to address RQ8, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and gender term provided evidence to support H11. All hypothesis testing was conducted at $\alpha = .05$.

H12. The variable race affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 2, which was used to address RQ8, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and race term provided evidence to support H12. All hypothesis testing was conducted at $\alpha = .05$.

H13. The variable hometown location affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 2, which was used to address RQ8, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and hometown location term provided evidence to support H13. All hypothesis testing was conducted at $\alpha = .05$.

H14. The variable academic readiness affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 2, which was used to address RQ8, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and academic readiness term provided evidence to support H14. All hypothesis testing was conducted at $\alpha = .05$.

RQ9. To what extent is the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students affected by gender, race, hometown location, and academic readiness?

H15. The variable gender affects the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of

the second year of college between first-year continuing-generation college students and first-year first-generation college students.

BLRM 3, which was used to address RQ9, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the three-variable interaction among generation status, first-year living learning community participation status, and gender term provided evidence to support H15. All hypothesis testing was conducted at $\alpha = .05$.

H16. The variable race affects the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

BLRM 3, which was used to address RQ9, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the three-variable interaction among generation status, first-year living learning community participation status, and race term provided evidence to support H16. All hypothesis testing was conducted at $\alpha = .05$.

H17. The variable hometown location affects the difference in the relationship between participation in a first-year living learning community and persistence to the

beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

BLRM 3, which was used to address RQ9, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the three-variable interaction among generation status, first-year living learning community participation status, and hometown location term provided evidence to support H17. All hypothesis testing was conducted at $\alpha = .05$.

H18. The variable academic readiness affects the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

BLRM 3, which was used to address RQ9, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the three-variable interaction among generation status, first-year living learning community participation status, and academic readiness term provided evidence to support H18. All hypothesis testing was conducted at $\alpha = .05$.

RQ10. To what extent is the relationship between first-year first-generation college students' participation in a first-year living learning community and academic

success, defined as grade point average at the completion of the first year, affected by the variables gender, race, hometown location, and academic readiness?

H19. The variable gender affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

The interaction effect (first-generation college students' first-year living learning community participation status x gender) from the first two-factor ANOVA was used to test H19. All hypothesis testing was conducted at $\alpha = .05$.

H20. The variable race affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

The fourth ANOVA, a two-factor ANOVA, was conducted to test H20. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were first-generation college students' first-year living learning community participation status (participated, did not participate) and race (white, other). The two-factor ANOVA can be used to test three hypotheses including a main effect for first-generation college students' first-year living learning community participation status, a main effect for race, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x race). The interaction effect for first-generation college students' first-year living learning community participation status by race used to test H20. All hypothesis testing was conducted at $\alpha = .05$.

H21. The variable hometown location affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

The fifth ANOVA, a two-factor ANOVA, was conducted to test H21. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were first-generation college students' first-year living learning community participation status (participated, did not participate) and hometown location (urban, rural). The two-factor ANOVA can be used to test three hypotheses including a main effect for first-generation college students' first-year living learning community participation status, a main effect for hometown location, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x hometown location). The interaction effect for first-generation college students' first-year living learning community participation status by hometown location was used to test H21. All hypothesis testing was conducted at $\alpha = .05$.

H22. The variable academic readiness affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

The sixth ANOVA, a two-factor ANOVA, was conducted to test H22. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were first-generation college students' first-year living learning community participation status (participated, did not participate) and academic readiness (ACT scores of 21 and above, ACT scores of 20 and

below). The two-factor ANOVA can be used to test three hypotheses including a main effect for first-generation college students' first-year living learning community participation status, a main effect for ACT score, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x ACT score). The interaction effect for first-generation college students' first-year living learning community participation status by academic readiness was used to test H22. All hypothesis testing was conducted at $\alpha = .05$.

RQ11. To what extent is the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, affected by the variables gender, race, hometown location, and academic readiness?

H23. The variable gender affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

The interaction effect (continuing-generation college students' first-year living learning community participation status x gender) from the second ANOVA was used to test H23. All hypothesis testing was conducted at $\alpha = .05$.

H24. The variable race affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

The seventh ANOVA, a two-factor ANOVA, was conducted to test H24. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were continuing-generation

college students' first-year living learning community participation status (participated, did not participate) and race (white, other). The two-factor ANOVA can be used to test three hypotheses including a main effect for continuing-generation college students' first-year living learning community participation status, a main effect for race, and a two-way interaction effect (continuing-generation college students' first-year living learning community participation status x race). The interaction effect for continuing-generation college students' first-year living learning community participation status by race was used to test H24. All hypothesis testing was conducted at $\alpha = .05$.

H25. The variable hometown location affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

The eighth ANOVA, a two-factor ANOVA, was conducted to test H25. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were continuing-generation college students' first-year living learning community participation status (participated, did not participate) and hometown location (urban, rural). The two-factor ANOVA can be used to test three hypotheses including a main effect for continuing-generation college students' first-year living learning community participation status, a main effect for hometown location, and a two-way interaction effect (continuing-generation college students' first-year living learning community participation status x hometown location). The interaction effect for continuing-generation college students' first-year living learning community participation status by hometown location was used to test H25. All hypothesis testing was conducted at $\alpha = .05$.

H26. The variable academic readiness affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

The ninth ANOVA, a two-factor ANOVA, was conducted to test H26. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were continuing-generation college students' first-year living learning community participation status (participated, did not participate) and academic readiness (ACT scores of 21 and above, ACT scores of 20 and below). The two-factor ANOVA can be used to test three hypotheses including a main effect for continuing-generation college students' first-year living learning community participation status, a main effect for ACT score, and a two-way interaction effect (continuing-generation college students' first-year living learning community participation status x ACT score). The interaction effect for continuing-generation college students' first-year living learning community participation status by academic readiness was used to test H26. All hypothesis testing was conducted at $\alpha = .05$.

RQ12. To what extent is the difference in the relationship between participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, between first-year continuing-generation college students and first-year first-generation college students affected by gender, race, hometown location, and academic readiness?

H27. The variable gender affects the difference in the relationship between participation in a first-year living learning community and academic success between

first-year continuing-generation college students and first-year first-generation college students.

The three-way interaction effect (college students' first-year living learning community participation status x generation status x gender) from the third ANOVA was used to test H27. All hypothesis testing was conducted at $\alpha = .05$.

H28. The variable race affects the difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students.

A tenth ANOVA, a three-factor ANOVA, was conducted to test H28. The three categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were college students' living learning community participation status (participated, did not participate), race (white, other), and generation status (first-generation, continuing-generation). The three-factor ANOVA can be used to test seven hypotheses including a main effect for college students' first-year living learning community participation status, a main effect for race, a main effect for generation status, a two-way interaction effect (college students' first-year living learning community participation status x race), a two-way interaction effect (college students' first-year living learning community participation status x generation status), a two-way interaction effect (generation status x race), and a three-way interaction effect (college students' first-year living learning community participation status x race x generation status). The three-way interaction effect for college students'

first-year living learning community participation status by generation status by race was used to test H28. All hypothesis testing was conducted at $\alpha = .05$.

H29. The variable hometown location affects the difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students.

An eleventh ANOVA, a three-factor ANOVA, was conducted to test H29. The three categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were college students' living learning community participation status (participated, did not participate), hometown location (urban, rural), and generation status (first-generation, continuing-generation). The three-factor ANOVA can be used to test seven hypotheses including a main effect for college students' first-year living learning community participation status, a main effect for hometown location, a main effect for generation status, a two-way interaction effect (college students' first-year living learning community participation status x hometown location), a two-way interaction effect (college students' first-year living learning community participation status x generation status), a two-way interaction effect (generation status x hometown location), and a three-way interaction effect (college students' first-year living learning community participation status x hometown location x generation status). The three-way interaction effect for college students' first-year living learning community participation status by generation status by hometown location was used to test H29. All hypothesis testing was conducted at $\alpha = .05$.

H30. The variable academic readiness affects the difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students.

A twelfth ANOVA, a three-factor ANOVA, was conducted to test H30. The three categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were college students' living learning community participation status (participated, did not participate), academic readiness (ACT scores of 21 and above, ACT scores of 20 and below), and generation status (first-generation, continuing-generation). The three-factor ANOVA can be used to test seven hypotheses including a main effect for college students' first-year living learning community participation status, a main effect for academic readiness, a main effect for generation status, a two-way interaction effect (college students' first-year living learning community participation status x academic readiness), a two-way interaction effect (college students' first-year living learning community participation status x generation status), a two-way interaction effect (generation status x academic readiness), and a three-way interaction effect (college students' first-year living learning community participation status x academic readiness x generation status). The three-way interaction effect for college students' first-year living learning community participation status by generation status by academic readiness was used to test H30. All hypothesis testing was conducted at $\alpha = .05$.

Limitations

Lunenburg and Irby (2008) defined limitations as “factors that may have an effect on the interpretation of the findings or on the generalizability of the results” (p. 133) and are generally “not under the control of the researcher” (p. 133). This study had the following limitations:

1. Some of the participants may not have been informed of the definition of a first-generation college student and did not appropriately identify themselves as such on the application for admission to the institution.
2. The fall 2014 semester at the institution coincided with the beginning of a new institutional president who proudly identified as a first-generation college student herself, thus potentially increasing the campus attitude toward and culture regarding first-generation college students on campus.
3. The institution has defined a learning community as a group of 30 full-time, first-time, degree-seeking students who live together on the same residence hall floor and take a minimum of two courses together during the fall semester and a minimum of one course together during the spring semester of the students' first year. The elements that defined the learning community at this Kansas institution may not be similar to the elements included in learning community experiences at other institutions.

Summary

This study's research design utilized statistical analysis techniques to determine the relationship between first-generation college students' participation in a first-year living learning community and academic success and persistence. The chapter described

the research design, population and sample, sampling procedures, instrumentation, data collection procedures, data analysis and hypothesis testing, and limitations. The results of the hypothesis testing are presented in chapter four.

Chapter Four

Results

The primary purpose of this study was to examine the influence of participating in a first-year living learning community on the academic success, defined as grade point average at the completion of the first year, and persistence to the second year of college for first-year, first-generation college students in comparison to their first-year, continuing-generation college student peers. In addition, the variables of students' race, gender, hometown location, and academic readiness were examined to determine their impact on the academic success and persistence to the second year of college for first-year, first-generation college students participating in a first-year living learning community.

Chapter four presents the results of hypothesis testing.

Descriptive Statistics

Descriptive statistics were used to summarize the demographics of the sample. Frequency tables were created to describe the generation status, gender, race, hometown location, and academic readiness for the 840 participants in the sample. Table 2 summarizes generation status. The sample included 434 first-generation college students and 406 continuing-generation college students.

