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Relationship between living environment and first-year student academic achievement and persistence.

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RELATIONSHIP BETWEEN LIVING ENVIRONMENT AND

FIRST-YEAR STUDENT ACADEMIC ACHIEVEMENT AND PERSISTENCE

By

Shannon Deaton Staten
M.Ed. University of North Texas, 1982
B.A. Marshall University, 1980

A dissertation
Submitted to the Faculty of the
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University of Louisville
in Partial Fulfillment of the Requirements
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A Dissertation Approved

October 21, 2016

By the following Dissertation Committee

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Dr. Bridgette O. Pregliasco

DEDICATION

I dedicate this dissertation to my family. My husband and best friend, Cliff, has supported me throughout this journey and has graciously served as my sounding board and read through my drafts. My children: Joshua, Ryan, Anna, and Glenn have been my inspiration to learn more and accomplish my dreams. While there were times that I questioned my reasons for obtaining my Ph.D., knowing that I was showing them that we keep going even when it is a rough road kept me pushing forward. Finally, I dedicate this to my late grandmother, Anna Deaton, who emphasized the importance of education and modeled lifelong learning to us throughout her life.

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I have the privilege of working with great colleagues to do this work in housing and student affairs. I am grateful for the housing staff at UofL who were supportive and encouraging as I took classes and completed my comprehensive exams. They helped me laugh when I needed it and accepted my new-found knowledge when I adapted it into our work. Dr. Tom Jackson challenged me to enter the program and to obtain my Ph.D. Arnold Hook in the Institutional Research office at UofL not only assembled the data set

for my study, but his collaboration with me over the years helped me solidify my study and what I wanted to accomplish.

There is a phenomenal group of women colleagues who are senior housing officers around the country that I am blessed to call my friends. These women in housing (WOHOs as we call ourselves) have been my energy and my inspiration over the years. They have been there for me when my personal life became overwhelming and have cheered me on as I have worked through each step of this degree. They are what kept me focused on what is important in both my personal and professional life.

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A special thanks goes to my husband for his love and support, and my children who have grown up while I took classes and completed this journey. My extended family of sisters, brothers, nieces and nephews are also special to me and cheered me on each step of the way.

ABSTRACT

RELATIONSHIP BETWEEN LIVING ENVIRONMENT AND
FIRST-YEAR STUDENT ACADEMIC ACHIEVEMENT AND PERSISTENCE

Shannon Deaton Staten

October 21, 2016

Student apartments that are privately owned and managed on the edge of higher
education campuses have become a new paradigm in campus housing. Campus
administrators consider privatized housing as a financial resource for providing updated
housing facilities. There is minimal research regarding how students succeed
academically if living in the privatized housing properties. Krause (2007) confirmed that
research regarding how students living off campus succeed in college needs to be more
fully addressed. This study was designed to contribute information of how students who
live in off-campus privatized student housing apartments succeed academically. This
information is important to campus administrators and housing professionals as they plan
future housing options for students.

This study analyzed grades and persistence with one first-year cohort at a
Midwestern, urban institution. The sample included students who lived in each of the
three types of campus housing: on campus, privatized student housing off campus, and
commuting students. Two pre-college attributes, gender and generation status, were
considered with ACT scores analyzed as the covariate.

The data produced 103 students (15 first-generation students) living in each of the types of living environment. The small sample numbers may have contributed to the non-significant results of the study. None of the variables were found to have a statistically significant interaction with grades; only generation status was found to be a statistically significant predictor of persistence. The non-significant results neither confirmed nor dispelled the hypotheses of the study and cannot be generalized to other institutions and the results cannot be interpreted with any confidence. However, the findings raised questions that should be studied further.

Generation status findings seemed to negate the hypotheses which were based on previous research and asserted that students living on campus have higher grades and persist at higher rates. The findings followed some of research that has found that different groups of students are affected differently by their living environment. Future studies should try to replicate the findings while analyzing larger numbers of students to try to accomplish statistical significance with the variables. Additional variables such as ethnicity and gender-identity should be included in future studies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Public institutions of higher education have faced a pattern of financial challenges in recent history including the reduction of state supported funding resulting in public institutions evolving from "*state* universities to *state supported* universities" (Newbold, Mehta, & Forbus, 2011, p. 141). A combination of changed state income tax revenue models as well as the increased cost of state funded programs such as Medicaid, elementary and secondary education, and the criminal justice system indicates the decrease in state support funding is not short-term and recession related but rather long-term and structural by nature (Ehrenberg, 2006; Kissler, 1997; Tandberg, 2010). Titus (2009) reported that by the late 1990s state appropriations to Medicaid had increased to the point that Medicaid was funded at a higher level than higher education. Government funding to higher education declined between 1980 and 2001; state funding declined from approximately 50% to 30% and the federal government appropriations from 18% to 14% (Hossler, Lund, Ramin, Westfall, & Irish, 1997; Titus, 2009). According to Redd (2014) of the National Association of College and University Business Officers (NACUBO), state and local appropriations for higher education fell by 8% over the past five fiscal years. NACUBO also reports that state legislatures usually allot funding to specific functions within higher education such as supporting research and state financial

aid incentives issued in the form of state scholarships. The designated use of the funding averages approximately 76% of the appropriation to the institutions.

Many state educational institutions now implement more flexible financial plans that are less dependent upon state financing while maintaining or elevating excellence in academic provision as one response to the reduced funding (Simons, 2011). According to Bekurs (2007) this change in funding models amplifies the market-driven character of higher education, which is a primary reason that alternative financial models will likely continue to grow. Two of the more common business practices that address alternative financial management include identifying some units on campus that may function independently of the institutional operations budget known as auxiliary units, and allowing units on campus to outsource some of their services or responsibilities for the campus to private businesses who specialize in the service.

NACUBO defines an auxiliary unit as an entity that exists to furnish service to students, faculty or staff acting in a personal capacity. Auxiliary units are self-supporting which provide non-instructional support in the form of goods and services as well as fund the service provided through charges directly to the students and users without subsidy from the institution (Irvin & Meyers, 2002). Irvin and Meyers (2002) added that NACUBO worked with a group to write a mission statement for auxiliary units to follow, "Auxiliary Services facilitates the creation of community, extends the learning environment beyond the classroom, and enhances the quality of campus life through the delivery of quality goods and services" (p. 31). It is also common to expect auxiliary units to pay service fees, user fees, rent, and other administrative charges to the general budget for the institution as a means of additional revenue to the institution (Pittman,

2

2012). Auxiliary units typically encompass functional areas that follow business practices in their service design and provision including dining services, housing, printing, student unions, recreation centers, athletics, and bookstores (Pittman, 2012; Schuh, Jones, Harper, & Associates, 2011).

Outsourcing, contracting out, and privatization are interchangeable terms that are used depending upon the language preference of the business and finance officers of the institution. The process of outsourcing or using a private entity rather than in-house personnel to deliver a service is a strategy for cost control for colleges and universities (Sabo, 2014). Reasons why an institution or unit may outsource particular services may relate to the overall costs of providing the service, accepted staff structures, and available resources (Dunkel & Baumann, 2013). Outsourcing could reduce the number of employees and their accompanying salaries and benefits as duties are contracted with a private company. This allows the university to focus on academic related functions and have a third party focus on tasks of which they are considered the experts (pest control, dining, construction, etc.). Outsourcing also expands the financial model for the institution to fund services that are considered student support services and are not directly connected to provision of the academic curriculum (Bekurs, 2007; Sabo, 2014). In addition, a private entity typically operates on a larger scale by leveraging its skills across many clients, and bringing greater expertise and purchasing power to a campus. Palm (2001) offered two primary reasons that an institution chooses to outsource a service as the opportunity to reduce and control operating costs, plus the ability to improve institutional focus by allowing the vendor who specializes in the service to provide for the area. The premise for this concept is that it frees the institution to focus

resources on providing the academic curriculum, as well as possibly obtaining resources

not available internally (Bushman & Dean, 2005). Historically, services that fall under a

purview of the business officer such as dining, postal services, and bookstores are

outsourced to private vendors (Moore, 2002; Staten, 2013). More recently, outsourcing

includes the provision of campus housing (Stoner & Cavins, 2003). Privatization is used

regularly when referring to campus housing managed by private developers. In the

mid1980s, private management companies began using public private partnerships (P3)

to meet the needs for new housing for college campuses and student demand for modern

apartment-style products (Bayless, Wilhelm, & Wills, 2013; Cole, 2012).

Institutional business officers view a P3 as a viable alternative to managing

housing programs without straining the institutional financial portfolio and is typically

used when an academic institution wants a private third party entity to be responsible for

the funding, development, and operation of a new facility or program (Cole, 2012). A P3

allows for a cooperative business arrangement between the public institution and a

private organization or business that provides updated campus housing and answers the

concerns of the institution regarding aging and outdated residence hall facilities. This

alternative provision of campus housing creates additional sources of revenue for the

institution as well as resources that can be shared with the institution for a higher return

on investment such as services from the local community (e.g., cable, internet, and

sharing of infrastructure). Campus officials consider the P3 model an answer for lack of

funding, preservation of debt capacity, provision of lower development costs, faster and

more streamlined delivery, and the potential for an additional revenue source to the

institution. The value of financial benefit that P3 relationships offer institutions serves as

the primary reason for such growth in this new type of campus housing (Bayless, et al., 2013).

P3 expands the options for the type of construction and the finance options utilized by institutions which can create a greater financial plan (Bayless, et al., 2013; Cole 2012). The private company is able to build these housing units economically through contracted suppliers and the bulk number of purchases made of inventory across multiple locations. Private developers meet the need for updated campus housing facilities by designing, building, and managing high-amenity-based apartment communities in a quicker and more cost effective manner than higher education institutions. The cost-effectiveness is in part due to the shorter timeframe that a private entity can design and build a facility therefore utilizing and receiving revenue on the space more quickly than the traditional government based model for construction (Cole, 2012; Grimsey & Lewis, 2005). The design of the facility structure can reduce costs. According to Cole (2012), the P3 model suggests that "when wood framing and wood flooring are used, a residence hall can be completed more quickly than when steel and concrete are used" (p. 180). Therefore, private entities may decide to use less industrial infrastructure than the typical higher-education construction process. Another benefit of working with a private company is the access to flexible funding sources other than those based on government guidelines as is the case with higher education (Bayless, et al., 2013).

The management model utilized by most private developers is more focused on maintaining modern and consumer based housing that provides high-level physical amenities for students. One of the common qualities between the different private

companies who are building housing is the primary goal to provide more privacy in

sleeping and bath areas while providing amenity-driven common space such as fitness

centers, theater rooms, business centers, self-serve coffee bars, video gaming centers,

pools, outdoor play areas, and recreational lounges than what is found in the traditional

on-campus housing facilities (Bayless, et al., 2013; Cole, 2012). While the cost of

construction can be more efficient due to the style and type of building environment, the

addition of amenities found in the privatized housing does increase the cost of living to

students. These environments also require 12 month leases with students which increase

the cost of living during summer months when a student could otherwise live at home.

While some properties provide the level of staff intervention, support, or control

over student behavior, communities, and student crises as found in housing managed by

the institutions, the student life concept of many privatized properties is to focus

resources on the amenities (Novak, 2008). This market-driven model of providing

student housing tends to have staff trained more as leasing agents for the property than

for student support in community and student development. The privatized community

does not provide staff with the same expectations or the same staff to student ratios as

learning-based housing that is managed by the institution to assist with student crisis

intervention and student learning (Van der Werf, 1999). This privatized model also

promotes an independent environment that does not provide the same level staff

assistance with roommate issues, behavior, and student care concerns as the learning-

based housing model.

Some administrators at institutions agree with private housing developers that

utilizing the P3 model meets what the current students seek in their college living

experience such as an apartment that looks and feels more like their space at home such as the provision of private bedrooms and baths, drywall and plaster ceilings, double hung windows, and carpet throughout the living space. Families expect their students to have the amenities that may be found at home such as kitchen appliances (dishwasher, full-sized refrigerators, washer and dryer), and also welcome the clubhouse amenities such pools, media rooms, and exercise areas. Therefore, families and students are not as impressed with the older housing facilities found on campuses, specifically the flat-roof, high-rise buildings that look very institutional with concrete interior walls, tiled floors, and shared bedrooms and bathrooms (Bekurs, 2007, Smith, 2009).

Housing professionals argue that while families and students want more private environments that have higher amenities, students will become more involved and will commit to the overall campus environment if they live where they have community activities such as group dining and shared public space. Studies that examine the relationship of the type of facility of the on-campus living environment and first-year student persistence find that those who live in traditional residence halls with common lounges, hallways, and services retain at a significantly greater rate than those who live in facilities designed with more private accommodations such as apartments (Bozick, 2007; Garrard, 2006; Nayor, 2016; Novak, 2008). There is a positive correlation between campus living and graduation due to the increased opportunity for developing a sense of belonging and having regular interaction with campus officials, faculty, and other students (Herndon, 1984; Schudde, 2011; Velez, 1985). Studies conducted using survival analysis and regression analysis statistics supported the prediction of persistence of university students and found a significant relationship between choice of residence on

campus and persistence (Kiser & Price, 2008; Murtaugh, et al., 1999; Pizzo, 2009).

These studies focused on university owned facilities and not buildings provided or

managed under a P3.

The trend of using the P3 model as the answer to the provision of institutional

campus housing has created one of the most polarizing debates on campus over the past

few decades (Bayless et al., 2013). Business and foundation officers on campuses view

the value of the P3 resource very differently than student affairs and housing

professionals who typically see this model as a potential threat to the historical campus

culture that has the institution managing the on-campus halls with staff and faculty of the

institution. Concern also includes that change in the role residential life provides in

student development and retention through intentional student experiences found within

the living environment (Simons, 2011). McCuskey (2013) acknowledged that campus

officials will continue to outsource management of campus housing to the private sector

and that the campus professionals who believe the residential living experience has a

more positive relationship to student success will continue to resist this trend. The

relationship between these privatized communities and higher education institutions

ranges from a weaker or non-relationship and fully competitive process to a formal

affiliation or partnership with the institution to provide the community as an extension of

campus (Martin & Allen, 2009).

Higher education professionals who focus on student success see the loss of

collegiality and the loss of control of the residence life experience in this new living

environment as problematic in long-term student success (Bushman & Dean, 2005;

Helfrich, 2011; Wertz, 2000). Palm (2001) agreed with the concern regarding

outsourcing within the educational realm adding the suggestions noted by Pulley (2000) and Wertz (1997) that giving up control of how the service is provided and compromising part of what the institution stands for, creates a culture that is blurred between the bottom line for costs and the overall higher educational goal of educating the whole student. However, there has not been adequate research conducted to support the argument of the institutional staff who work with student living environments that the privately managed communities may have a negative relationship with student retention.

With the lack of research evidence on the relationship of this new type of campus housing and student success, business and foundation officers use the anticipated financial gains as the stronger argument for the P3 environment. Administrators view a P3 as a positive resource for reducing the cost of student housing on the institutional operational budgets and a potential revenue generation for the institution (Cole, 2012). Many administrators also note the ability to provide newer amenity-driven campus living to potential students as a necessity for student recruitment downplaying the overall student development opportunities that may be lost in the transition. The potential of financial support to institutions and the lack of evidence that this new type of student living would have a negative relationship on student success suggest there will be continual growth in the privatized industry thus creating this paradigm shift in campus housing.

While privatization of campus housing can contribute to the financial growth of a campus through both the reduction of costs of services and an increase in non-consumer based revenue, another means of institutional revenue gain is through student success and retention (Fike & Fike, 2008; Pizzo, 2009). Student retention has been positively

associated with student engagement in campus activities and with the academic community including living on campus (Astin, 1984; Berger, 1997; Kuh, 1993).

A significant connection exists between student involvement in the campus academic and social environments, living on campus, and student retention (Astin, 1993; Blimling, 1993; Pascarella, 1982; Pascarella & Terenzini, 2005; Schudde, 2011). Wilson and Rygg (2013) added that residence halls should be purposive environments that offer opportunities that enhance the academic experience and overall personal lives of the students who live on campus. A positive sense of community is gained from living on campus that adds to successful acclimation into collegial life, and students living on campus persist at a higher rate than those living off campus (Berger, 1997; Lowther & Langley, 2005; Moores & Klas, 1989; Schudde, 2011; Turley & Wodtke, 2010).

While living on campus provides a sense of community, it is important to consider the student's background characteristics when developing the strongest opportunities for students to engage. Gender, ethnicity, socioeconomic status, and generation status influence students' involvement in various college activities and events, determining where they may live, and identifying the degrees they seek (Baxter-Magolda, 2006; Jenkins, Belanger, Connally, Boals, & Duron, 2013; Morrow & Ackermann, 2012; Pike & Kuh, 2005).

"Different groups of students are differentially affected by their living environments" (Turley & Wodtke, 2010, p. 506). Gender is a predictor of student persistence and academic achievement (Nayor, 2009). Female students adjust and are motivated to persist through the college environment differently from male students (Baxter-Magolda, 2006; Enochs & Roland, 2006). First-year students and first-

10

generation students are identified to be at higher risk for becoming involved and persisting to graduation due to the lack of pre-college exposure of campus life and academic expectations (Astin, 1984; Pascarella, 1985; Pascarella & Terenzini, 1991, 2005; Soria & Stebleton, 2012; Strange & Banning, 2015). Low-income, first-generation students are nearly four times more likely to leave higher education after the first-year than students who had neither of these risk factors (Engle & Tinto, 2008).

The primary role of practitioners in student affairs is to enhance opportunities for student development and learning (Wilson & Rygg, 2013). Student Affairs began in the mid-1800's when the president of Harvard University appointed a dean of the college as a "new" position to his administration (Sandeen, 1991). The president noted that by having someone responsible for the students outside the classroom, he could focus on larger issues of the school and faculty could focus on teaching in the classroom. This dean of the college was tasked with assisting students with their personal concerns as they studied at the institution. The role developed over time to include monitoring student behavior, serving as a contact to parents and the community, and enforcing school policies being adapted as institutional and student needs changed.

Many institutions have delegated student retention programs and other student success initiatives to student affairs staff (Kuh, Kinzie, Schuh, Whitt, & Associates, 2005). As leaders in student retention programs, professionals of student affairs have not only maintained the student care and administrative duties for student success, but have learned to partner with faculty and academic programs to help develop the out-of-classroom experiences that can make a difference.

One expectation of professionals working with students is adaptability to the current environment and student needs (Love & Estanek, 2004). Student affairs professionals have historically adapted techniques and opportunities for student engagement as the campus climate has shifted including: the return of veterans to campuses after World War II, parental involvement changes over the years, and the student activist efforts. This new trend of privatized housing requires student affairs and housing professionals to better understand the relationship between this new living environment and student success in order to adjust services, programs, and student engagement opportunities for students.

Krause (2007) confirmed that the research for the success of students living off campus is limited and needs to be more fully addressed. There is a gap in literature regarding the relationship of the P3 campus living environment and student retention, involvement, and success. Most studies regarding student persistence and living environments were conducted prior to the paradigm shift in campus housing of the past twenty years (Anderson & Strickler, 2007; Martin & Allen, 2009). Much of the research conducted regarding the relationship between the campus living environment and student success has focused on the on-campus and commuting students.

These two classifications lumped together students living in privatized student communities and students who commute from single residences or apartments in single dwellings as commuters, which skews the findings since the living environments are very different. There has been little research conducted on the relationship of the privatized group living environment and student success. Research regarding the commuter student shows a connection between the distances or proximity students live to the institution and

persistence and grades, but does not consider whether there is a difference in student success depending upon the different type of living environment (group or individual) in which the student may live (Lowther & Langley, 2005; Moores & Klas, 1989; Schudde, 2011; Turley & Wodtke, 2010). This failure to determine whether there is a difference in the relationship of student academic success and persistence when looking at the privatized student communities has created a gap of evidence for higher education.

In addition, prior to the 1990s, literature reviews focused on studies conducted primarily on the student who was white, traditional aged, living on campus, and not working. It became evident to higher education administrators that the demographic of student profile was diverse and evidence of student academic achievement and persistence needed to include a more diverse population. "More focus has been given to the changing and increasingly diverse undergraduate body of students as well as economic status, living environment, work and family responsibilities, ethnicity, sex, and full- and part- time status" (Pascarella & Terenzini, 2005, p. 2).

Student Engagement

The National Survey of Student Engagement (NSSE) defines student engagement as

> "two critical features of collegiate quality. First is the amount of time and
> effort students put into their studies and other educationally purposeful
> activities. The second is how the institution deploys its resources as well
> as organize the curriculum and other learning opportunities to get students
> to participate in activities that decades of research studies show are linked
> to student learning" (NSSE, 2016, About NSSE).

Kuh (2008) suggested that various activities and opportunities contribute to student engagement; specific examples include those that are considered high-impact practices (HIPs). "HIPs share several traits including: require considerable time and effort on the part of the student and institution; provide learning opportunities outside the classroom; require meaningful interactions with faculty members and students; encourage interaction with diverse others; and provide frequent and meaningful feedback" (p. 30).

Wilson and Ryggs (2013) discussed the connection of living on campus and student engagement concluding from their literature review that students living on campus are more likely to be involved in opportunities that can enhance student success. The literature identifies living on campus as one indicator of student engagement that can be tied to improved student retention (Bozick, 2007; Pascarella & Terenzini, 2005; Pascarella, Terenzini, & Blimling, 1994), because the proximity to campus activities increases the ability for students to engage with the campus resources over those who were commuting from off campus (Astin, 1993; Blimling, 1993; Herndon, 1984; Thompson, 1993). LaNasa, Olson, and Alleman (2007) also concluded that students living on campus are more likely to engage in campus activities and relationships with diverse individuals as well as exhibit increased academic effort. The literature review also noted the importance of a social and welcoming environment to a sense of belonging and student success while in college (Berger, 1997; Schlossberg, 1989). Schroeder and Mable and Associates (1994) summarized the importance of group living on campus by recognizing that living in residence hall environments exposes students to a variety of experiences and community-building activities. Involvement of professional and paraprofessional staff who provide intentional educational experiences for the resident

14

students distinguishes living in a campus residence hall from most other forms of housing. Pascarella, et al., (1994) state that on-campus residents "have significantly more social interaction with peers and faculty and are significantly more likely to be involved in extracurricular and consistently persist and graduate at significantly higher rates activities than their counterparts who live off campus" (p. 26-27).