Table 2

Generation Status Frequency Table

Generation Status	<i>N</i>	%
First-Generation	434	51.7
Continuing-Generation	406	48.3

Gender is presented in Table 3. A total of 469 females and 371 males were included in the sample.

Table 3

Gender Frequency Table

Gender	<i>N</i>	%
Female	469	55.8
Male	371	44.2

Race is summarized in Table 4. Options for participants included white and other. Six hundred seventy-eight students identified as white. One hundred sixty-two students identified as other.

Table 4

Race Frequency Table

Race	<i>N</i>	%
White	678	80.7
Other	162	19.3

A frequency table was created for the type of hometown location of the participants in the study (see Table 5). Options for participants included urban and rural. A total of 633 students identified their hometown location as rural, and 207 students identified their hometown location as urban.

Table 5

Hometown Location Frequency Table

Hometown Location	<i>N</i>	%
Rural	633	75.4
Urban	207	24.6

Table 6 summarizes the academic readiness of the participants in the study. ACT scores were utilized to determine academic readiness. Students with ACT scores of 21 and above were classified as academically ready. Students with ACT scores of 20 and below were classified as not academically ready. As a result, 488 students were classified as academically ready, and 352 students were classified as not academically ready.

Table 6

Academic Readiness Frequency Table

Academic readiness	<i>N</i>	%
Ready	488	58.1
Not ready	352	41.9

Note. Ready = ACT scores of 21 and above; Not ready = ACT scores of 20 and below.

Hypothesis Testing

Thirty hypotheses were tested based on 12 research questions. Archival data were utilized to examine the influence of participation in a first-year living learning community on the academic success and persistence to the second year of college for first-generation college students in comparison to their continuing-generation college student peers. Hypotheses were also tested to determine if the variables of students' gender, race, hometown location, and academic readiness had an influence on the

academic success and persistence to the second year of college for first-generation and continuing-generation college students participating in a first-year living learning community. Three binary logistic regressions and 12 analyses of variance (ANOVAs) were conducted to test the hypotheses.

RQ1. To what extent is there a relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college?

H1. There is a statistically significant relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

Three binary logistic regression models were analyzed to address the potential relationship between the best subsets combination of the independent variables with the binary dependent variable, persistence. Binary Logistic Regression Model 1 (BLRM 1), which was used to address RQ1, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the single variable first-year living learning community participation status term provided evidence to support H1. All hypothesis testing was conducted at $\alpha = .05$. The results of the goodness of fit analysis of the BLRM 1 model provided evidence that the model fits the data for the first-generation college students, Hosmer-Lemeshow $\chi^2 = 3.752$, $df = 8$, $p = .879$. Holding all else constant in the model, the single variable term, participation, is a marginally significant predictor of persistence, Wald's $\chi^2 = 2.641$, $df = 1$, $p = .104$. Although not statistically significant, the odds ratio

($e^{-.871} = 2.390$) can be interpreted to mean that first-generation college students who participated in a first-year living learning community are more than twice as likely as first-generation college students who did not participate in a first-year living learning community to persist to the beginning of the second year of college. This finding supports H1.

RQ2. To what extent is there a relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college?

H2. There is a statistically significant relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

Binary Logistic Regression Model 2 (BLRM 2), which was used to address RQ2, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the single variable first-year living learning community participation status term provided evidence to support H2. All hypothesis testing was conducted at $\alpha = .05$. The results of the goodness of fit analysis of the BLRM 2 model provided evidence that the model fits the data for the continuing-generation college students, Hosmer-Lemeshow $\chi^2 = 2.168$, $df = 6$, $p = .904$. Holding all else constant in the model, the single variable term, participation, is not a significant predictor of persistence, Wald's $\chi^2 = .789$, $df = 1$, $p = .375$. There is no evidence that a relationship exists between continuing-generation college students' participation in a first-year living learning

community and persistence to the beginning of the second year of college. This finding does not support H2.

RQ3. To what extent is there a difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students?

H3. There is a statistically significant difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

Binary Logistic Regression Model 3 (BLRM 3), which was used to address RQ3, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and generation status term provided evidence to support H3. All hypothesis testing was conducted at $\alpha = .05$. The results of the goodness of fit analysis of the BLRM 3 model provided evidence that the model fits the data for the first-generation and continuing-generation college students, Hosmer-Lemeshow $\chi^2 = 5.595$, $df = 8$, $p = .693$. Holding all else constant in the model, the single variable term, generation status, is not a significant predictor of persistence, Wald's $\chi^2 = .039$, $df = 1$, $p = .843$. There is no evidence that a statistically significant difference exists in the relationship between participation in a first-year living learning community

and persistence to the beginning of the second year of college between continuing-generation college students and first-generation college students. This finding does not support H3.

RQ4. To what extent is there a relationship between first-year first-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year?

H4. There is a relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

A two-factor analysis of variance (ANOVA) was conducted to test H4. The two categorical variables used to group the dependent variable, academic success, which was defined as first-year cumulative grade point average, were first-generation college students' first-year living learning community participation status (participated, did not participate) and gender (male, female). The two-factor ANOVA can be used to test three hypotheses including a main effect for first-generation college students' first-year living learning community participation status, a main effect for gender, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x gender). The main effect for first-generation college students' first-year living learning community participation status was used to test H4. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the relationship is not statistically significant, $F = 1.874$, $df = 1, 430$, $p = .172$. The mean first-year cumulative grade point average for first-generation college students participating in a first-year living learning community ($M = 2.307$, $SD = 1.026$) is not different from the mean first-year cumulative grade point average of first-generation

college students not participating in a first-year living learning community ($M = 2.415$, $SD = 1.049$). H4 was not supported.

RQ5. To what extent is there a relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year?

H5. There is a statistically significant relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

A second two-factor ANOVA was conducted to test H5. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were continuing-generation college students' first-year living learning community participation status (participated, did not participate) and gender (male, female). The two-factor ANOVA can be used to test three hypotheses including a main effect for continuing-generation college students' first-year living learning community participation status, a main effect for gender, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x gender). The main effect for continuing-generation college students' first-year living learning community participation status was used to test H5. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the relationship is not statistically significant, $F = .172$, $df = 1, 402$, $p = .679$. The mean first-year cumulative grade point average for continuing-generation college students participating in a first-year living learning community ($M = 2.841$, $SD = .883$) is not different from the mean first-year cumulative grade point average of

continuing-generation college students not participating in a first-year living learning community ($M = 2.675$, $SD = 1.028$). H5 was not supported.

RQ6. To what extent is there a difference in the relationship between participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, between first-year continuing-generation college students and first-year first-generation college students?

H6. There is a statistically significant difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students.

A third ANOVA, a three-factor ANOVA, was conducted to test H6. The three categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were college students' living learning community participation status (participated, did not participate), gender (male, female), and generation status (first-generation, continuing-generation). The three factor ANOVA can be used to test seven hypotheses including a main effect for college students' first-year living learning community participation status, a main effect for gender, a main effect for generation status, a two-way interaction effect (college students' first-year living learning community participation status x gender), a two-way interaction effect (college students' first-year living learning community participation status x generation status), a two-way interaction effect (generation status x gender), and a three-way interaction effect (college students' first-year living learning community participation status x gender x generation status). The two-way interaction effect for

college students' first-year living learning community participation status by generation status was used to test H6. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the difference in the relationship is not statistically significant, $F = 1.557$, $df = 1, 832$, $p = .212$. See Table 7 for the descriptive statistics for this analysis. There is no difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students. H6 was not supported.

Table 7

Descriptive Statistics for First-Year Academic Success Disaggregated by Generation Status and Participation in a First-Year Living Learning Community

Generation Status	FYLLC Participation	<i>M</i>	<i>SD</i>	<i>N</i>
Continuing-Generation	Did not participate	2.675	1.028	273
	Participated	2.841	0.883	133
First-Generation	Did not participate	2.415	1.049	279
	Participated	2.307	1.026	155

Note. FYLLC = first-year living learning community.

RQ7. To what extent is the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college affected by the variables gender, race, hometown location, and academic readiness?

H7. The variable gender affects the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 1, which was used to address RQ7, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the interaction between first-year living learning community participation status and gender term provided evidence to support H7. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 1 model provided evidence that the model fits the data for the first-generation college students, Hosmer-Lemeshow $\chi^2 = 3.752$, $df = 8$, $p = .879$. The interaction between first-year living learning community participation status and gender term is not a statistically significant predictor of persistence, Wald's $\chi^2 = 1.102$, $df = 1$, $p = .623$. This finding does not support H7.

H8. The variable race affects the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 1, which was used to address RQ7, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the interaction between first-year living learning community participation status and race term provided evidence to support H8. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 1 model provided evidence that the model fit the data for the first-generation college students, Hosmer-Lemeshow $\chi^2 = 3.752$, $df = 8$, $p = .879$. The interaction between first-year living learning community participation

status and race term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .287$, $df = 1$, $p = .592$. This finding does not support H8.

H9. The variable hometown location affects the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 1, which was used to address RQ7, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the interaction between first-year living learning community participation status and hometown location term provided evidence to support H9. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 1 model provided evidence that the model fit the data for the first-generation college students, Hosmer-Lemeshow $\chi^2 = 3.752$, $df = 8$, $p = .879$. The interaction between first-year living learning community participation status and hometown location term is not a statistically significant predictor of persistence, Wald's $\chi^2 = 1.629$, $df = 1$, $p = .202$. This finding does not support H9.

H10. The variable academic readiness affects the relationship between first-year first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 1, which was used to address RQ7, was analyzed using only data for the first-generation college students. The independent variables entered into BLRM 1 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the interaction between first-year living learning

community participation status and academic readiness term provided evidence to support H10. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 1 model provided evidence that the model fit the data for the first-generation college students, Hosmer-Lemeshow $\chi^2 = 3.752$, $df = 8$, $p = .879$. The interaction between first-year living learning community participation status and academic readiness term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .120$, $df = 1$, $p = .729$. This finding does not support H10.

RQ8. To what extent is the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college affected by the variables gender, race, hometown location, and academic readiness?

H11. The variable gender affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 2, which was used to address RQ8, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the interaction between first-year living learning community participation status and gender term provided evidence to support H11. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 2 model provided evidence that the model fits the data for the continuing-generation college students, Hosmer-Lemeshow $\chi^2 = 2.168$, $df = 6$, $p = .904$. The interaction between first-year living learning

community participation status and gender term is a statistically significant predictor of persistence, Wald's $\chi^2 = 4.563$, $df = 1$, $p = .033$. The odds ratio ($e^{-1.125} = .325$) can be interpreted to mean that female or male first-year continuing-generation college students who participated in a first-year living learning community are more than three times likely than male first-year continuing-generation college students who did not participate in a first-year living learning community to persist to the beginning of the second year of college. This finding supports H11.

H12. The variable race affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 2, which was used to address RQ8, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and race term provided evidence to support H12. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 2 model provided evidence that the model fits the data for the continuing-generation college students, Hosmer-Lemeshow $\chi^2 = 2.168$, $df = 6$, $p = .904$. The interaction between first-year living learning community participation status and race term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .015$, $df = 1$, $p = .902$. This finding does not support H12.

H13. The variable hometown location affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 2, which was used to address RQ8, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and hometown location term provided evidence to support H13. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 2 model provided evidence that the model fits the data for the continuing-generation college students, Hosmer-Lemeshow $\chi^2 = 2.168$, $df = 6$, $p = .904$. The interaction between first-year living learning community participation status and hometown location term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .000$, $df = 1$, $p = .988$. This finding does not support H13.

H14. The variable academic readiness affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college.

BLRM 2, which was used to address RQ8, was analyzed using only data for the continuing-generation college students. The independent variables entered into BLRM 2 were first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the two-variable interaction between first-year living learning community participation status and academic readiness

term provided evidence to support H14. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 2 model provided evidence that the model fits the data for the continuing-generation college students, Hosmer-Lemeshow $\chi^2 = 2.168$, $df = 6$, $p = .904$. The interaction between first-year living learning community participation status and hometown location term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .610$, $df = 1$, $p = .435$. This finding does not support H14.

RQ9. To what extent is the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students affected by gender, race, hometown location, and academic readiness?

H15. The variable gender affects the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

BLRM 3, which was used to address RQ9, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the three-variable interaction among generation status, first-year living learning community participation status, and gender term provided evidence to support H15. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the

results of the goodness of fit analysis of the BLRM 3 model provided evidence that the model fits all students in the sample, Hosmer-Lemeshow $\chi^2 = 5.595$, $df = 8$, $p = .693$.

The interaction between generation status, first-year living learning community participation status and gender term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .882$, $df = 1$, $p = .843$. This finding does not support H15.

H16. The variable race affects the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

BLRM 3, which was used to address RQ9, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the three-variable interaction among generation status, first-year living learning community participation status, and race term provided evidence to support H16. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 3 model provided evidence that the model fits the data for all students in the sample, Hosmer-Lemeshow $\chi^2 = 5.595$, $df = 8$, $p = .693$. The interaction between generation status, first-year living learning community participation status and race term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .173$, $df = 1$, $p = .677$. This finding does not support H16.

H17. The variable hometown location affects the difference in the relationship between participation in a first-year living learning community and persistence to the

beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

BLRM 3, which was used to address RQ9, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness. The significance of the three-variable interaction among generation status, first-year living learning community participation status, and hometown location term provided evidence to support H17. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 3 model provided evidence that the model fits the data for all students in the sample, Hosmer-Lemeshow $\chi^2 = 5.595$, $df = 8$, $p = .693$. The interaction between generation status, first-year living learning community participation status and hometown location term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .805$, $df = 1$, $p = .370$. This finding does not support H17.

H18. The variable academic readiness affects the difference in the relationship between participation in a first-year living learning community and persistence to the beginning of the second year of college between first-year continuing-generation college students and first-year first-generation college students.

BLRM 3, which was used to address RQ9, was analyzed using the combined data for the first-generation and continuing-generation college students. The independent variables entered into BLRM 3 were generation status, first-year living learning community participation status, gender, race, home location, and academic readiness.

The significance of the three-variable interaction among generation status, first-year living learning community participation status, and academic readiness term provided evidence to support H18. All hypothesis testing was conducted at $\alpha = .05$. As was noted above, the results of the goodness of fit analysis of the BLRM 3 model provided evidence that the model fits the data for all students in the sample, Hosmer-Lemeshow $\chi^2 = 5.595$, $df = 8$, $p = .693$. The interaction between generation status, first-year living learning community participation status and academic readiness term is not a statistically significant predictor of persistence, Wald's $\chi^2 = .670$, $df = 1$, $p = .413$. This finding does not support H18.

RQ10. To what extent is the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, affected by the variables gender, race, hometown location, and academic readiness?

H19. The variable gender affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

The interaction effect (first-generation college students' first-year living learning community participation status x gender) from the first two-factor ANOVA was used to test H19. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the relationship is not statistically significant, $F = .001$, $df = 1, 430$, $p = .979$. See Table 8 for the descriptive statistics for this analysis. There is no evidence the variable gender affects the relationship between first-generation college students'

participation in a first-year living learning community and academic success. H19 was not supported.

Table 8

Descriptive Statistics for Academic Success of First-Year, First-Generation College Students Disaggregated by Gender and Participation in First-Year Living Learning Community

FYLLC Participation	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Did not participate	Female	2.581	1.037	150
	Male	2.221	1.033	129
Participated	Female	2.439	1.034	99
	Male	2.073	0.980	56

Note. FYLLC = first-year living learning community.

H20. The variable race affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

The fourth ANOVA, a two-factor ANOVA, was conducted to test H20. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were first-generation college students' first-year living learning community participation status (participated, did not participate) and race (white, other). The two-factor ANOVA can be used to test three hypotheses including a main effect for first-generation college students' first-year living learning community participation status, a main effect for race, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x race). The interaction effect for first-generation college students' first-year living learning community participation status by race was used to test

H20. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the relationship is not statistically significant, $F = .431$, $df = 1, 430$, $p = .512$. See Table 9 for the descriptive statistics for this analysis. There is no evidence the variable race affects the relationship between first-generation college students' participation in a first-year living learning community and academic success. H20 was not supported.

Table 9

Descriptive Statistics for Academic Success of First-Year, First-Generation College Students Disaggregated by Race and Participation in First-Year Living Learning Community

FYLLC Participation	Race	<i>M</i>	<i>SD</i>	<i>N</i>
Did not participate	White	2.454	1.061	212
	Other	2.291	1.007	67
Participated	White	2.405	1.030	107
	Other	2.089	.995	48

Note: FYLLC = first-year living learning community.

H21. The variable hometown location affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

The fifth ANOVA, a two-factor ANOVA, was conducted to test H21. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were first-generation college students' first-year living learning community participation status (participated, did not participate) and hometown location (urban, rural). The two-factor ANOVA can be used to test three hypotheses including a main effect for first-generation college students' first-

year living learning community participation status, a main effect for hometown location, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x hometown location). The interaction effect for first-generation college students' first-year living learning community participation status by hometown location was used to test H21. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the relationship is not statistically significant, $F = .268$, $df = 1, 430$, $p = .605$. See Table 10 for the descriptive statistics for this analysis. There is no evidence the variable hometown location affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success. H21 was not supported.

Table 10

Descriptive Statistics for Academic Success of First-Year, First-Generation College Students Disaggregated by Hometown Location and Participation in First-Year Living Learning Community

FYLLC Participation	HL	<i>M</i>	<i>SD</i>	<i>N</i>
Did not participate	Rural	2.470	1.036	227
	Urban	2.174	1.082	52
Participated	Rural	2.355	1.011	111
	Urban	2.186	1.067	44

Note. FYLLC = first-year living learning community; HL = hometown location.

H22. The variable academic readiness affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success.

The sixth ANOVA, a two-factor ANOVA, was conducted to test H22. The two categorical variables used to group the dependent variable, academic success, which is

defined as first-year cumulative grade point average, were first-generation college students' first-year living learning community participation status (participated, did not participate) and academic readiness (ACT scores of 21 and above, ACT scores of 20 and below). The two-factor ANOVA can be used to test three hypotheses including a main effect for first-generation college students' first-year living learning community participation status, a main effect for ACT score, and a two-way interaction effect (first-generation college students' first-year living learning community participation status x ACT score). The interaction effect for first-generation college students' first-year living learning community participation status by academic readiness was used to test H22. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the relationship is statistically significant and at least two means are different, $F = 5.329$, $df = 1, 430$, $p = .021$. Academic readiness affects the relationship between first-year first-generation college students' participation in a first-year living learning community and academic success. See Table 11 for the descriptive statistics for this analysis. A post hoc, Tukey's Honestly Significant Difference, was conducted to detect the significant differences between the means.

The results of the post hoc analysis indicated that the average grade point average at the conclusion of the first year of academically ready students who did not participate in a first-year living learning community ($M = 2.865$, $SD = .911$) was significantly higher than the average grade point average at the conclusion of the first year of not academically ready students who did not participate in a first-year living learning community ($M = 1.9540$, $SD = .911$). The average grade point average at the conclusion of the first year of academically ready students who participated in a first-year living

learning community ($M = 2.534$, $SD = .464$) was significantly higher than the average grade point average at the conclusion of the first year of not academically ready students who participated in a first-year living learning community ($M = 2.070$, $SD = .464$). H22 was supported.

Table 11

Descriptive Statistics for Academic Success of First-Year, First-Generation College Students Disaggregated by Academic Readiness and Participation in First-Year Living Learning Community

FYLLC Participation	AR	<i>M</i>	<i>SD</i>	<i>N</i>
Did not participate	Not ready	1.954	.979	138
	Ready	2.865	.914	141
Participated	Not ready	2.070	.932	76
	Ready	2.534	1.067	79

Note. FYLLC = first-year living learning community; AR = academic readiness; Not ready = ACT scores of 20 and below; Ready = ACT scores of 21 and above.

RQ11. To what extent is the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, affected by the variables gender, race, hometown location, and academic readiness?

H23. The variable gender affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

The interaction effect (continuing-generation college students' first-year living learning community participation status x gender) from the second ANOVA was used to test H23. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis

indicated that the relationship is marginally significant, $F = 3.289$, $df = 1, 402$, $p = .071$. Although the finding is not statistically significant, gender appears to affect the relationship between continuing-generation college students' participation in a first-year living learning community and academic success. The mean cumulative grade point average at the end of the first year of female students who participated in a first-year living learning community ($M = 3.104$) was higher than the mean cumulative grade point average at the end of the first year of male students who participated in a first-year living learning community ($M = 2.342$) and male students who did not participate in a first-year living learning community ($M = 2.488$). See Table 12 for the descriptive statistics for this analysis. H23 was supported.

Table 12

Descriptive Statistics for Academic Success of First-Year, Continuing-Generation College Students Disaggregated by Gender and Participation in First-Year Living Learning Community

FYLLC Participation	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Did not participate	Female	2.872	0.979	133
	Male	2.488	1.043	140
Participated	Female	3.104	0.697	87
	Male	2.342	0.985	46

Note. FYLLC = first-year living learning community.