Theoretical Framework

Collegiate environments have the power to shape student behavior and influence their successes through the organizational behavior of the institution which includes the culture, campus climate, social and academic interaction, support mechanisms, and campus events (Astin, 1984; Berger & Milem, 1999; Kuh, Kinsey, Buckley, Bridges, & Hayek, 2006; Pascarella & Terenzini, 2005; Reason, 2009; Turley & Wodtke, 2010). While the opportunity to participate in any of these elements of campus environment is available to all students at the institution, those students living on campus are more likely to be involved due to several influences including: housing staff and student leaders who are trained on how to intentionally expose students to resources and activities available on the campus; peer groups who are participating; the convenience of staying on campus to participate; and a gained sense of belonging as the campus culture becomes more familiar to the students.

This study used two models that reflect the interaction and campus environment concepts to show a relationship between entry-attributes, involvement, and student success: Alexander Astin (1984) presented the Input-Environment-Output (IEO) Model and Vincent Tinto developed the Student Integration Model (1975, 1993). These models

recognize that pre-college knowledge and preparation, campus environment, and campus experiences influence students as they decide to become involved.

The conceptual model of this study reflected the assertions made by Astin (1984) regarding student involvement and Tinto in his Theory of Student Departure (1982, 1993) that indicate a relationship among entry attributes, student experience in the environment, and the decision to persist or leave. This study used the concepts of Astin (1984) and Tinto (1975, 1993) as a basis for developing the framework for the research. The study considered that students are effected by pre-entry characteristics such as gender and generation status as well as experiences such as their living environment as they adjust to college. Therefore this study analyzes pre-college attributes as part of the study.

Pre-college attributes can affect first-year students and their decision to become involved in activities and group interactions regardless of the living environment. This study identified gender, generation status, and ACT score as factors that have been analyzed in relationship to student success and persistence. Sparkman, Maulding, and Roberts (2012) found a significant relationship between ACT score and enrollment status of students after a first semester of post-secondary education. They also substantiated that ACT score was statistically significant as a predictor of cumulative GPA. Therefore, ACT entry score is the covariate for all research questions asked in this study. The different types of campus living environment reflect the campus environmental factor of interaction with peers, faculty, and staff as well as intentional opportunities provided by the environment for connection to academic resources. Student success denotes the two dependent variables, student academic achievement and persistence.

Previous studies have referred to students living in individual residences or with family, but few have been conducted on students living in student apartment communities. This current study separates the students commuting from individual residences and students living in privatized student group communities to acknowledge this third type of campus environment. Student success in this study is based on the cumulative GPA after the first year of college and the decision to persist from the first year to the second year of study at the institution.

Figure 1 is the conceptual model informing this study, showing the connection between the models of Astin and Tinto and the current study. The model reflects the importance of considering pre-entry attributes when determining if there is a significant relationship between the campus living environment and student academic achievement and persistence.

Figure 1: **Conceptual Model: Relationship between Living Environment and First-year Student Academic Achievement and Persistence**
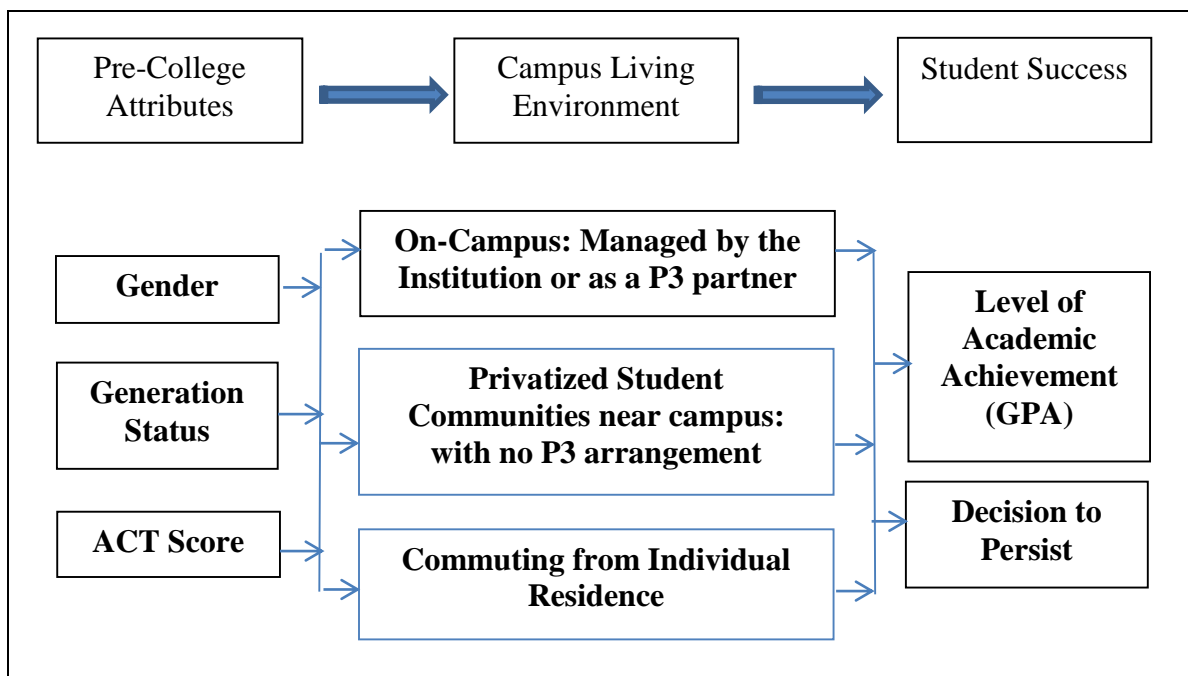
Statement of Problem

This study addressed the lack of evidence-based information regarding the relationship between living off campus in privatized student communities and first-year student academic achievement and persistence to the second year. Little research data are available regarding the success of students living in privatized communities. Since there is little evidence available to support the argument of student development specialists that the privately managed communities may have a negative relationship with student success, institutions may make their decisions to form a P3 based more on the financial models available than the "assumptions" of the relationship of living environment and student success.

If the negotiation of a P3 occurs between the business and foundation administrators and does not include the student affairs and housing staff, student success could be minimized. It is important to provide evidence-based information to help the business teams negotiate services that affect student experiences on campus. Many administrators of higher education continue to choose the P3 model that forms an affiliation or alliance with private companies to build and manage student housing on campuses for their students. The decision to privatize the management of student housing has been typically based on financially related factors with little or no discussion regarding the student living environment and the development of goals and programs that support the institution's mission. Also, the initial expectation of families and students coincides with the message that privatized housing entities presents to institutions that it is most important to provide updated, amenity-driven housing.

With the lack of research evidence on the relationship of this new type of campus housing and student success, the business and foundation officers use the anticipated financial gains as the stronger argument for the P3 environment. Many campus administrations view a P3 as a positive resource for reducing the cost of student housing on the institutional operational budgets and a potential revenue generation for the institution. The ability to provide newer amenity-driven campus living to potential students is considered a necessity for student recruitment which can downplay the overall student development opportunities that may be lost in the transition.

Privatization of campus housing can contribute to the financial growth of a campus through both the reduction of costs to the overall expenditures and an increase in non-consumer based revenue. Another measure of institutional revenue gain is through student success and retention (Fike & Fike, 2008; Pizzo, 2009). Intentional opportunities for student engagement in campus activities and with the academic community increases student academic success and the likelihood for retention (Astin, 1984; Berger, 1997; Kuh, 1993).

It is important to conduct research that provides evidence on the impact of student success and living environments that includes this new paradigm of housing. Both campus administrators and incoming students and their families need evidence based information regarding living environments that provide the best opportunities to support student success. Families will be able to make better decisions regarding where their student lives and campus administrators will be able to make informed decisions regarding what is needed to support student success as they negotiate P3 relationships. Another benefit of evidence-based information regarding student success and living

environment is that private entities will know where students succeed or struggle if living in the privatized communities and thus can address the need if they want to provide academic support for students.

This study determined whether there is a significant relationship among three types of campus living environment and student academic achievement and persistence to a second year at the same institution. The findings included any significant relationship among the three types of living environment and student academic achievement and persistence among first-year students controlling for gender, generation status, and ACT score at entry. The independent variables and the covariate were all found as examples of common background characteristic used in student retention and academic achievement. There were other variables listed as well such as socio-economic status and ethnicity which could have added to the study. However, the researched decided to limit the number of independent variables studied because there was concern the data-set available would be limited and the cell sizes of different variables would be small.

Specifically, this study compared characteristics of students living in three types of campus housing: (1) the student group housing located on campus property, managed by either the institution or a private company under a P3 relationship that programs with a holistic, student learning approach (on-campus); (2) the student group housing located near campuses managed by non-university, private companies specializing in providing student housing (privatized student communities); and (3) individual student residence not managed by the institution or privatized companies who specialize in student group living and located either within a short distance to campus or a further distance requiring the student to commute by transportation (commuting). First-year students living within

each type of living environment were evaluated with additional analyses conducted for pre-college attributes: gender, generation status, and ACT entry score as the covariate.

First-year students and first-generation students are defined differently between institutions and state agencies that monitor higher education. Since the case study analyzed data from one Midwestern, urban, higher-education institution, the definitions used were directly pulled from the institution and the Kentucky Council on Postsecondary Education for the 2011 cohort year of study.

Research Questions

This research explored the relationship among three types of student living environment and academic achievement and persistence at a Research I, Carnegie institution in the Midwest. Ten research questions with the corresponding hypotheses were analyzed in the study.

1. Is there a significant three-way interaction effect of gender, generation status, and living environment on academic achievement adjusting for entry ACT score?

   H_1: There is a significant three-way interaction effect of gender, generation status, and living environment on academic achievement adjusting for entry ACT score.

2. Is there a significant two-way interaction effect between gender and generation status on academic achievement adjusting for entry ACT score?

   H_2: There is a significant two-way interaction effect between gender and generation status on academic achievement adjusting for entry ACT score.

3. Is there a significant two-way interaction effect between gender and living environment on academic achievement adjusting for entry ACT score?

H_3: There is a significant two-way interaction effect between gender and living environment on academic achievement adjusting for entry ACT score.

4. Is there a significant two-way interaction effect between generation status and living environment on academic achievement adjusting for entry ACT score?

   H_4: There is a significant two-way interaction effect between generation status and living environment on academic achievement adjusting for entry ACT score.

5. Is there a significant main effect of gender on academic achievement adjusting for entry ACT score?

   H_5: There is a significant main effect of gender on academic achievement adjusting for entry ACT score.

6. Is there a significant main effect of generation status on academic achievement adjusting for entry ACT score?

   H_6: There is a significant main effect of generation status on academic achievement adjusting for entry ACT score.

7. Is there a significant main effect of living environment on academic achievement adjusting for entry ACT score?

   H_7: There is a significant main effect of living environment on academic achievement adjusting for entry ACT score.

8. Is gender a significant predictor of persistence adjusting for entry ACT score?

   H_8: Gender is a significant predictor of persistence adjusting for entry ACT score.

9. Is generation status a significant predictor of persistence adjusting for entry ACT score?

H_9: Generation status is a significant predictor of persistence adjusting for entry

ACT score.

10. Is living environment a significant predictor of persistence adjusting for entry

ACT score?

H_{10}: Living environment is a significant predictor of persistence adjusting for

entry ACT score.

The study questions and hypotheses were based on the literature review on student success that indicates students are more likely to persist and have significantly higher grades if they live on campus in an environment of support and education along with the intentional socialization and engagement opportunities provided in on-campus living environments (Blimling, 1999; Garrard, 2006; Herndon, 1984; Schroeder & Mable, 1994; Schudde, 2011; Whalen, Saunders, & Shelley, 2009). First-generation students are identified as at-risk students for academic achievement and persistence. The conceptual framework for this study was informed by the interaction models from Astin (1984) and Tinto (1993) that show first-generation students have a higher level of academic achievement and persistence if they acclimate to the campus environment, and have opportunity for social and academic engagement in events and campus resources.

Positionality Statement

The author of this study has worked as a professional staff member for on-campus housing for the past 35 years on four different university campuses. While active in the profession, she has been exposed to privatized student housing both in off-campus properties and P3 environments located on campus as well as has worked within the professional housing organizations on various educational projects involving the

development of standards for privatized housing partners wishing to participate in professional organizations. Specifically, she has worked directly with the private vendors that owned the properties included in this study and had exposure to their daily practices in both the leasing component and student environment provided at the properties. As expressed before, there is little literature based on research that describes the student living goals in privatized housing. Assumptions and interpretations made for this study are based on the information gained through websites and professional experience in overseeing P3 environments on the campus.

Assumptions

Students who live on campus succeed at a higher rate because they tend to have higher ACT scores, have the financial resources to pay to live on campus, and work fewer hours during the academic term (Schudde, 2011; Wilson & Rygg, 2013). One assumption of this study was that the students living in the privatized student communities have comparable levels of financial resources with those who live on campus because both types of environment have room and dining costs to the residents and have pre-determined rates that are not negotiable. Another assumption regarding similarities between those students living on campus and those living in the privatized student communities addressed life complexities (commitments to home, family, and work). Since both types of environment offer individual living leases and assign students accordingly, students do not have family members for whom they are caretakers living with them.

The level of involvement and integration in any of the components of an institutional social systems can contribute positively to the decision made by the student

to persist (Pascarella & Terenzini, 2005). This study assumed that a third similarity

between students living in the two group environments was that students have the

opportunity to socialize with the other students living in the community, share common

schedules and academic stresses, and engage in group events with fellow residents.

Therefore, students living in these group environments may not feel the same level of

lack of belonging to the campus environment as those commuting from home or non-

student based communities.

While there are opportunities in the privatized group living environments for

social interaction the assumption of this study is that students living in privatized housing

are not necessarily engaged in programming that has been intentionally designed to help

student acclimate to campus. Staff within the privatized communities are not as likely to

be trained on student development, student crisis response, and student transition and

success in college at the same level and expectation as on-campus staff. Based on the

literature found on privatized housing that states the primary focus is to provide newer,

amenity driven communities for students, this study assumes that the privatized housing

located off campus does not focus resources on providing student development support at

the same level that university managed and P3 communities located on campus offer.

The author acknowledges that some companies who manage privatized student housing

incorporate student programming more than other companies; the same can be said about

campus housing communities from different institutions. The stronger campus housing

programs managed by institutions utilize guidelines the Association of College and

University Housing Officers – International (ACUHO-I) standards and the Council for

Advancement of Standards in Higher Education (CAS); privatized communities have

access to these guidelines (ACUHO-I, 2016; CAS, 2016) through institutions and the

organizations, but may not be expected to refer to them when managing their properties.

This lends to the assumption that the on-campus living environments are more intentional

in student learning support overall.

While students in both types of group communities have the opportunity for social

interaction, the students living in on-campus housing have the greatest access to staff and

faculty interactions within the living environment in various ways including: programs in

the environment that include faculty and staff availability; advertising and encouragement

of housing staff for residents to participate in events on campus; and group participation

in events that provide opportunity for interaction. Schuh, Jones, Harper, and Associates

(2011) cited Pike (2002) on the effect of living on- and off- campus and how students are

open to diversity as one that substantiates the positive benefits of living on campus. Pike

found that living on campus was a significant predictor of openness to diversity

regardless of differences in background characteristics of the students. "The effects of

living on campus were attributed to the types of relationships students establish in such

an environment and the expanded worldview that this opportunity (living on campus)

creates" (Schuh, Jones, Harper, & Associates, 2011, p. 509).

Students who commute from home may have the added responsibilities with

home and family as well as the time commitment to travel to and from campus. The null

hypothesis for this study is that there is no significant interaction effect of gender,

generation status, and living environment on academic achievement when adjusting for

ACT scores; and gender, generation status, and living environment are not significant

predictors for persistence.

Significance of Research

The purpose of this study was to fill a gap in the literature regarding the relationship among student success, persistence, and a new paradigm of student housing that is becoming more prominent in the United States, privatized student apartment communities that are owned, designed, and managed by private entities with little or no control by higher education staff. It is critical that we begin to collect evidence of the relationship between the privatized student communities and first-year students' success in order to assist higher education administrators to make more informed decisions about the benefits and consequences of creating P3 relationships with privatized developers. Privatized student communities are more prominent around collegiate campuses so there is merit in higher education institutions learning how to work with these private entities to maximize the benefits for both the institution and the students who live there (Anderson & Strickler, 2007; Bayless, et al., 2013).

As institutions continue to seek alternative funding sources to provide services for students, the manner in which the service is provided changes from education based and student focused to a business model that is concerned with the economics of providing the service. By allowing a private entity to provide a service to students, students are viewed more as customers than learners. It is important that higher education administrators along with student affairs and housing professionals understand the change in residential foci from learning based intentional living environments to the business, amenity driven properties managed under privatized housing in order to adjust their efforts with campus climate and student success.

Student learning is enhanced by the opportunities available to students living on campus (Barnhart & LeMaster, 2013; Kuh, et al., 2005; Schroeder & Mable, 1994; Schuh, 1996). If administrators are going to outsource housing and encourage students to live within the privatized communities, then the responsibility of assisting students to acclimate to campus, engage with faculty and staff, participate in social peer groups, and other opportunities that help students succeed may need to be expanded beyond the housing staff. The findings will help inform campus administrators of the importance of determining the role and the impact of the P3 living environment for the students so that expectations can be clarified in negotiation. This study also provided information for privatized owners and managers that had not previously been available regarding student success and their student living environment.

Limitations

This study utilized data from one institution. The findings informed the institution of the dynamics of the living environment for its students, but may not be applicable for other institutions who are trying to meet specific needs for their students (Fraenkel & Whalen, 2009; Keppel & Wickens, 2004). Schudde (2011) added that focusing on one institution will prevent analysis of institutional differences on the impact of campus residency. However, public urban institutions with similar student demographics as studied in this research may find the analysis helpful when considering types of housing environments. While each privatized student community may be different in the actual programs and support provided, there are some generalizable characteristics such as: (a) most will not allow students to cancel their lease regardless of academic status with the institution and/or mental and physical health issues that affect

the ability of the student to continue; (b) socializing is the primary purpose for many events planned; and (c) students are held responsible for working through their own roommate concerns regardless of the activity being reported. Based upon the observation of the researcher when working with privatized housing, one assumption of this study was that students living in privatized student communities located off campus had similar experiences living on the property regardless of the owner or manager of the property. Therefore, the information gained will be fairly generalizable to other privatized student communities. Administrators of higher education institutions will be able to use the results to inform their process and negotiate with private companies to provide housing for their students.

Definition of Terms

The key terms in the study include:

1. ACT: The American College Testing Program which is a standardized test taken by college applicants; when the scores pair with high school GPA then ACT becomes a valid predictor for student academic success at the collegiate level (ACT Organization, 2015).

    http://www.act.org/research/policymakers/pdf/PredictiveValidity.pdf

2. Academic achievement or success: the ability to continue through academic work progressing toward a degree and to graduation (Astin, 1993; Berger, 1997; Blimling, 1999; Helfrich, 2011; LaNasa, et al., 2007). For the purpose of this current study, academic achievement is measured by cumulative GPA and persistence to a second year.

3. Auxiliary: a unit within an institution that provides a service to students and is able to fund its own program through charges for the services without subsidy from the financial portfolio of the institution (Komives, Woodard, & Associates, 2003; Pittman, 2012).

4. Cohort: a specific group of individuals established for tracking purposes (IPEDS, 2015).

5. Commuting student: a student who does not live in housing located off campus that is institutionally owned, managed, or related through a P3 partnership (Jacoby, 2000).

6. Continuing-generation student: a student from a family where one or both parents or grandparents attended a post-secondary institution (Schlinsog, 2010).

7. First-generation student: a student from a family in which no parent or grandparent has attended college (University of Louisville, 2016).

8. First-year student: a student who is enrolled in postsecondary education for the first time, excluding students who have not completed their secondary education diploma and are taking postsecondary courses (Kentucky Council on Postsecondary Education, 2014; The Integrated Postsecondary Education Data Systems, 2015).

9. Grade point average, cumulative (GPA): a composite of all grades that a student has received during his or her academic career at an academic institution (Kemmelmeier, Danielson, & Basten, 2005).

10. Living learning environment: a living area usually found in an on-campus living environment that encourages daily, meaningful interactions that connect the social and academic domains for the student including intentional interaction (Shushok, Arcelus, Finger, & Kidd, 2013).

11. Living environment experiences: opportunities for students to associate theory learned within classroom with life experiences including interaction with each other, faculty, and staff (Astin, 1993).

12. On-campus housing: group living facilities located on the university campus and managed under a university department providing an educational learning model of intentionally planned and on-going activities with individuals or student groups that is theoretically based and has as its intent the promotion of student success (Blimling, 1999; Blimling & Miltenberger, 1984; Kennedy, 2013).

13. Outsourcing: a broad business practice where a buyer will identify the desired service or product, and the selected vendor is able to have the control as to how the product or service is provided (Bekurs, 2007; Palm, 2001).

14. Persistence: the continued enrollment of students in subsequent primary academic terms at the same institution as they work toward completing a credential (Kentucky CPE, 2014).

15. Privatization: instances when governmental agencies hire private companies to provide ongoing services or products (Bekurs, 2007).

16. Private Public Partnership (P3): a cooperative venture between a public institution and the private sector to provide specialized facilities or services to

the institution through a long-term contractual agreement that can be located either on campus or off per agreement with the institution (Bayless, et al., 2013). In the current study, P3 properties located on the institution's campus were included in the "on-campus" type of living environment because of the partnership with the institution that included joint staff hiring and training to ensure a common experience between the halls.

17. Privatized student communities, off-campus: Privately owned and managed apartment communities designed and located near institutions specifically to recruit and house college students (Anderson & Strickler, 2007).

18. Student success: the student's ability to navigate the higher education process successfully obtaining the cumulative grades and credit hours for graduation (Astin, 1993).