H24. The variable race affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

The seventh ANOVA, a two-factor ANOVA, was conducted to test H24. The two categorical variables used to group the dependent variable, academic success, which

is defined as first-year cumulative grade point average, were continuing-generation college students' first-year living learning community participation status (participated, did not participate) and race (white, other). The two-factor ANOVA can be used to test three hypotheses including a main effect for continuing-generation college students' first-year living learning community participation status, a main effect for race, and a two-way interaction effect (continuing-generation college students' first-year living learning community participation status x race). The interaction effect for continuing-generation college students' first-year living learning community participation status by race was used to test H24. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the relationship is not statistically significant, $F = 1.038$, $df = 1, 402$, $p = .309$. See Table 13 for the descriptive statistics for this analysis. There is no evidence the variable race affects the relationship between continuing-generation college students' participation in a first-year living learning community and academic success. H24 was not supported.

Table 13

Descriptive Statistics for Academic Success of First-Year, Continuing-Generation College Students Disaggregated by Race and Participation in First-Year Living Learning Community

FYLLC Participation	Race	<i>M</i>	<i>SD</i>	<i>N</i>
Did not participate	White	2.712	1.009	247
	Other	2.323	1.156	26
Participated	White	2.852	.878	112
	Other	2.778	.924	21

Note. FYLLC = first-year living learning community.

H25. The variable hometown location affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

The eighth ANOVA, a two-factor ANOVA, was conducted to test H25. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were continuing-generation college students' first-year living learning community participation status (participated, did not participate) and hometown location (urban, rural). The two-factor ANOVA can be used to test three hypotheses including a main effect for continuing-generation college students' first-year living learning community participation status, a main effect for hometown location, and a two-way interaction effect (continuing-generation college students' first-year living learning community participation status x hometown location). The interaction effect for continuing-generation college students' first-year living learning community participation status by hometown location was used to test H25. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the relationship is not statistically significant, $F = .471$, $df = 1, 402$, $p = .493$. See Table 14 for the descriptive statistics for this analysis. There is no evidence the variable hometown location affects the relationship between continuing-generation college students' participation in a first-year living learning community and academic success. H25 was not supported.

Table 14

Descriptive Statistics for Academic Success of First-Year, Continuing-Generation College Students Disaggregated by Hometown Location and Participation in First-Year Living Learning Community

FYLLC Participation	HL	<i>M</i>	<i>SD</i>	<i>N</i>
Did not participate	Rural	2.711	0.996	209
	Urban	2.558	1.128	64
Participated	Rural	2.840	0.887	86
	Urban	2.842	0.885	47

Note. FYLLC = first-year living learning community; HL = hometown location.

H26. The variable academic readiness affects the relationship between first-year continuing-generation college students' participation in a first-year living learning community and academic success.

The ninth ANOVA, a two-factor ANOVA, was conducted to test H26. The two categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were continuing-generation college students' first-year living learning community participation status (participated, did not participate) and academic readiness (ACT scores of 21 and above, ACT scores of 20 and below). The two-factor ANOVA can be used to test three hypotheses including a main effect for continuing-generation college students' first-year living learning community participation status, a main effect for ACT score, and a two-way interaction effect (continuing-generation college students' first-year living learning community participation status x ACT score). The interaction effect for continuing-generation college students' first-year living learning community participation status by academic readiness was used to test H26. All hypothesis testing was conducted at $\alpha = .05$. The

results of the analysis indicated that the relationship is not statistically significant, $F = 1.002$, $df = 1, 402$, $p = .317$. See Table 15 for the descriptive statistics for this analysis. There is no evidence the variable academic readiness affects the relationship between continuing-generation college students' participation in a first-year living learning community and academic success. H26 was not supported.

Table 15

Descriptive Statistics for Academic Success of First-Year, Continuing-Generation College Students Disaggregated by Academic Readiness and Participation in First-Year Living Learning Community

FYLLC Participation	AR	<i>M</i>	<i>SD</i>	<i>N</i>
Did not participate	Not ready	2.133	1.053	91
	Ready	2.946	0.903	182
Participated	Not ready	2.446	0.831	47
	Ready	3.056	0.838	86

Note. FYLLC = first-year living learning community; AR = academic readiness; Not ready = ACT scores of 20 and below; Ready = ACT scores of 21 and above.

RQ12. To what extent is the difference in the relationship between participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year, between first-year continuing-generation college students and first-year first-generation college students affected by gender, race, hometown location, and academic readiness?

H27. The variable gender affects the difference in the relationship between participation in a first-year living learning community and academic success between

first-year continuing-generation college students and first-year first-generation college students.

The three-way interaction effect (college students' first-year living learning community participation status x generation status x gender) from the third ANOVA was used to test H27. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the difference in the relationship is not statistically significant, $F = 1.557$, $df = 1, 832$, $p = .212$. See Table 16 for the descriptive statistics for this analysis. The variable gender does not affect the difference in the relationship of participation in a first-year living learning community and academic success between continuing-generation college students and first-generation college students. H27 was not supported.

Table 16

Descriptive Statistics for Academic Success of First-Year Students Disaggregated by Generation Status, Participation in a First-Year Living Learning Community, and Gender

Generation Status	FYLLC Participation	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Continuing-generation	Did not participate	Female	2.872	.979	133
		Male	2.488	1.043	140
	Participated	Female	3.104	.697	87
		Male	2.342	.985	46
First-generation	Did not participate	Female	2.581	1.037	150
		Male	2.221	1.033	129
	Participated	Female	2.439	1.034	99
		Male	2.073	.980	56

Note. FYLLC = first-year living learning community.

H28. The variable race affects the difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students.

A tenth ANOVA, a three-factor ANOVA, was conducted to test H28. The three categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were college students' living learning community participation status (participated, did not participate), race (white, other), and generation status (first-generation, continuing-generation). The three-factor ANOVA can be used to test seven hypotheses including a main effect for college students' first-year living learning community participation status, a main effect for race, a main effect for generation status, a two-way interaction effect (college students' first-year living learning community participation status x race), a two-way interaction effect (college students' first-year living learning community participation status x generation status), a two-way interaction effect (generation status x race), and a three-way interaction effect (college students' first-year living learning community participation status x race x generation status). The three-way interaction effect for college students' first-year living learning community participation status by generation status by race was used to test H28. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the difference in the relationship is not statistically significant, $F = 1.431$, $df = 1, 832$, $p = .232$. See Table 17 for the descriptive statistics for this analysis. The variable race does not affect the difference in the relationship of participation in a first-year living learning community and academic success between

continuing-generation college students and first-generation college students. H28 was not supported.

Table 17

Descriptive Statistics for Academic Success of First-Year Students Disaggregated by Generation Status, Participation in a First-Year Living Learning Community, and Race

Generation Status	FYLLC Participation	Race	<i>M</i>	<i>SD</i>	<i>N</i>
Continuing-generation	Did not participate	White	2.712	1.009	247
		Other	2.323	1.156	26
	Participated	White	2.852	.878	112
		Other	2.778	.924	21
First-generation	Did not participate	White	2.454	1.061	212
		Other	2.291	1.007	67
	Participated	White	2.405	1.030	107
		Other	2.089	.995	48

Note. FYLLC = first-year living learning community.

H29. The variable hometown location affects the difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students.

An eleventh ANOVA, a three-factor ANOVA, was conducted to test H29. The three categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were college students' living learning community participation status (participated, did not participate), hometown location (urban, rural), and generation status (first-generation, continuing-generation). The three-factor ANOVA can be used to test seven hypotheses including a main effect

for college students' first-year living learning community participation status, a main effect for hometown location, a main effect for generation status, a two-way interaction effect (college students' first-year living learning community participation status x hometown location), a two-way interaction effect (college students' first-year living learning community participation status x generation status), a two-way interaction effect (generation status x hometown location), and a three-way interaction effect (college students' first-year living learning community participation status x hometown location x generation status). The three-way interaction effect for college students' first-year living learning community participation status by generation status by hometown location was used to test H29. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the difference in the relationship is not statistically significant, $F = .008$, $df = 1, 832$, $p = .930$. See Table 18 for the descriptive statistics for this analysis. The variable hometown location does not affect the difference in the relationship of participation in a first-year living learning community and academic success between continuing-generation college students and first-generation college students. H29 was not supported.

Table 18

Descriptive Statistics for Academic Success of First-Year Students Disaggregated by Generation Status, Participation in a First-Year Living Learning Community, and Hometown Location

Generation Status	FYLLC Participation	HL	<i>M</i>	<i>SD</i>	<i>N</i>
Continuing-generation	Did not participate	Rural	2.711	0.996	209
		Urban	2.558	1.128	64
	Participated	Rural	2.840	0.887	86
		Urban	2.842	0.885	47
First-generation	Did not participate	Rural	2.470	1.036	227
		Urban	2.174	1.082	52
	Participated	Rural	2.355	1.011	111
		Urban	2.186	1.067	44

Note. FYLLC = first-year living learning community; HL = hometown location.

H30. The variable academic readiness affects the difference in the relationship between participation in a first-year living learning community and academic success between first-year continuing-generation college students and first-year first-generation college students.

A twelfth ANOVA, a three-factor ANOVA, was conducted to test H30. The three categorical variables used to group the dependent variable, academic success, which is defined as first-year cumulative grade point average, were college students' living learning community participation status (participated, did not participate), academic readiness (ACT scores of 21 and above, ACT scores of 20 and below), and generation status (first-generation, continuing-generation). The three-factor ANOVA can be used to test seven hypotheses including a main effect for college students' first-year living

learning community participation status, a main effect for academic readiness, a main effect for generation status, a two-way interaction effect (college students' first-year living learning community participation status x academic readiness), a two-way interaction effect (college students' first-year living learning community participation status x generation status), a two-way interaction effect (generation status x academic readiness), and a three-way interaction effect (college students' first-year living learning community participation status x academic readiness x generation status). The three-way interaction effect for college students' first-year living learning community participation status by generation status by academic readiness was used to test H30. All hypothesis testing was conducted at $\alpha = .05$. The results of the analysis indicated that the difference in the relationship is not statistically significant, $F = .740$, $df = 1, 832$, $p = .390$. See Table 19 for the descriptive statistics for this analysis. The variable academic readiness does not affect the difference in the relationship of participation in a first-year living learning community and academic success between continuing-generation college students and first-generation college students. H30 was not supported.

Table 19

Descriptive Statistics for Academic Success of First-Year Students Disaggregated by Generation Status, Participation in a First-Year Living Learning Community, and Academic Readiness

Generation Status	FYLLC Participation	AR	<i>M</i>	<i>SD</i>	<i>N</i>
Continuing-generation	Did not participate	Not ready	2.133	1.053	91
		Ready	2.946	0.903	182
	Participated	Not ready	2.446	0.831	47
		Ready	3.056	0.838	86
First-generation	Did not participate	Not ready	1.954	0.979	138
		Ready	2.865	.914	141
	Participated	Not ready	2.070	.932	76
		Ready	2.534	1.067	79

Note. FYLLC = first-year living learning community; AR = academic readiness; Not ready = ACT scores of 20 and below; Ready = ACT scores of 21 and above.

Results of the hypothesis testing provided understanding about how participation in a first-year living learning community influenced the academic success and persistence to the second year of college for first-generation and continuing-generation college students. In addition, the hypothesis testing identified how the variables gender, race, hometown location, and academic readiness influenced the academic success and persistence of first-generation and continuing-generation college students participating in a first-year living learning community.

Summary

Chapter four included the testing of the 30 hypotheses associated with the 12 research questions for the study. Participation in a first-year living learning community was found to be a marginally significant predictor of persistence to the second year of

college for first-generation college students. Students' academic readiness, defined as ACT scores in ranges of 21 and above and 20 and below, was identified as a statistically significant variable to affect the relationship between first-year, first-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the completion of the first year. Although the finding is not statistically significant, the variable gender appeared to affect the relationship between continuing-generation college students' participation in a first-year living learning community and academic success. There were no significant interactions between race and hometown locations with students' participation in a first-year living learning community and their subsequent academic success and persistence to the second year of college.

Chapter five presents the interpretations and recommendations of the hypothesis testing. The chapter includes a study summary, which includes an overview of the problem, a review of the purpose statement, research questions, and methodology, and the major findings, including their relationship to the literature. The chapter concludes with implications for action and recommendations for future research.

Chapter Five

Interpretation and Recommendations

Chapter five provides a summary of the study including an overview of the problem, purpose statement, research question, review of the methodology, and major findings from the hypothesis testing. The major findings are then related to the literature identified in chapter two. The chapter concludes with implications for action and recommendations for future research. Concluding remarks close the chapter.

Study Summary

This section provides a summary of the study including an overview of the problem. The purpose statement and research questions that guided the work of the study are identified. The methodology is reviewed, and major findings are presented from the hypothesis testing.

Overview of the problem. First-generation college students continue to arrive on college campuses, ready to enroll in academic coursework, succeed, and ultimately graduate. Attrition rates, though, indicate a concerning trend in the academic success and persistence to graduation for this student population as first-generation college students persist and graduate at lower rates than their continuing-generation college student peers (Pelco et al., 2014; Petty, 2014, Tate et al., 2015; Tibbetts et al., 2016; Wiggins, 2011). Institutions have been charged to implement programs, services, events, or interventions to better support the academic and social transition barriers impeding first-generation student persistence (Wiggins, 2011).

Kuh (2008) identified a series of high-impact practices that provided not only deeper learning experiences for students but also supported student persistence and

degree completion. One of these high-impact practices is a learning community. Learning communities have been further identified to support student persistence and degree completion (Ericksen & Walker, 2015; Murphy, 2010). First-year students who participated in learning communities in the first year of college identified stronger interpersonal peer relationships and faculty support networks to support their social transition into college (Arendsorf & Naylor-Tincknell, 2016).

The regional, comprehensive, public university located in Kansas that served as the site for this study admitted and enrolled a large population of first-year, first-generation college students for the 2014-2015 academic year. Over 58% of the first-year students matriculating for that academic year identified as first-generation (University A, 2015b). Recognizing the institutional trend of retaining first-generation college students at a rate approximately 20% below their continuing-generation college student peers (University A, 2015b), the institution had an opportunity to identify the influence of an already-established living learning community program on the academic success and persistence to the second year of college for first-generation college students.

Purpose statement and research questions. This study was a replication with modifications and extension of Kurotsuchi Inkelas et al.'s (2007) study. The study was designed to examine the effects of participating in a first-year living learning community on the academic success, defined as grade point average at the completion of the first year, and persistence to the second-year of college for first-generation college students compared to their continuing-generation college students at the regional, comprehensive, public university in Kansas. The variables gender, race, hometown location, and academic readiness, defined as academically ready with ACT scores in a range of 21 and

above and academically not ready with ACT scores in a range of 20 and below, were analyzed to determine their influence on the academic success and persistence for this student population. Twelve research questions were posed.

Review of the methodology. The population for this study included all first-year, first-generation and continuing-generation college students enrolled at the institution during the fall 2014 academic semester. Archival data from the institution's student information system were used for the study. Thirty hypotheses were tested utilizing binary logistic regression models, two-factor ANOVAs, and three-factor ANOVAs to address the 12 research questions.

Major findings. Results of the hypothesis testing indicated that there is a relationship between first-year, first-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college. First-year, first-generation college students who participated in a first-year living learning community were more than twice as likely as first-year, first-generation college students who did not participate in a first-year living learning community to persist to the beginning of the second year of college. There was no evidence identified through data analysis that the variables gender, race, hometown location, or academic readiness affected the relationship between first-year, first-generation college students participating in a first-year living learning community and persistence to the beginning of the second year of college.

The variable gender was identified to affect the relationship between first-year, continuing-generation college students' participation in a first-year living learning community and persistence to the beginning of the second year of college. Female or

male first-year, continuing-generation college students who participated in a first-year living learning community were more than three times likely than male first-year, continuing-generation college students who did not participate in a first-year living learning community to persist to the beginning of the second year of college. The variable gender was also identified to affect the relationship between first-year, continuing-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the conclusion of the first year of college. Female first-year, continuing-generation college students who participated in a living learning community averaged a higher grade point average at the conclusion of the first year of college than both male first-year, first-generation college students who participated in a first-year living learning community and students who did not participate in a first-year living learning community.

The variable academic readiness, defined as academically ready with ACT scores in a range of 21 and above and academically not ready with ACT scores in a range of 20 and below, affected the relationship between first-year, first-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the conclusion of the first year of college. The grade point average at the conclusion of the first year of academically ready students who participated in a first-year living learning community was significantly higher than the grade point average at the conclusion of the first year of academically not ready students who participated in a first-year living learning community.

Findings Related to the Literature

This study expanded the body of knowledge related to first-generation college students and living learning communities. Kurotsuchi Inkelas et al.'s (2007) study examined first-generation college students' success and retention through an analysis of multiple institutions participating in the National Study of Living Learning Programs. This study examined the influence of participating in a first-year living learning community on the first-year, first-generation college student cohort in comparison to continuing-generation peers at a single institution. The study's finding that first-generation college students who participated in a first-year living learning community were more than twice as likely to persist to the beginning of the second year of college aligns with Kurotsuchi Inkelas et al.'s (2007) evidence that first-generation college students who participated in a living learning community identified ease of academic and social transition as a result of the living learning community.

This study aligned with Sperry's (2015) identification that future research was needed to examine the influence of first-year, first-generation college students participating in learning communities as a high-impact practice. The findings from this study are consistent with Somers et al.'s (2004) research that identified that first-generation college students are more likely to persist and succeed academically if they participated in a living learning community during their first year of college. First-generation college students who participated in a first-year living learning community in this study were more than twice as likely as first-year, first-generation college students who did not participate in a first-year living learning community to persist to the beginning of the second year of college.

The variable academic readiness was identified in this study to affect the relationship between first-year, first-generation college students' participation in a first-year living learning community and academic success, defined as grade point average at the conclusion of the first year of college. This finding is consistent with the common pre-college characteristics of inadequate math, writing, studying, and critical thinking skills serving as a barrier to the academic success for first-generation college students (Soria, 2015; Stebleton & Soria, 2012). Even as institutions follow Stebleton et al.'s (2014) advice to recommend living learning community participation for first-year, first-generation college students to improve persistence and academic success, these students' pre-college characteristics will likely affect their persistence and academic success as well.

Conclusions

This section concludes the study of how participating in a first-year living learning community affects the academic success, defined as grade point average at the conclusion of the first year of college, and persistence to the second year of college for first-year, first-generation college students in comparison to their continuing-generation college student peers. Implications for action for the university are identified as well as recommendations for future research on the topic are summarized next. Concluding remarks are included to complete the section.

Implications for action. The results of this study have implications for continued improvements to support first-generation college student persistence and academic success. Participation in the living learning community program at the university was found to positively influence first-year, first-generation college students' persistence to

the beginning of the second year of college. As the institution continues to recruit and enroll incoming first-generation college students, administrators in academic affairs, student affairs, and enrollment management should develop intentional marketing strategies to encourage first-generation college students to consider joining a first-year living learning community. These marketing and recruitment materials should be targeted to first-generation college students and their family members. Messages should be distributed for consideration in students' pre-college stages as an inquiry, prospect, applicant, and admit.

The study examined the influence of the variable academic readiness on the participation of first-year, first-generation college students in a first-year living learning community and academic success. Academic readiness does have an effect on the academic success of first-year, first-generation college students participating in a first-year living learning community. Student affairs administrators and academic affairs administrators should examine the academic coursework that constitutes the living learning communities. Consideration should be made to examine courses which would be most beneficial for inclusion in living learning communities with high numbers of first-generation college students enrolled. More appropriate courses for inclusion might include those that provide academically unprepared students with additional remediation in math, writing, study skills, and critical thinking skills.

Recommendations for future research. This study contributed to an existing gap within the body of knowledge related to first-year, first-generation college students and living learning communities. The study utilized a quantitative research design to identify the influence of participating in a first-year living learning community on the

academic success and persistence to the second year of college for first-generation college students. Statistical significance was identified in the relationship between first-year, first-generation college students participating in a first-year living learning community and persistence to the second year of college. Qualitative research is recommended to ascertain from first-year, first-generation college students how participating in the first-year living learning community contributed to their persistence to the second year of college.

The state higher education system's goal is to increase the number of adults with a baccalaureate degree. Additional research is recommended that examines the influence of participating in a first-year living learning community on degree completion for first-generation college students. Students who participate in a first-year living learning community develop a peer support network, engage in deeper learning experiences with faculty members, and successfully navigate their first-year transition into the institution. The skills gained from participating in a first-year living learning community may serve as a foundation for academic behaviors that could support degree completion. A longitudinal study could examine a cohort of first-generation college students participating in a first-year living learning community through degree completion in four, five, and six years.

Living learning communities and first-generation college student transition programming initiatives were established at the institution in response to the state higher education system's goal of increasing institutional first-to-second year retention rates by 10%. Further research is recommended to compare the findings of the one institution in this study to how participation in a first-year living learning community is affecting the

academic success and persistence of first-year, first-generation college students at other institutions within the state higher education system. This type of study could provide benchmarking for the institution and the system.

Concluding remarks. The purpose of this study was to examine the influence of participating in a first-year living learning community on the academic success and persistence to the second year of college for first-year, first-generation college students compared to their continuing-generation college student peers. Learning community programs had been previously identified as a high-impact practice contributing to student engagement, success, and retention (Kuh, 2008). This study confirmed that first-year, first-generation college students who participated in a first-year living learning community were more than twice as likely as those first-year, first-generation college students who did not participate in a first-year living learning community to persist to the beginning of the second year of college. Institutions can and should continue to encourage first-year, first-generation college students to be included in this high-impact experience.