Summary

Higher education institutions continue to face tough financial constraints and must adapt business and administrative practices to create as efficient and effective campus programs as possible. However, the business and financial decisions being made affect the overall campus environment and ultimately the overall goals of supporting academic achievement to graduation. Student graduation rates add to the value of the institution both in reputation and economical advantage. Students who persist add to the financial stability of the institution in several ways: it costs less to retain current students than to recruit new; students who persist support academic programs by declaring academic majors which supports the goals of the academic units; and many state and federal funding formulas for higher education rely on student graduation rates as a measure of

institutional effectiveness (Fike & Fike, 2008). The campus environment that provides

academic and social interaction, feelings of security and safety, and an overall sense of

belonging for students will also gain a commitment from students that promotes

institutional pride and reputation. Research on student persistence is important both to

help institutions understand the variables that contribute to student success in order to

improve their services and environments, and to acknowledge that student success has an

impact on the economic stability of the campus (Pizzo, 2009).

This study was designed to fill a gap in research regarding academic achievement

and persistence of first-year students by adding the new paradigm of campus housing

environment, privatized student communities located off campus. It contributed to the

field of student success by adding evidence of the three types of living environment: on

campus, privatized student communities, and commuting. This study provided a basis for

future research regarding the relationship between privatized student communities and

first-year student academic achievement and persistence, as well as findings on specific

groups of first-year students (gender and first-generation) and ACT score, thus informing

institutions of the potential benefits and consequences of working with this new

environment for campus housing. This study was a start in identifying evidence based

factors that may inform institutional administrators, housing professionals, and the

privatized owners on how to provide supportive living environments for the varying

needs of the diverse student population found on college campuses while being conscious

of the resource that campus housing can be for student academic achievement.

The following chapters provide literature associated with student living

environment, academic achievement, and persistence along with consideration of the

relationship that gender, generation-status, and ACT scores for each group has with student success. The research questions, methodology for data collection, the sample, and the research plan are more fully discussed in chapter three. Chapter four reports the results of the research along with discussion of the significance of the results on campus housing and higher education institutions. Chapter five includes a review of the results offering recommendations for the institution, for housing professionals, and suggested future research on the effect of student living environment.

CHAPTER 2

REVIEW OF LITERATURE

The campus environment can refer to many different aspects of campus life ranging from the physical environment where students form their first impressions to the feeling of belonging to the campus environment because of the security, comfort, and understanding of how the campus functions. A positive relationship between the built environment of the campus, the perceived environment of support and commitment, and student retention add to the concept that it is the entire campus culture that offers the support important to student success (Reynolds, 2007; Strange & Banning, 2015). While the overall campus environment can set an important precedent of support and opportunity to engage, it is important that the living environment compliments the academic and social aspects of campus life to create a positive campus culture.

Environmental studies of campus culture focus on the contextual conditions which foster student development. Strange (1994) suggests that campus cultures are social constructions that reflect on traditions, stories, ceremonies, history, myths, heroines and heroes, policies and practices, symbols, and mission and philosophy. Student satisfaction and involvement in campus life rely on understanding, becoming interested in, feeling connected to, and committing to campus culture. Administrators charge student affairs and campus housing professionals to create environments that

35

support student interaction with both the social aspects of the campus as well as academic resources and support.

This chapter provides a summary of relevant literature that informs and supports the relationship between campus environment, living environment, and student success as measured by academic achievement and persistence. Student success is discussed through the common findings that social and academic interaction is important for a student's progress through higher education. The literature surrounding campus living and student success will be discussed supporting the hypotheses of this study that students living on campus persist at a higher rate and have higher grades than those who live off. The review of literature discusses the several domains including history of student housing, campus environment, theoretical models, pre-college attributes, first-year students, student interaction, living environments, and student persistence and academic success.

History of Student Housing

Student housing has existed as part of the American campus environment since the early 1600s when Congregationalists founded Harvard University and modeled it after the European education system. Many factors contributed to the development of college student housing including: (a) students in the 1700s were much younger than college students of today; (b) the college was expected to provide a place of boarding for the students; and (c) as schools were founded in the Midwest, students had to travel great distances to attend and were not able to go back and forth to their permanent home each day (Blattner, Cawthon, & Baumann, 2013; Frederiksen, 1993; Winston, Anchors, & Associates, 1993). The early boarding school facilities were known as dormitories and

seen as a place where students lived and ate while attending classes. Managed by deans

of men and women, the primary focus of administrators was to serve as the parental

advisor and to help students to live within the code of conduct established by the

institution (Blimling & Miltenberger, 1984; CAS Standards, 2014).

The housing model of the early 1800s was one of residential colleges that focused

on the education of the whole student where faculty, tutors, and students all lived and

learned together. These learning moments were found both in the formal classroom

setting and in more informal environments within and around the living and dining

facilities. The staff followed a close *in loco parentis* approach to interacting with

students and serving as the center of socialization on campus. This model was prominent

until the Civil War, after which higher education in America was greatly influenced by

the German educational system placing emphasis on research and teaching. Scholars of

the German universities popularized the belief that housing students was not the

responsibility of the institution (Frederiksen, 1993).

Campus housing during the late nineteenth century was also affected by the

financial issues felt by the institutions. Several major American college presidents felt

that providing housing was a waste of resources and that focus should be placed in

libraries and academic buildings resulting in a decline of student housing on campus

(Blattner, Cawthon, & Baumann, 2013; Frederiksen, 1993). Campus housing became

less of a priority. By the end of the century, this belief had reduced the availability of

campus housing and forced students to find lodging and food in the local communities.

This push strained the local resources and strained the relationship between the

institutions and the townspeople (Frederiksen, 1993).

There were movements that helped institutions refocus on providing safe campus housing for students in the early 1900s. Fraternities grew in popularity on campus and groups began to build chapter houses to allow members of the Greek community to live together. These new group houses created a disparity in the quality of housing provided for Greek and non-Greek students. The increase in fraternity life also contributed to the desire for more competitive activities on campus such as intercollegiate sports and events (Frederiksen, 1993).

The opening of normal schools and colleges established to provide women the opportunity to obtain degrees brought attention to campus housing as the institutions planned to provide safe housing for their students. Institutions intentionally aligned campus housing with the curriculum and academic goals to show families that their daughters would be taken care of while learning (Frederiksen, 1993).

Another contributor to the growth of residential campus housing during this time was the passing of The Morrill Land Grant College Act of 1862. This Act developed an incentive for states to create new educational institutions that would be dedicated to liberal arts, military sciences, agriculture, and engineering. States were provided federal lands on which to build these land-grant institutions. The land donated for use was primarily located within rural areas where there was not an abundance of affordable student housing, thus the campus plans had to include student housing. The Morrill Act established 69 colleges and contributed to the growing interest in providing higher education that was accessible for more students (Blattner, Cawthon, & Baumann, 2013; Blimling, 2003).

The renewed interest in higher education created by the Morrill Act and the formation of new college campuses helped more institutional presidents begin to note that on-campus housing was central to the collegiate experience. Administrations not only provided the facilities necessary for housing students, but also increased the extra-curricular activities that would help students be active in campus-sponsored events such as athletics, debate societies, and Greek organizations (Blattner, Cawthon, & Baumann, 2013).

College enrollments declined during World War II and caused a decrease in construction and opportunities to expand the size of the campus. However, the GI Bill (of Rights) also called the Servicemen's Readjustment Act, was passed in 1944 after the war creating opportunity for veterans to enroll in higher education. The increase of veterans brought a significant population of married students to campuses for the first time and changed the type of housing demand for students (Frederiksen, 1993). This student influx and the predicted continued increase for the future encouraged Congress to pass the Title IV of the Housing Act in 1950 which offered financial assistance to educational institutions in providing loans for housing repairs and construction. The low interest rates and long periods of amortization allowed campuses to respond with significant construction for student housing into the 1970s (Chickering, 1974; Frederiksen, 1993).

With housing capacities being addressed, the concern of administrators on campuses were redirected to connect the living experience to student academic learning. Campuses were expected to provide housing located on campus that promoted student development and community building began to emerge in the late twentieth century

(Frederiksen, 1993). Over time, the on-campus residence facilities have been viewed as important to student involvement and a positive relationship has been demonstrated between residing in on-campus housing and grades, persistence, and leadership development (Astin, 1993; Blimling, 1993; Chickering, 1974; Schroeder & Mable, 1994; Schudde, 2011). It was during this time that the emergence of the housing career field developed into four basic specialty areas: residence life, administration, maintenance, and food service.

One major change that has occurred since the 1990s is the increased expectation of students and parents regarding the quality of the housing facilities and the amenities provided within. According to Shudde (2011), many students enrolling in college in the 21st century are doing so with a particular interest in privacy in their rooms and baths as well as the same conveniences found in their homes such as wireless access to the internet, cable access, and sufficient electrical support for their personal appliances. The residence halls on many campuses were built in the 1950s and 1960s and were outdated in provision of the amenities expected by families. The upgraded amenity expectations from the students and the aging effects of the older residence halls created a resurgence of renovating and constructing new facilities that respond to current-day students (Schroeder & Mable, 1994).

Once again, higher education was forced to prioritize resources for facilities and programs and in doing so sought alternative methods of providing campus housing. Privatization of residence halls or collegiate housing designed, built, and managed by private companies became part of the landscape entering the 21st century (CAS, 2014). School administrators searching for alternative financing and construction of student

housing opted to privatize aspects of their residence halls (development, construction, and management), and utilized housing management companies to address residence hall shortages, aging facilities, and changing student expectations (Fickes, 2007).

The private sector responsible for the early construction of purpose-built, off-campus student housing transitioned from building hotels to student apartments starting in the mid-1960s to take advantage of the growing demand for organized student housing. Allen & O'Hara was one of the first companies that saw a need for housing students and seized the moment to change their construction portfolio from hotels to student housing. Privatized student housing complexes were not common until the late1980s when several agencies identified student apartments with private bedrooms and baths as a profitable construction initiative. The earliest reported use of a P3 between a private company and university for campus housing was in 1986 at the University of California, Davis campus (Cole, 2012). According to Bayless, et al. (2013), more than 300 private student housing properties were built near campuses by 2010.

Campus Environment

The concepts regarding campus environment emphasize the importance for institutions to create conditions that maximize student engagement. According to Strange and Banning (2015) four types of campus environment emphasize a multidisciplinary approach on the impacts of the physical and social development of human beings: physical, aggregate, organizational, and constructed. The physical environment refers to the structures, campus location and layout of buildings, paths, landscaping, and other designs that play an important role on the first impression of potential students or families. The aggregate is described as the environment that is transmitted through the

people who use it, such as areas of campus where students gather socially or for academic support. The organizational environment refers to the method by which the environment is managed and maintained through policy, procedure, and practice. The final type of environment described by Strange and Banning (2015) is the constructed model which focuses on the subjective views and experiences of the participant observers. This model recognizes that regardless of the physical, aggregate, organizational, and constructed environment in place, it is perceived differently by each individual who is involved and takes on a unique feel each time.

It is also important to develop environments that will foster educational learning by providing psychological and physical feelings of security and safety, participation, and involvement. These environments may provide formal and informal space for students to gather as well as personal space for students to have room to express themselves (Kuh, et al., 2005; Strange & Banning, 2015). Campuses that capitalize on providing some level of experience in common interest through campus student organizations, living environments, and club sports will provide environments that support student involvement.