This study contributed to an existing gap in the literature on first-generation college students and living learning communities. The findings of the study may be used by student affairs administrators and academic affairs administrators to better collaborate and provide the programs, events, services, and interventions to best support incoming first-generation college students as they navigate the transition into higher education. Entering college and navigating the first year may be a daunting challenge for students who are first in their families to go college. Living learning communities may provide

the framework to overcome these barriers and allow students to succeed and ultimately graduate, becoming the first in their families to earn a college degree.

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Appendices

Appendix A: IRB Form for Baker University



SCHOOL OF EDUCATION
GRADUATE DEPARTMENT

Date: 12/10/16
IRB PROTOCOL NUMBER _____
(IRB USE ONLY)

IRB REQUEST
Proposal for Research
Submitted to the Baker University Institutional Review Board

I. Research Investigator(s) (Students must list faculty sponsor first)

Department(s) **School of Education Graduate Department**

Name	Signature	
1. Dr. Tes Mehring	<u>Tes Mehring</u>	Major Advisor
2. Margaret Waterman	<u>Margaret Waterman</u>	Research Analyst
3.		University Committee Member
4. Dr. Keegan Nichols		External Committee Member

Principal Investigator: Brett Bruner

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Mailing address: 3704 Canal Blvd. #D
Hays, KS 67601

Faculty sponsor: Dr. Tes Mehring

Phone: (913) 344-1236

Email: tes.mehring@bakeru.edu

Expected Category of Review: ___Exempt ___ Expedited ___Full

II: Protocol: (Type the title of your study)

The Impact of a First Year Living-Learning Community on First-Generation College Student Academic Success and Persistence

Summary

In a sentence or two, please describe the background and purpose of the research.

While the number of first-generation college students attending college continues to increase (Coffman, 2011; Engle & Tinto, 2008), retention rates for this student population continue to increase (Ishitani, 2006; Lowery-Hart & Pacheco, 2011; Petty, 2014). The purposes of this study are to examine the effects of participation in first-year living learning communities on the academic success and persistence of first-year first-generation college students in comparison to their first-year continuing-generation college student peers and analyze the influence of pre-college variables of race, gender, hometown location, and academic preparedness on this persistence and academic success.

Briefly describe each condition or manipulation to be included within the study.

Since archival data will be the focus of data analysis, there are no conditions or manipulations included in the study.

What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.

Archival data from [REDACTED], a Midwest regional public institution's, student information system were used for this study. The dependent variable was academic success was measured by a student's grade point average at the completion of the first year of study at the institution. The categorical variable of generation status included the options of first-generation college student or continuing-generation college student. The categorical variable of participation in a first-year living learning community included the options of participated or not participated. The categorical variable of gender included the options of male or female. The categorical variable of race included the options of white, Hispanic, or other. The categorical variable of hometown location included the options of urban and rural as defined by the U.S. Census Bureau (2015). An urban area was defined as population of at least 50,000 people whereas a rural area was defined any anything not urban (U.S. Census Bureau, 2015). The categorical variable of academic readiness included the options of ACT scores in a range of 21 and above and ACT scores in a range of 20 and below. These categories were determined using the state system's qualified admissions standards (Kansas Board of Regents, 2014).

Will the subjects encounter the risk of psychological, social, physical, or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.

The use of archival data will present minimal risk to participants since no surveys will be utilized. Statistical analysis techniques will be used to analyze the archival data.

Will any stress to subjects be involved? If so, please describe.

No stress to subjects will be involved since the research design uses archival data and statistical analysis techniques of the data from the institution's student information system.

Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.

Deception will not be used in this study.

Will there be a request for information which subjects might consider to be personal or sensitive? If so, please include a description.

Archival data will be collected from the student information system at [REDACTED], the selected institution site. The data will include the student's name, generation status, participation in a first-year living learning community status, gender, race, ACT score, first-year cumulative grade point average, enrollment in the consecutive fall semester status, and hometown city and state. Hometown cities will be manually coded as urban or rural using the United States Census Bureau's (2015) urban and rural classification system. Once all data are received student names will be deleted and assigned an identification number for confidentiality purposes.

Will the subjects be presented with materials which might be considered to be offensive, threatening, or degrading? If so, please describe.

No, subjects will be not be presented with materials which might be considered to be offensive, threatening, or degrading.

Approximately how much time will be demanded of each subject?

No time will be demanded for each subject as the archival data will be provided from the institution's student information system and analyzed using statistical analysis techniques.

Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.

The population for this study will include all first-year first-generation and continuing-generation college students enrolled at [REDACTED] University during the fall 2014 academic semester. The sample for this study will include first-time, full-time, on-campus, degree-seeking students who had graduated high school in 2014, began their first semester at the institution during the fall 2014 semester, and resided in an on-campus residence hall. Only first-time, full-time, on-campus, degree-seeking students who

graduated high school within the past 12 months of their first enrollment semester who resided in an on-campus residential facility were eligible to participate in a first-year living learning community.

What steps will be taken to insure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?

Archival data of the student's name, generation status, participation in a first-year living learning community status, gender, race, ACT score, first-year cumulative grade point average, enrollment in the consecutive fall semester status, and hometown city and state will be requested from the institution's student information system. Once all data are received student names will be deleted and assigned an identification number for confidentiality purposes.

How will you insure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.

Archival data will be requested from the institution's student information system. Once all data received, student names will be deleted and assigned an identification number for confidentiality purposes.

Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.

The archival data will be collected from the institution's student information system. However, the researcher will delete student names and assign an identification number for confidentiality purposes.

Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.

No, the fact that a subject did or did not participate in the study will not be made part of any permanent record available to a supervisor, teacher or employer.

What steps will be taken to insure the confidentiality of the data? Where will it be stored? How long will it be stored? What will be done with it after the study is completed?

After the request for archival data from the institution's student information system has been received, all identifying student names will be deleted and assigned identification numbers to protect student confidentiality. All data will be stored on secure storage device and locked in the office of principal investigator until after the study is completed. The data will then be destroyed.

If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?

There is minimal risk to participants in the study since archival data from the institution's student information system will be utilized.

Will any data from files or archival data be used? If so, please describe.

Yes, archival data will be requested from the student information system at [REDACTED] University. The data will include the student's name, generation status, participation in a first-year living learning community status, gender, race, ACT score, first-year cumulative grade point average, enrollment in the consecutive fall semester status, and hometown city and state. Hometown cities will be manually coded as urban or rural using the United States Census Bureau's (2015) urban and rural classification system. Once all data are received student names will be deleted and assigned an identification number for confidentiality purposes. Statistical analysis techniques will be utilized to analyze the archival data.

Appendix B: IRB Approval from Baker University



Baker University Institutional Review Board

December 15, 2016

Dear Brett Bruner and Dr. Mehring,

The Baker University IRB has reviewed your research project application and approved this project under Exempt Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at EMorris@BakerU.edu or 785.594.7881.

Sincerely,

Erin Morris PhD
Chair, Baker University IRB

Baker University IRB Committee
Joe Watson PhD
Nate Poell MA
Susan Rogers PhD
Scott Crenshaw

Appendix C: IRB Form for Site of Study

**INSTITUTIONAL REVIEW BOARD
FOR HUMAN SUBJECTS RESEARCH****APPLICATION**

Proposals for review by the IRB may be submitted at any time. With the exception of expedited reviews, complete proposals submitted no later than ten (10) business days prior to a scheduled meeting will be reviewed at that meeting. Late proposals will be reviewed at the next scheduled meeting. The IRB meeting schedule is posted on the website. Incomplete proposals will not be reviewed until the researcher supplies the missing information. Be sure to respond to all sections.

Type of Request:

- Full Review**
Complete Application and Relevant Forms
- Expedited Review**
Complete Application and Expedited Review Attachment
- Exempt from Review**
Complete Application and Exempt Review Attachment

All materials related to this study must be uploaded into your IRBNet study workspace. Instructions for using IRBNet are located at the [REDACTED] IRB website.

Required materials include:

- Completed application (including relevant parts of section IX if a vulnerable population is involved)
- A completed form requesting Exemption, Expedited or Full Review.
- Copies of all recruiting materials, including scripts, emails, letters, posters, advertising, etc.
- Copies of all measurements, instruments, surveys, interview questions being used, etc.
- All consent forms and assent forms or scripts (for children).
- Debriefing materials.

I. Certifications:

I am familiar with the policies and procedures of [REDACTED] University regarding human subjects in research. I subscribe to the university standards and applicable state and federal standards and will adhere to the policies and procedures of the Institutional Review Board for the Protection of Human Subjects. I will comply with all instructions from the IRB at the beginning and during the project or will stop the project.

AND

I am familiar with the published guidelines for the ethical treatment of human subjects associated with my particular field of study.

Statement of Agreement:

By electronically signing and submitting this application package, I certify that I am willing to conduct and /or supervise these activities in accordance with the guidelines for human subjects in research. Further, I certify that any changes in procedures from those outlined above or in the attached proposal will be cleared through the IRB.

If the Principal Investigator is a student, the electronic signature of the Faculty Advisor certifies: 1) Agreement to supervise the student research; and, 2) This application is ready for IRB review. The Student is the "Principal Investigator". The Faculty Research Advisor is the "Advisor". Designees may not sign the package. It is the student's responsibility to contact their Faculty Research Advisor when the study is ready for his/her signature.

I certify the information provided in this application is complete and correct
I understand that I have ultimate responsibility for the conduct of the study, the ethical performance of the project, the protection of the rights and welfare of human subjects and strict adherence to any stipulations imposed by the IRB.

I agree to comply with all [REDACTED] policies, as well as all federal, state and local laws on the protection of human subjects in research, including:

- Ensuring all study personnel satisfactorily complete human subjects in research training
- Performing the study according to the approved protocol
- Implementing no changes in the approved study without IRB approval
- Obtaining informed consent from subjects using only the currently approved consent form
- Protecting identifiable health information in accordance with HIPAA Privacy rule

Promptly reporting significant or untoward adverse effects to the IRB

Application Information:

II. Activity or Project Title: The Impact of a First Year Living-Learning Community on First-Generation College Student Academic Success and Persistence

Time period for activity: From 01/2017 to 08/2017
annual review will be needed

**If longer than 1 year,*

III. List all people involved in research project:

Name & Title	Institution & Department	Phone	Email
* Brett Bruner, Director of Transition & Student Conduct	██████████ – Office of Student Affairs	(785) 628- 5824	blbruner@██████████.edu

*Principal Investigator

If there are additional investigators, please attach their information to the application.