Martin, Swartz-Kulstad, and Madson (1999) added to the work regarding the campus environment and social relationship with student persistence. They studied the psychosocial factors that predict college adjustment of students by investigating the success of students who were conditionally admitted to two four-year doctorate granting universities. They looked at the relationship between selected demographic, personal, social, and well-being variables including sex, age, ethno-cultural identity, and positive attitudes toward the university. They concluded that adjustment to college and decisions

to persist were based on variables other than academic preparation. Specifically, they found the students at both institutions evidenced higher levels of adjustment if they had positive attitudes about the university. Students are affected by the atmosphere within the university including the environment in which the universities were located, living arrangements, and events of interest on the campus. The researchers decided to conduct separate studies using similar methodology on two university campuses that were different in size, focus, and geographic location. The decision to conduct the second study was made in an effort to replicate the findings from the first institution. When they compared the results of the two studies, they found that two of the primary contributors to overall college adjustment, academic self-confidence and positive attitude toward the university, significantly predicted successful adjustment to college. Their findings were similar to previous studies conducted regarding the positive relationship of student academic success and college adjustment. Even though the studies considered student satisfaction and attitude with living environment, they did not try to focus on different types of living environments off-campus.

Theoretical Models

Literature on college persistence suggests that students who establish and maintain strong academic and social connections during the first months of college by making friends with classmates and roommates, participating in campus events, and becoming familiar with the culture of the campus feel part of the campus environment and thus are less likely to drop out (Tinto, 1993). Astin and Tinto are two theorists who pursued student engagement and persistence, each developing theoretical models that inform higher education institutions on interaction and student success.

Astin. Astin (1993) compiled some of the most significant research on college impact, including both longitudinal designs and multi-institutional data studies. He divided student outcomes into a taxonomy of three dimensions: the type of outcome (cognitive and affective), the type of data (psychological and behavioral), and time (during and after college). He found a significant positive correlation between student-faculty interaction outside the classroom and increased student satisfaction with faculty quality of instruction and individual support services. Astin (1993) replicated his earlier research regarding student involvement. His results found that a peer-group is an important source of influence on growth and development during the undergraduate years. Students learn more and accomplish their goals for attending college at a higher level if they become involved in both social and academic aspects of their collegiate experience. Astin (1984) defines the *involved student* as "one who devotes considerable energy and time to academics, spends much time on campus, participates actively in organizations and activities, and interacts with faculty" (p. 299). He also suggests that the involved student learns more and succeeds at a higher level than students who are not as involved.

While Astin (1984) did not focus his research on the different types of living environment, his conclusions regarding the importance of peer and faculty interaction suggest that student group-living environments and intentional activities that create opportunities of interaction are important to student success. Astin demonstrates that students come to college with pre-existing goals and expectations called inputs, and that inputs interact with the opportunities available for involvement and participation during the college years to form the outputs or the growth of the student as they leave college.

His 1984 work suggested five basic postulates in his theory of student involvement (Astin, 1984, p. 300-302):

(a) involvement means the investment of physical and psychological energy in different activities that range in the degree of their specificity;

(b) involvement occurs along a continuum, with different students investing different amounts of energy in various objects at various times;

(c) involvement includes quantitative and qualitative components;

(d) the amount of student learning and personal development is directly proportional to the quality and quantity of involvement; and

(e) the effectiveness of any educational practice is directly related to the capacity of that policy or practice to increase involvement.

Student involvement and the connection to the IEO model developed by Astin has been supported by research regarding student interaction and involvement and student success (Berger, 1997; Burch, Heller, Burch, Freed, & Steed, 2015; Eimers,2001; Kuh, et al., 2005). Campus programs in student affairs and other student support units acknowledge the importance of pre-college attributes on student commitment to the campus experience (Martin, Swartz-Kulstad, & Madson, 1999).

Tinto. Tinto (1975) developed a model that explains the systemized interaction that occurs with students and the effect pre-college attributes have in student decisions to commit or to withdraw from college. A student enters an institution with pre-entry characteristics and expectations that influence learning and involvement such as family background, individual attributes, and their pre-college academic preparation. Tinto

created the model to illustrate how pre-entry characteristics influence the commitments made by the student to both attend college and commit to the institution.

Tinto (1993) updated his theory of student departure discussing the core concepts found in student success in addition to pre-entry attributes as goals and commitments, institutional experiences, integration, and outcomes. Reason (2009) referred to the additional concepts that Tinto (1993) discussed by adding the concept that the perspective of the individual student of their sense of belonging and place on campus influences the peer environment they experience. The theory added that social interaction shapes the sense of place that a student develops.

Tinto (1993, p. 95) asserted that voluntary student departure can occur due to a lack of integration and commitment to the college environment which occurs as students successfully navigate the stages of separation, transition, and incorporation. Separation refers to how students disassociate themselves to some degree from the norms of past communities including families, high school friends, and other local ties. Transition occurs as students separate from past norms but have not quite adapted to the new norms of their college experience. Students achieve incorporation when they adopt the new experiences of college as their norm and begin to work in that environment with confidence. According to Tinto (1993), this progression has to occur for the students to commit to the process of college and student success. The level of academic and social interaction depends on the college experience in the academic system including both the administrative functions such as advising, determining majors, admission to particular programs, and the learning functions of classroom expectations and intellectual

development as well as the social interactions that occur between faculty, peer-groups, and students.

Tinto (1993) updated his interactional model on student departure to include more discussion on the interaction between student behavior and the social and academic environments. Tinto emphasized that the model is designed to explain "how interactions among different individuals within the academic and social systems of the institution and the communities which comprise them lead individuals of different characteristics to withdraw from the institution prior to degree completions" (p. 113). He proposed that the social interaction of college students is a function of both formal social experiences within the system (e.g., group work within classes and campus jobs or activities), and informal interactions with peers such as living with a roommate and participating with student organizations or Greek Life. He emphasized the need to better understand the relationship between student involvement in learning and the relationship that involvement has with student persistence (Tinto, 1993).

Validating Astin and Tinto. Terenzini and Pascarella (1980) conducted a review of studies regarding student attrition. Their summation of the research validated Tinto. Moores and Klas (1980) also validated the model designed by Tinto in their work regarding personal, social, and institutional variables that influence the decision to drop out or persist. The later work of Tinto (1993) supported his 1980 model on student attrition that pre-college attributes influence decisions to become involved and interact with the campus environment and that the decision of commitment influences attrition. Kennedy (2013) maintained that campus housing professionals should consider the

importance of pre-college influences when designing programs that help students become more involved in campus activities.

Whalen, Saunders, and Shelley (2009-2010) conducted a study investigating student retention to a second year and persistence to graduation within 6 years. Their goal for the study was to provide new evidence of institutional retention when combining various independent variables including student background characteristics, academic measures, environmental influences, and financial measures. Their analysis reported that some students, while living on campus, did not have a significant relationship as a lone variable for retention to the second year. There was a significant relationship with the length of living on campus and graduation within 6 years. The study also showed a significant relationship between membership in a learning community and both retention to a second year and graduation within six years. The authors surmised that, "learning communities represent a significant experience that offers students a set of common classes, a supporting living environment with a group of peers, or a combination of both experiences" (Whalen, Saunders, & Shelley, 2009-2010, p. 420). Their conclusions included recommendations that institutions consider the benefit of programmatic efforts such as learning communities in the residence halls to support student learning and commitment. Their integration of the pre-college characteristics, environmental factors and programmatic support outside the classroom mirror the concepts found within both the IEO model (Astin, 1984) and the interaction model of student departure (Tinto, 1993).

Identifying Variables from the Literature

The literature regarding student success and persistence informed this current study to the variables that should be considered when analyzing student success and

living environment. The following sections of this chapter discuss the particular variables selected for this study.

Pre-College Attributes and Covariate.

Students entering a postsecondary institution bring with them certain characteristics and knowledge levels that affect the way they participate in events and activities, and acclimate to the campus environment. These attributes include any number of factors that have influenced life experiences and preparation for the college environment including socio-economic status, exposure to or knowledge of postsecondary environments, secondary education preparation, gender, first-generation status, and ethnicity. Tinto (1993) described how student characteristics impact commitment levels to their college experience:

"Individuals enter institutions of higher education with a range of differing family and community backgrounds (e.g., as measured by social status, parental education, and size of community), a variety of personal attributes (e.g., sex, race, and physical handicaps), skill (e.g., intellectual and social), financial resources, dispositions (e.g., motivations such as intellectual, social, and political preferences), and varying types of precollege educational experiences and achievements (e.g., high school grade-point average). Each attribute is posited as having a direct impact upon departure from college" (p. 115).

Bean and Metzner (1985) developed a conceptual model of nontraditional undergraduate student attrition based on an extensive review of literature regarding persistence and the non-traditional student. They found studies that evidenced a positive relationship between the pre-college attributes of high school performance, ethnicity, and

gender and the level of student interaction on campus. They also reported a significant relationship between persistence in college and high school grade average and pre-college scores on standardized tests of academic ability. Their summary of the literature regarding non-traditional students, such as commuters, indicates a need for more research to be conducted regarding campus environment, pre-college attributes, and commuters (Bean & Metzner, 1985). The Bean and Metzner study utilized three pre-college attributes to determine relationship and predictor value with student academic achievement and persistence: gender, generation status, and ACT score. ACT score was the covariate for the study.

Gender. Female and male students have different pressures for success, and establish personal contacts and interactions differently (Enochs & Roland, 2006). While there are more opportunities than ever for females to select their majors and participate in such academic study areas as STEM, there continues to be familial and societal pressures that encourage females to seek different degrees such as education, and non-science fields (Baxter-Magolda, 2006). Enochs and Roland (2006) studied the social adjustment of college freshmen looking at the importance of gender, living environment, and social adjustment to college life. *The College Adjustment Scales Instrument* which measures anxiety, depression, suicidal ideation, substance abuse, self-esteem, family issues, and academic problems was administered to 511 first year students living in on-campus housing; 252 lived in traditional residence halls and 259 lived in the Freshmen Year Experience Halls. The analysis of the data determined if there were significant differences in adjustment and social adjustment based on gender.

Their findings indicated that male and female students have different levels of social adjustment to college and that female students adjusted at a lower rate than male students unless they participated in environments that intentionally helped them gain self-confidence and identify with the collegiate culture. Female students are more likely to value the social aspect of college seeking entrance to organizations, study groups, and other peer-groups where they feel accepted and validated. Males seek the organizational behavior for the comradeship as well but not as much for validation as for the social aspects of the group. Based on the differences they found between the way females and males acclimate to college life, Enochs and Roland (2006) asserted that the living environment may be an even greater factor in terms of social adjustment for females over males for various reasons.

Examples they included as variables that add to first-year depression and coping skills are the way females and males learn to live with a roommate, find new friends and groups to associate with, and build their own confidence in being away from family. Overall, students who live in learning environments designed to help students transition and identify with campus life such as first-year residence halls adjust at a higher level than those first-year students who live in upper-class halls. While the study provided some specific information to the institution regarding the first year class, it had limitations in both expanding the results to other campuses and for the campus itself. The research did not include the first year students living off campus in either the privatized student communities or in single apartment or residences; therefore, the data set was not complete for the first-year cohort. Also, the non-cognitive factors considered in the study were limited to gender and ethnicity; analysis was limited to gender and did not cross

reference with the ethnicity factor. Future research should include first-year students living in off-campus privatized student communities and students commuting from single residences.

Clark (2015) conducted a dissertation study regarding the differences of post-secondary persistence and gender. Clark worked with 33 senior students of traditional ages (20-23) at one institution gathering information through interviews, focus groups and email clarification of questions answered. Demographic data of cumulative GPA, academic study, and co-curricular activities was obtained from the institution's data system. Clark's qualitative study found some significant and non-significant differences in the method and prioritization that males and females offer their academic work. She identified three primary themes of influence from the students' discussions: family member support, self-reported goal for college degree, and inner drive.

When Clark explored the cumulative GPA results for the first year of study, she found that males reported a lower GPA and in discussing their grades tended to regret that they did not focus on grades and classes in their first year. Her findings for grades was not statistically significant, but the information gained from the two groups suggested that females attended class, put aside time to study, and worked with faculty at a higher rate than the male students. Males cited the availability of activities and sports as one reason they chose to not be as focused on academics. Females discussed the influence of their college friends as support for their studies and academic work. Males discussed the expectation that college would give a balance of fun and study and that there were so many things to do in the residence halls and on campus.

One of the questions asked by Clark in her study with each student was what "difficult event" served as a hindrance to academic success. More of the females seemed adversely affected by severe roommate issues than the males. The females described events with roommates that left them emotionally defeated and unable to concentrate on work. Males did not discuss the roommate conflicts with the same level of emotion noting that they had difficulty at times, but ignored it and moved on in their own way. Clark (2015) recommended that more research be conducted regarding persistence in higher education which she described as different from studying why students drop out of higher education. She recommended additional topics of study to include the effect of roommate stress and living environments especially for female students.

Generation Status. Higher education institutions define first-generation status differently. Some consider first-generation as students whose family members have no college experience; others focus on whether family members actually graduated from college or not. The definition used for this study is from the institution that the case study data was obtained and states that a first-generation student is one whose parents or grandparents did not attend college.

The research regarding success and persistence suggests that some pre-college characteristics such as first-generation status, lower socio economic status, and lower entrance scores place students at higher risk. These students may need more assistance than others (Fike & Fike, 2008; Martin, Swartz-Kulstad, & Madson, 1999; Soria & Stebleton, 2012). Research has shown that first-generation students struggle with the concept of interaction with faculty and participation in activities on campus because they are less likely to be engaged in the academic and social experiences that foster success

such as studying in groups, interacting with faculty and other students, and participating in extra-curricular activities on campus (Pike & Kuh, 2005). This hesitancy to participate is due, in part, to the lack of exposure to higher education either physically or through stories and information shared from family members who were able to attend and succeed (Kuh et al., 2006).

Jenkins, et.al, (2013) compared 1,647 students who were enrolled in undergraduate psychology courses at a large state-supported university and volunteered to participate in exchange for partial course credit. The students were asked to complete a set of different scales and checklists that measure sources of social support for depression, post-traumatic stress disorder (PTSD) symptoms, and life satisfaction which included satisfaction with college as part of an on-line class session. The Jenkins, et al., 2013 study found that first-generation students have less social support from family and friends, struggle with higher levels of stress that almost resemble PTSD symptoms, and have less life satisfaction overall than continuing-generation students. The results also suggested a strong interaction of generation and gender indicating that for psychological well-being and satisfaction of college experience, women are significantly less satisfied and less likely to succeed than their continuing-generation counterparts in on-line classes. A noted strength of this study was the diverse (ethnicity, first- and continuing-generation, and socioeconomic status) sample of participants from a state-supported institution where the experiences of academic stress felt by the first-generation students may not be as unique as may be felt on a more exclusive private liberal arts college. The diversity and size of the sample provided results that can be generalized to other institutions. The researchers recommended the results be used by college counselors as

54

they work with first-generation students and that counselors and health professionals should routinely screen their first-generation clients for PTSD symptoms, depression symptoms, and life satisfaction. Suggestions for future studies regarding variables that were not addressed in this study (socioeconomic factors, precollege academic preparation, and living in unsafe neighborhoods) were made. The research team also recommended future evaluation of stressors experienced differently by both genders and generations outside of school. The study did not analyze the relationship of college living environment and student academic success or persistence.

ACT score. The ACT score refers to an instrument taken by potential college students and utilized by higher education as one determinant of eligibility for entrance to the institution. Many institutions require the ACT score as one of the acceptable measures for prediction of success and are very transparent in admissions guidelines to the minimum score required for entry (The ACT, 2015). While some feel the ACT scores do not accurately predict student success and limits admission to higher education to the students who have more privilege, when combined with any second pre-college attribute, the ACT score has been a significant predictor of student success (Kern, Fagley, & Miller, 1998; Sparkman, Maulding, & Roberts, 2012). Kern, et al., (1998) measured the variables perceived responsibility for academic success and failure, ACT scores, anxiety, motivation, and time management. The analysis of the data found that first-year college GPA directly affects attrition and that ACT scores have a significant positive relationship related to GPA as one index of college success. However, they also found that other variables such as time management and test taking strategies, attitude, and information processing skills have a positive relationship with GPA as well. The

researchers noted that one of the limitations to the study was that sex differences were not assessed. A second limitation that made generalizing the results difficult was that one regional institution had been studied thus limiting the diversity of experience and background for the participants.

Studies on student persistence and graduation analyze the ACT score as one variable in predicting student success since it is a common factor in college entrance. Sparkman, Maulding, and Roberts (2012) explored potential effects of emotional intelligence on the ability to persist and graduate within four years. Their study included analysis of accepted predictors of student success such as high school GPA and ACT scores. While the results found varying significance of different emotional variables on student persistence and graduation, high school GPA and ACT score combined are significant predictors of cumulative GPA at graduation. The analysis also found ACT score and enrollment status after the first semester have a significant positive relationship. The survey was offered during a session of Freshman Orientation held the week before the fall semester began. It was optional for the students who attended orientation; 1,549 of the orientation participants agreed to take the survey and participate in the study. One of the limitations to this study was that the survey was administered during one session of the Welcome Week Orientation prior to the initial enrollment. Also, not all incoming students participated in the orientation and not all who participated in the orientation attended the session where the survey was administered. The researchers did not address the number of first-year students who did not take the survey, nor did they address any demographic comparison of those who participated and those who did not. There is no indication whether the participants were representative in

ethnicity, ACT scores, and other pre-college characteristics with those who did not

participate. No discussion regarding campus living environment was included in the

study or the subsequent report of the findings.

Several types of validity can be associated with ACT scores as a predictor of

student success such as content, concurrent, and predictive validity (Borden & Young,

2008; Cohn, Cohn, Balch, & Bradley, 2004; Crocker, Llabre, & Miller, 1988). Validity

is associated with the interpretation assigned to the test or measure rather than the

measure itself, and the social impacts of a test or measure should be considered when

determining validity (Borden & Young, 2008). Content validity or relevance of the

measure is the most commonly used validity measure for standardized tests as predictive

variables. Content validity of standardized achievement tests is considered within the

framework of generalizability theory (Borden & Young, 2008). Criterion validity,

concurrent validity, and predictive validity all are used with standardized testing and

grades when analyzing student success. Concurrent validity is helpful when the measures

are parallel and have direct connection to one another; concurrent validity is effective

with such events as classroom assignments and grades completed just before the

standardized exams are taken to measure knowledge and preparedness. Predictive

validity is used when the criteria is not measured until a future time or event.

The *g* factor refers to a latent construct that represents variance common to a large

and diverse set of cognitive tests (Coyle & Pillow, 2008). Coyle and Pillow (2008)

examined the *g* loading and predictive validity of ACT scores for student preparedness

and success in the college environment. The studied sample included 251 student

participants from the introductory psychological study pool at the University of Texas in

San Antonio. All participants had taken the SAT exam as their college-entrance measure; 88 of the group had also taken the ACT exam during the same period. Cognitive test scores and GPAs from the first semester of study at the university were available and used as a variable for analyzing the predictive validity of the ACT and SAT scores. Coyle and Pillow (2008) were able to replicate past studies regarding the importance of the G study and generalizability theory which represents variance common to many cognitive tests. Their results found a significant positive relationship between ACT, SAT, and GPA after removing the g factor and thus supported previous studies that found predictive validity with using ACT for student academic achievement and persistence.

First-year students

Each higher education institution defines the first-year student as part of the admissions and reporting standards. Many institutions include the qualification that a first-year student is one that has never attended a college or any other postsecondary institutions after completing their high school studies while some add other qualifiers to the definition such as a cap on the age, inclusion of military service, and status of independence from family (Blinn College, 2014; University of Louisville, 2014; University of South Carolina, 2014; The University of Texas at Austin, 2014).

Morrow and Ackermann (2012) addressed the importance of sense of belonging and motivation in predicting first-year student intent to persist. Nine hundred and sixty first-year students were selected from the first-year cohort class of 2,039 to participate in the study during the summer after their first year at one institution. A 26-item Sense of Belonging Scale (SBS) was used to measure sense of belonging in four primary categories: perceived peer support, perceived classroom comfort, perceived isolation, and

perceived faculty support. *The Academic Attitudes Scale* (AAS) which had 29 items measuring student motivation for attending a university was administered. Persistence was measured with response to a self-report statement, "I will obtain a bachelor degree from this university." The study revealed a significant positive relationship between the set of questions regarding attitude, persistence, and personal development as a reason for attending the university as a significant predictor with persistence. The study aligned with other research that non-cognitive factors such as first-generation, gender, and socioeconomic status influenced factors that affect student persistence. The researchers recommended that future study be conducted to determine which factors are most important as predictors for student persistence. The limitation of the study was that it was conducted at one institution and therefore could not be generalized broadly across institutions.

Fike and Fike (2008) assessed predictors of fall-to-spring and fall-to-fall retention for 9,200 first-time students in a public urban community college of approximately 10,000 students. Bivariate correlation coefficients were calculated to determine the relationships of student retention and the predictor variables; multivariate logistic regression models helped predict the odds of student retention controlling for demographic non-cognitive factors. The study revealed significant predictors of retention such as passing developmental courses for reading, mathematics, and writing; receiving financial aid; and having parents who had completed some level of college coursework. The study found that gender and ethnicity were not significant predictors of retention when analyzed with the non-cognitive variables (parent education and family support). The results and discussion of the study could be helpful for community colleges that are

similar in size and function. However, the study had limitations that weakened the overall generalization of the study including a large percentage of missing data for the level of education of parents, and the collection of most of the non-cognitive data through self-reported surveys. A causal relationship between predictor variables and student retention could not be fully determined since the study did not include an experimental design.

Kiser and Price (2008) studied persistence of college students from their freshman to sophomore year specifically looking at three groups of students at one institution based upon their ethnicity. Their research was designed as exploratory in nature and examined the predictive accuracy of selected variables such as high school letter grade average, college grade point average, residence location, parental education levels, and gender on persistence of college freshmen to the sophomore year. Institutional variables were not factored into the study. The original model based on the results from 1,014 students was broken into three ethnic groups: White students, Hispanic students, and African American students. The data gathered for the study were collected through the *Cooperative Institutional Research Program (CIRP) freshman survey* of 2004; all data groups were studied with the same methodology. The findings revealed that in two of the three groups, one predictor variable, cumulative hours completed, was found to be significant to persistence ($p<.01$). Overall, the cumulative hours completed was the most statistically significant and consistent predictor variable correlated with persistence to the second year. Limitations with the study included that the information was conducted at one public institution yet no institutional variables were included in the study, and the researcher only looked at students attending the institution on a full-time basis and not

those attending part-time. Since most students who attend on a part-time status live off campus, the study could not be generalized to students living in different types of living environment.