IV. Type of investigator and nature of the activity: (Check all the appropriate categories)

A. Faculty/Staff at ██████████:

- Submitted for extramural funding to:
- Submitted for intramural funding to:

Project unfunded

- Quality improvement/program evaluation
- Quality assurance

Other (Please explain): Dissertation for Ed.D. in Higher Education Leadership through Baker University – IRB application submitted through Baker University IRB as well

B. Student at ██████████: Graduate Undergraduate Special
Thesis Specialist Field of Study
Graduate Research Paper Independent Study
Class Project (Course Number and Course Title):
Other (Please Explain):

C. Other than faculty, staff, or student at FHSU (Unaffiliated with FHSU).

V. Human Subjects Research Ethics Training: The IRB will not review submissions without verification of appropriate CITI training. The Principal Investigator and all members of the research team must complete the appropriate CITI training modules. Faculty Research Advisors, when listed above, must also complete CITI training. If the PI is not affiliated with ██████████, documentation of CITI or other comparable training must be provided.

Date completed ██████████ CITI training: July 2014

VI. Description of Project

Completely describe the research project below. Provide sufficient information for effective review, and define abbreviations and technical terms. Do NOT attach a thesis, prospectus, grant proposal, etc. If an item is not applicable, please provide justification.

A. Project purpose(s):

While the number of first-generation college students attending college continues to increase (Coffman, 2011; Engle & Tinto, 2008), retention rates for this student population continue to increase (Ishitani, 2006; Lowery-Hart & Pacheco, 2011; Petty, 2014). The purposes of this study are to examine the effects of participation in first-year living learning communities on the academic success and persistence of first-year first-generation college students in comparison to their first-year continuing-generation college student peers and analyze the influence of pre-college variables of race, gender, hometown location, and academic preparedness on this persistence and academic success.

B. Describe the proposed participants (number, age, gender, ethnicity, etc)

The population for this study will include all first-year first-generation and continuing-generation college students enrolled at ██████████ University during the fall 2014 academic semester. The sample for this study will include first-time, full-time, on-campus, degree-seeking students who had graduated high school in 2014, began their first semester at the institution during the fall 2014 semester, and resided in an on-campus residence hall. Only first-time, full-time, on-campus, degree-seeking students who graduated high school within the past 12 months of their first enrollment semester who resided in an on-campus residential facility were eligible to participate in a first-year living learning community.

C. What are the criteria for including or excluding subjects? Are any criteria based on age, gender, race, ethnicity, sexual orientation, or origin? If so, justify.

The sample for this study will include first-time, full-time, on-campus, degree-seeking students who had graduated high school in 2014, began their first semester at the institution during the fall 2014 semester, and resided in an on-campus residence hall. Only first-time, full-time, on-campus, degree-seeking students who graduated high school within the past 12 months of their first enrollment semester who resided in an on-campus residential facility were eligible to participate in a first-year living learning community.

D. Population from which the participants will be obtained:

General Populations:

- Adult students (18-65 years) on-campus
 Adults (18-65 years) off-campus

*See Section IX for additional information
--

Protected or Vulnerable Populations*:

- Elderly (65+ Years)
 Prisoners

- Wards of the State
- Pregnant Women
- Fetuses
- Mentally disabled
- Children (under the age of 18)

Other vulnerable groups:

- Vulnerable to influence or coercion (may include [REDACTED] students or employees)
- Economically disadvantaged
- Educationally disadvantaged
- Decisionally impaired
- Non English speakers
- International research

E. Recruitment Procedures: Describe in detail the process to be used to recruit participants. Upload scripts, emails, letters, advertising and all marketing materials with your application. Provide a step-by-step description of how potential participants will be recruited for the study.

Archival data will be collected from the student information system at [REDACTED] University, the selected institution site. The data will include the student's name, generation status, participation in a first-year living learning community status, gender, race, ACT score, first-year cumulative grade point average, enrollment in the consecutive fall semester status, and hometown city and state. Hometown cities will be manually coded as urban or rural using the United States Census Bureau's (2015) urban and rural classification system. Once all data are received student names will be deleted and assigned an identification number for confidentiality purposes.

F. Describe the benefits to the participants, discipline/field, and/or society for completing the research project. This description is necessary for determining if the risks are reasonable in relationship to anticipated benefits. Research that provides no benefit or potential for benefit will not be approved.

This study will benefit the discipline/field in replicating a similar study to determine if learning communities, a high-impact practice identified by Kuh (2008), influence the student academic success and/or persistence of first-year, first-generation college students in comparison to their first-year, continuing-generation college student peers.

G. Describe the potential risks to participants for completing the research project. A risk is a potential harm that a reasonable person would consider important in deciding whether to participate in research. Risk categories include physical, psychological, social, economic and legal, and include pain, stress, and invasion of privacy, embarrassment, or exposure of sensitive or confidential information. All potential risks and discomforts must be minimized to the greatest extent possible by using appropriate monitoring, safety devices and withdrawal of a subject if there is evidence of a specific adverse event.

The use of archival data will present minimal risk to participants since no surveys will be utilized. Statistical analysis techniques will be used to analyze the archival data.

X Minimal Risk: the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

___ More than minimal risk

H. Describe the follow up efforts that will be made to detect any harm to subjects, and how the IRB will be kept informed. Serious adverse or unexpected reactions or injuries must be reported to the IRB within 48 hours. Other adverse events should be reported within 10 days.

Since archival data will be utilized, no harm is expected to subjects since no survey data or other interaction will occur between the researcher and the subjects.

I. Describe in detail the procedures to be used in the research project. What will all participants experience during the research project?

Archival data will be collected from the student information system at [REDACTED] University, the selected institution site. The data will include the student's name, generation status, participation in a first-year living learning community status, gender, race, ACT score, first-year cumulative grade point average, enrollment in the consecutive fall semester status, and hometown city and state. Hometown cities will be manually coded as urban or rural using the United States Census Bureau's (2015) urban and rural classification system. Once all data are received student names will be deleted and assigned an identification number for confidentiality purposes.

J. List all measures/instruments to be used in the project, include citations and permission to use (if measure/instrument is copyrighted) if needed or if it will be changed for this study. Attach copies of all measures, such as surveys, interview questions, instruments, etc. to the package.

Archival data from [REDACTED] University's student information system will be used for this study. The dependent variable academic success was measured by a student's grade point average at the completion of the first year of study at the institution. The categorical variable of generation status included the options of first-generation college student or continuing-generation college student. The categorical variable of participation in a first-year living learning community included the options of participated or not participated. The categorical variable of gender included the options of male or female. The categorical variable of race included the options of white, Hispanic, or other. The categorical variable of hometown location included the options of urban and rural as defined by the U.S. Census Bureau (2015). An urban area was defined as population of at least 50,000 people whereas a rural area was defined anything not urban (U.S. Census Bureau, 2015). The categorical variable of academic readiness included the options of ACT scores in a range of 21 and above and ACT scores in a range of 20 and below. These categories were determined using the state system's qualified admissions standards (Kansas Board of Regents, 2014).

K. Describe in detail how confidentiality will be protected or how anonymity will be ensured before, during, and after information has been collected? Please note the difference between confidentiality (researcher knows identity of subjects and keeps information secret) and anonymity (researcher does not know identity of participants).

After the request for archival data from the institution's student information system has been received, all identifying student names will be deleted and assigned identification numbers to protect student confidentiality.

L. Data Management: How will the data be stored? When will the data be destroyed? Who will have access to the data? If audio or video recordings are used, how will they be kept confidential?

All data will be stored on secure storage device and locked in the office of principal investigator until after the study is completed. The data will then be destroyed by August 2017.

M. Informed Consent: Describe in detail the **process** for obtaining consent. *If non-English speaking subjects are involved, describe how consent will be obtained.*

Archival data will be requested from the institution's student information system. Once all data received, student names will be deleted and assigned an identification number for confidentiality purposes.

N. If informed consent is to be waived or altered, complete Supplemental: Consent Waiver Form

O. If written documentation of consent is to be waived, complete Supplemental: Documentation Waiver Form

P. Explain Debriefing procedures/end of study information that will be given to all participants.

Archival data will be utilized from the student information system. After data has been received, student names will be deleted and assigned an identification number for confidentiality purposes.

Q. Emergencies. How will emergencies or unanticipated adverse events related to the research be handled if they arise? Please note that this refers to an emergency situation associated with the research activity, not an emergency such as a fire alarm.

Emergencies or unanticipated adverse events will be managed by the principal investigator.

R. Will information about the research purpose and design be held from subjects? If yes, justify the deception.

Deception will not be used in this study.

VII. If the research involves protected health information, it must comply with the HIPAA Privacy Rule.

Select one:

The research does not involve protected health information

Do you plan to use or disclose identifiable health information outside [REDACTED]?
If yes, the consent form must include a release of protected health information.

The IRB may make a waiver of authorization for disclosure if criteria are met under the HIPAA Privacy Rule. *If a waiver of authorization is being requested, the researcher must contact the IRB chair prior to submitting this application.*

Will the protected health information to be used or disclosed be de identified or will a limited data set be used or disclosed? *Please describe:*

VIII. Conflict of Interest: Each individual with a personal financial interest or relationship that in the individual's judgment **could reasonably appear to affect or be affected by the proposed study** involving human subjects is required to disclose the existence of financial interests. It is unnecessary to report any financial interests or relationships that do **not** reasonably appear to affect or be affected by the proposed study.

Definitions:

"Conflict of interest" occurs when an independent observer may reasonably question whether an individual's professional actions or decisions are influenced by considerations of the individual's private interests, financial or otherwise.

Conflicting financial interests do not include:

- Salary and benefits from [REDACTED] University;
- Income from seminars, lectures, teaching engagements, or publishing sponsored by federal, state, or local entities, or from non-profit academic institutions, when the funds do not originate from corporate sources;
- Income from service on advisory committees or review panels for governmental or non-profit entities;
- Investments in publicly-traded mutual funds;
- Gifts and promotional items of nominal value; and
- Meals and lodging for participation in professional meetings.

"Principal investigator or other key personnel" means the principal investigator and any other person, including students, who are responsible for the design, conduct, analysis, or reporting of research involving human subjects.

Select one:

X There is no conflict of interest

 I need to disclose financial interests in any external entity that is related to the work to be conducted under the proposed project or is interested in the results of the project. *(If this is checked, you will be contacted by the Office of Scholarship and Sponsored Projects and asked to complete a disclosure form).*

IX. Special Considerations for Vulnerable Participants

Vulnerable participants are generally regarded as those who are relatively or absolutely unable to protect their own interests. The National Bioethics Advisory Committee describes the following factors to consider that would impair prospective subjects' ability to protect themselves:

- Cognitive or communicative (unable to comprehend, think, or make decisions)
- Institutional (students, prisoners)
- Deferential (patient/doctor, student/teacher)
- Medical (desire for a cure)
- Economic
- Social

Studies that involve protected or vulnerable populations will need to explicitly address the strategies that will be used to provide protection for these groups. Studies involving vulnerable populations will receive a Full Review, and there must be considerable justification provided if there is more than minimal risk involved.

When using a vulnerable population, additional consents and debriefings need to be conducted. The researcher must recruit a site or location; consent from the head of these locations must give permission to use the facilities. In addition, the guardians, parents, etc. of young, elderly, or cognitively impaired participants must also give permission. Finally, the actual participant must give assent to participate.

Additional considerations include:

How will the research location/site, parent/guardian/etc., participant be contacted? Attach copies of the 1) recruitment letter and consent for each location/site that will be used during this research project; 2) recruitment letters and consent forms for parent/guardians/etc.; and 3) participant assent forms and/or process used to obtain and document assent.

Upon completion of the research project, how will the site/location, parents/guardians/etc., and participants be debriefed and notified of the termination of the project.

Complete and include with the application package.

Vulnerable populations are listed below. Those with * have additional information or may require the Principal Investigator to answer additional questions. Click on the links to go to those sections:

Elderly (65+ Years)

Prisoners

Wards of the State

Pregnant Women

Fetuses

Mentally disabled

Children (under the age of 18)*

Researchers also should describe safeguards for populations that are:
 Vulnerable to influence or coercion (includes █████ students or employees)*
 Economically disadvantaged
 Educationally disadvantaged (includes illiterate)*
 Decisionally impaired*Non English speakers
 International research*

Children

Additional protections are required by 45 CFR part 46 subparts B, C, & D for children (Less than 18 Years of age).

Complete the following if you will be conducting research with children.

1. What is the age range of the children in this research?

2. Where will the children participate?

Home School College lab/office/clinic Other- Specify:

3. Will any of the research take place in school settings?

Yes No

If yes, have you obtained the necessary permission from the school district? Attach documentation of permission

If no, explain or attach a draft of the letter you plan to use:

4. Are any of the children wards of the State or any other agency, institution, or entity?

Yes No.

If yes, provide details:

5. Designation Risk / Benefit:

Minimal risk means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. [45 CFR 46.102(i)]

Check the risk designation you believe appropriate:

_____ Research not involving greater than minimal risk. [45 CFR 46.404]
Permission of only one parent is necessary

_____ Research involving greater than minimal risk but presenting the prospect of direct benefit. [45 CFR 46.405]

The IRB must determine that:

- a) the risk is justified by the anticipated benefit to the subjects;
- b) the relation of the anticipated benefits to the risk is at least as favorable to the subjects as that presented by available alternative approaches.

Permission of only one parent is necessary

_____ Research involving greater than minimal risk and no prospect of direct benefit to individual participants, but likely to yield generalizable knowledge about the subjects' disorder or condition. [45 CFR 46.406]

The IRB must determine;

- a) the risk represents a minor increase over minimal risk;
- b) the intervention or procedure presents experiences to participants that are reasonably commensurate with those inherent in their actual or expected medical, dental, psychological, social or educational situations;
- c) the intervention or procedure is likely to yield generalizable knowledge about the subjects' disorder or condition, which is of vital importance for the understanding of the participant's condition.

Permission of both parents is necessary. If the research is designated 46.406 or 46.407, both parents should give their permission, unless one parent is deceased, unknown, incompetent, or not reasonably available, or when only one parent has legal responsibility for the care and custody of the child.

Permission of one parent only for research designated 46.406 or 46.407, when one parent is deceased, unknown, incompetent, or not reasonably available, or when only one parent has legal responsibility for the care and custody of the child.

Research not otherwise approvable which presents an opportunity to understand, prevent, or alleviate a serious problem affecting the health or welfare of children.
[45 CFR 46.407]

- a) the IRB finds that the research presents a reasonable opportunity to further the understanding, prevention, or alleviation of a significant problem affecting the health and welfare of children; and
- b) the panel of experts must also find that the research will be conducted in accordance with sound ethical principles.

Permission of both parents is necessary. If the research is designated 46.406 or 46.407, both parents should give their permission, unless one parent is deceased, unknown, incompetent, or not reasonably available, or when only one parent has legal responsibility for the care and custody of the child.

Permission of one parent only for research designated 46.406 or 46.407, when one parent is deceased, unknown, incompetent, or not reasonably available, or when only one parent has legal responsibility for the care and custody of the child.

Alteration or waiver of parental permission. Complete appropriate supplemental form (in IRBNet document list) to request alteration or waiver of the consent process.

6. If the research is being conducted in a group setting (e.g., a classroom), explain what provisions have been made for children whose parents have not given permission for them to participate:

7. Assent by children - In determining whether children are capable of providing assent, you should take into account the ages, maturity, and psychological state of each child who will be involved. If the IRB determines that the research holds out a prospect of direct benefit to individuals, assent of the children may not be a necessary requirement.

It is important to include each child in the discussion of the research as appropriate for his or her maturity level. A signature line for assent may be included on the consent form when children may be enrolled. The nature of the study, however, determines if a child's signature should be obtained in connection with an assent to study participation. Please indicate below your judgments about including a signature in the assent process:

_____ Assent signature obtained: This study does not involve interventions likely to directly benefit the health or welfare of individual children. They are likely, however, to comprehend and appreciate what it means to be a volunteer for the benefit of others.

_____ Assent signature **not** obtained: Children will be included in the discussions about research participation. The children who will participate in the study, however, either have the prospect of an important and direct benefit to the health or well-being of each child or are unlikely to understand research participation sufficiently to provide meaningful assent.

Vulnerable to coercion or undue influence must be minimized 45 CFR 46.116, CFR 50. 46.111 (b)/21 CFR 56.111(b) states, “When some or all of the subjects are likely to be vulnerable to coercion or undue influence, such as children, prisoners, pregnant women, mentally disabled persons, or economically or educationally disadvantaged persons, additional safeguards have been included in the study to protect the rights and welfare of these subjects.”

Students and employees may be vulnerable to “subtle inducements to participate”. The researcher who plans to recruit either population must define clearly the participants to be enrolled and the rationale for their participation. In addition, the mode and timing of recruitment must be explained. The researcher needs to clearly describe how recruitment and data collection procedures will avoid undue influence or coercion. Sign up or general announcements are less coercive than direct invitations to particular students or employees.

Another special consideration for employee and student populations is the issue of confidentiality of research data. Depending on the nature of the research and the data collected, a break of confidentiality could affect a person’s employment, career path, educational plans, or social relationship with the academic community. Therefore, the researcher should document carefully the methods to protect the subjects’ identity and research data (e.g., coding, storage of research files, limits of accessibility to research data, etc.). For example, the Researcher/Instructor should arrange for another person to observe, administer or carry out the research activities.

██████ Students- Please note that some college students are minors, for whom parental consent is still needed. Researchers should be careful to not unduly influence student participation. The use of one’s own students as research subjects is discouraged because of the inherent risk of coercion. Although student participation in research may have educational benefit, participation for course credit may be viewed as coercive unless alternative activities that are comparable in time, effort and credit are offered. If alternatives are not available, students could be given a choice of studies in which to participate. Please note that subjects must be allowed to withdraw from a study at any time and without penalty. This means that they must still receive full credit for research participation, even if they withdraw. Additionally, the consent form should include two additional elements: 1) There must be a statement that the student’s grade or grades will not be impacted by the student’s decision to participate or not participate. 2) The students must be informed that the Researcher/Instructor will not examine any data until the semester’s grades have been submitted to the Office of the Registrar.

██████ Employees-research studies intended for employees should not pressure potential subjects into participation due to concerns regarding job security, promotion, tenure, or other influences from supervisors. Information must be protected.

Illiterate Subjects

Subjects who are unable to read should not be excluded from research on the grounds of illiteracy. If the subject pool includes individuals who are illiterate, the following procedure must be used and documented.

If a subject is unable to read or if a legally acceptable representative is unable to read, an impartial witness should be present during the entire informed consent discussion. After the written consent form and any other written information to be provided to subjects is read and explained to the subject or the subject's legally acceptable representative, and after the subject or the subject's legally acceptable representative has orally consented to the subject's participation in the trial, and, if capable of doing so, has signed and personally dated the consent form, the witness should sign and personally date the consent form. By signing the consent form, the witness attests that the information in the consent form and any other written information was accurately explained to, and apparently understood by, the subject or the subject's legally acceptable representative, and that informed consent was freely given by the subject or the subject's legally acceptable representative

Decisionally impaired adults may lack the capacity to give valid consent to participating in research. There may be problems with memory, comprehension, and reasoning. Impairment may be stable, may fluctuate or be temporary. Capacity must be determined relative to the tasks (for example consenting to an interview vs. consenting to a drug study). Decisionally impaired adults may be more vulnerable to coercion or influence (for example an elderly patient may give consent for an interview because they want to please the nursing home staff).

The researcher needs to consider if the prospective subject population has the capacity to provide informed consent. Studies that involve persons lacking sufficient capacity to consent need to provide information regarding how they will be protected.

International Research

To be completed by the [REDACTED] University Principal Investigator:

International Site location(s):

International Site Principal Investigator name(s) and email:

International Site Name of Ethics Committee and email:

International FWA # (if applicable):

1. Please describe the rationale for conducting research at an international site:

2. Local Issues. If research is to be conducted abroad, the [REDACTED] University IRB requires that research protocols address local issues. Researchers should refer to the *International Compilation of Human Research Protections* (Office for Human Research Protections, US

Department of Health and Human Services), which is a listing of the laws, regulations, and guidelines that govern human subjects research in many countries around the world. The compilation is posted at <http://www.█.edu/academic/gradschl/ossip/irb/>

The following items should be completed via communication/collaboration with the host PI and/or Ethics Committee:

- a) Discuss how the risks are acceptable within the social context of the host country:
- b) Describe how informed consent will be obtained:
- c) If compensation is being offered, describe its appropriateness for the setting:
- d) Describe resources available to conduct the research (e.g. will research staff have appropriate training):
- e) Describe resources available to monitor the research:
- f) Explain if adequate provisions will be available to continue if the research or health care intervention proves effective:
- g) How will the results of the research be used at the host site?
- h) If applicable: Describe the local standards for health care:
- i) If applicable: Describe how the research is responsive to the health needs of the host site:

Appendix D: IRB Approval from Site of Study

OFFICE OF SCHOLARSHIP AND SPONSORED PROJECTS

DATE: January 27, 2017

TO: Brett Bruner

FROM: [REDACTED] IRB

STUDY TITLE: [1006806-1] The Impact of a First Year Living-Learning Community on First-Generation College Student Academic Success and Persistence

IRB REFERENCE #: 17-065

SUBMISSION TYPE: New Project

ACTION: APPROVED

APPROVAL DATE: January 26, 2017

EXPIRATION DATE: January 25, 2018

REVIEW TYPE: Full Committee Review

Thank you for your submission of New Project materials for this research study, [REDACTED]. [REDACTED] IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Full Committee Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form unless documentation of consent has been waived by the IRB. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document. The IRB-approved consent document must be used.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.

Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.

If you have any questions, please contact [REDACTED]. Please include your study title and reference number in all correspondence with this office.