Student Interaction

One of the measures of student commitment and success is the level of academic and social interaction that the student experiences. On-campus housing programs are be purposive learning environments that provide opportunities for students to interact socially and academically with peers, faculty, and staff, as well as help students acclimate to the campus environment, understand their academic resources, and feel connected to the overall collegial experience (Schroeder & Mable, 1994). Student interaction is an important concept in the Astin and Tinto models discussed earlier and throughout the literature found regarding student success. This study did not directly analyze levels of student opportunities for interaction in the different types of living environment. However, the researcher felt it important to share evidence of the importance of student interaction for persistence as part of the literature review due to the assumption made that the level of intentional opportunity for student connection differs between the on-campus housing and privatized student communities. A future topic of research could be to evaluate the opportunities for interaction found in the different types of living environment.

Kuh, et al., (2006) were commissioned to conduct an extensive literature review of student engagement. They found a pattern of research results that determined student engagement as one indicator of student success that has received considerable attention in recent years. Their review revealed that a substantial body of that research has found that

a key factor to the success of students in college is the extent to which they take part in educationally effective activities. The research team designed a conceptual model reflecting what matters to student success and showed an intersection of the pre-college and college experiences that result in successful post-college outcomes. The model described student behaviors and institutional conditions as two dimensions in student experiences. Student behaviors include the commitment of time and energy put into their studies, interaction with faculty and peers, and participation in activities that help them apply the knowledge gained from their studies. The institutional conditions shown in the model refer to the programs, services, support networks, and other structural features that the institution provides as learning resources. The model suggested living environment as one of the concepts of student support and programming areas, but specific types of living options that support student interaction were not suggested.

Opportunities for student engagement and interaction help students become acclimated to campus and gain a feeling of belonging. As students become more familiar with campus environments, they have higher levels of satisfaction with their overall experiences. Eimers (2001) studied student satisfaction and social interaction between minority and nonminority students. The purpose of the study was to broaden the focus of undergraduate experiences to include the relationship with faculty, academic quality, and campus climate. Data were collected from undergraduates studying in a large, four-year institution that has a multiple campus system enrolling approximately 41,000 students; approximately 1,000 students from each of the campuses were surveyed. One thousand, two hundred, ninety-one students responded to the survey representing 32.5% of the student sample. Data were analyzed on four independent variables: faculty-student

relations, academic atmosphere, campus climate, and overall assessment. A multivariate

analysis of variance was utilized examining responses by two ethnic group identifications

(minority and non-minority students) and four levels of satisfaction. The research results

found no significant differences between minority and nonminority students in terms of

faculty-student relations and academic atmosphere. There were statistical significant

differences between ethnic groups with campus climate and overall assessment. Overall,

Eimers (2001) found that among minority and non-minority students, increases in

academic progress occurred as the student satisfaction with various areas of campus

improved. Eimers suggested future research should focus on whether campus factors

motivate minority and non-minority students toward academic progress. Self-reported

data from the students regarding satisfaction and gains toward academic outcomes could

be limiting since one institutional system was utilized. However, the self-reporting

concerns were less since there were four campus locations in the school system and

students from all campuses participated.

Knowing what motivates students to interact with the campus environment and

become engaged in the various experiences available informs campus faculty and staff as

they plan opportunities to support student development. Strange (1994) wrote about the

evolution of student development and student affairs on campus. The first proposition he

introduced was that students differ in age-related developmental tasks that offer

important agendas for *teachable moments* in their lives. He emphasized the psychosocial

life-span of the student as studied by Chickering (1974). Strange interpreted one

common implication made by these theorists through the words of Havighurst who used

the term teachable moment to describe the motivating experience that occurs when

63

learning tasks relate to development choices embedded in the current life phase. Strange

summarized that students become more engaged in the learning process when they can

relate the knowledge to life events.

Institutions can be more intentional in developing environments that promote

student engagement and student success. Pike and Kuh (2005) explored whether it is

possible to create a typology of institutions based on opportunity for student interaction

experiences. Their purpose was to identify for institutions levels and types of

engagement experiences to help institutions to be more intentional in their type of

engaging environment to assist with student success goals. They identified common

findings from *The College Student Expectations Questionnaire,* the *National Survey of

Student Engagement* (NSSE), and the *Community College Survey of Student Engagement*

(CCSSE) to report seven conclusions regarding student engagement and interaction as an

outcome for student success. One conclusion reported that student engagement in

educationally purposeful activities is positively related to both grades and persistence.

This finding supports the theories of Tinto and Astin on student commitment and

engagement. Their analysis focused on senior respondents in the 2001 survey in order to

get a broader range of experiences during college. A Q factor analysis was used to

classify the institutions into types of engaging environments and then the types were

classified as high, low, or neither high nor low, and cross-tabulated with measures of

institutional mission. Six factors, representing 80% of the variance in institutional means

were extracted and rotated to identify student-engagement types. One reported

significance from the analysis was that a dominant general factor did not emerge from the

analysis. The results aligned with observations made regarding previous NSSE national

reports that institutions differ in how they engage students and none of the institutions was uniformly high or low across the measures of engagement.

Kuh, et al., (2005) identified colleges and universities that perform well in student interaction opportunities and graduation rates. Their study concentrated on the five clusters of effective educational practices measured by the NSSE including the level of academic challenge, active and collaborative learning opportunities, student interaction with faculty members, enriching educational experiences, and a supportive campus environment. Their study "Documenting Effective Educational Practice" (DEEP) highlighted 20 schools who met the standards of the study as having six features in common that foster student engagement and persistence: (a) living mission and lived educational philosophy; (b) unshakeable focus on student learning; (c) environments adapted for educational enrichment; (d) clearly marked pathways to student success; (e) improvement oriented ethos; and (f) shared responsibility for educational quality and student success.

The DEEP project found that the schools most successful in student engagement use the campus residence halls to augment and complement the academic experience of students. They added that success is not dependent upon possessing the newest and most amenity driven residence halls but more on the operational aspects of the communities and the provision of space and resource support for the academic initiatives. Further, it is most important for the campus housing program to align the educational goals of the housing communities with the mission and educational philosophy of the institution.

The DEEP project results suggested one factor of student persistence and grades is the intentionality with which a campus environment provides opportunities for

engagement (Kuh, et al., 2005). A campus environment that provides intentional opportunities for learning for all students should consider how to include the privatized student communities in a formal connection between the community and campus. Such opportunities as scheduled activities at the facility, focused encouragement to attend campus events, and an overall feeling of the campus extended into the facility will provide both the social and academic integration suggested by Tinto (1982) as essential for student attrition. Students involved in some type of organized first-year acclimation program report higher levels of satisfaction and involvement in campus activities, achieve higher grades, and are more likely to be retained and graduate. Student academic success can be measured with GPA, retention, and graduation (Astin, 1993; Jamelske, 2009; Pascarella & Terenzini, 2005).

Living Environment

The term *living experiences* refers to opportunities for students to associate theory learned within classroom with life experiences (Kuh, et.al, 2005). These experiences include interaction with other students, faculty, and staff. Examples of peer interaction opportunities include floor or group meetings, group study sessions, social events to help students get to know each other, roommate agreement meetings, leadership opportunities in the living areas, educational workshops, academic tutoring and support groups, community standards, and behavior accountability and modification programs. Potential faculty and staff interaction opportunities include faculty office hours and tutoring available in the residence facility, staff availability for mentoring and support, trained staff response to student crisis, academic programs in living areas, staff assistance with

roommate conflicts, and policies including behavior expectations and accountability (Jamelske, 2008).

Students find a variety of living options while attending college; there are three major types of physical environments that reflect the location and suggest how the environment may be managed in the United States: (a) on-campus, (b) off-campus student group living, and (c) off-campus individual living. Since 1990, approximately 300 privatized residential projects have been built on campuses (Bayless, et al., 2013). These may be owned by the private developer, a third party foundation, or the institution depending upon the relationship with the developer. In addition, there are many privately owned student group residences located off campus that may or may not have a relationship with the institution regarding management and policy. The owners and managers of these residences have their own processes for staffing, marketing and overseeing the communities, but there are many similarities between the different styles of housing provided such as full apartments with single bedrooms and private baths. The many options confuse the historical concept of on-campus and off-campus housing and require student affairs to consider new descriptions for each environment.

Bozick (2007) analyzed first year student socio-economic status, living arrangements, and retention. He specifically studied whether students from families with limited economic resources are more likely to hold jobs and live at home during the first year of college, and whether working and living at home during the first year of college impede persistence. Bozick used a nationally representative data sample of first-year students in the 1995 academic year, the *Beginning Postsecondary Students* (BPS) *Longitudinal Study* of 1996 and his results generalize among first year student cohorts.

His study focused on students commuting from individual home environments and did not include the privatized student communities. The Bozick study found a strong relationship between economic status and student retention; 77.4% of high-income students persist through the first year of college compared to 55.9% of low-income students. His findings suggest that employment and living arrangements are different for students at the opposite ends of the economic spectrum and that the students with the fewest economic resources are most likely to live at home during the first year of college as a cost-saving strategy. Bosick (2007) found that students who live in non-school-owned housing, either apartments or at home with their parents, are less likely to complete their first year of college than those students who live on-campus. He also reported that students who have the lower economic status tend to work 20 hours or more while attending school and surmised that such a commitment to work negatively affects the ability for students to integrate on campus as they should. While his study found correlation between work, living environment, and persistence, he did not identify a cause for why working more than 20 hours a week makes it difficult for the student to sustain enrollment to a second year regardless of living environment. He suggested this should be explored in future research (Bozick, 2007).

On-campus housing. Historically, the term *on-campus* referred to housing facilities owned and managed by the institution which were assumed to be managed within a student-centered learning and development model. The on-campus housing program are typically either self-supporting as an auxiliary unit or funded from the general budget. Institutions usually expect auxiliary units to contribute back to the cost of management through direct and indirect costs regardless of their funding sources.

On-campus housing programs are expected to meet the vision of the institution by identifying resources and programs that may assist students in their academic goals. ACUHO-I has identified guidelines that the housing programs are able to use as one measurement on the programs offered. There are also standards for campus housing provided by CAS that serve as a guide on how to provide a strong program to students. According to the CAS expectations (2014), the mission of Housing and Residential Life Programs is to provide for a living environment that promotes learning and development in the broadest sense and an emphasis on supporting the academic mission of the institution. This philosophy provided by CAS includes providing programs, services, and experiences in the living facilities that are intentionally planned to support student transition to college and academic endeavors. Table 1 presents the CAS standards which state that Housing and Residence Life Programs should identify relevant and desirable student learning and development outcomes from among six identified domains and related dimensions.

Table 1

CAS Standards for On-Campus Housing: Learning Domains and Dimensions

Domain	Dimensions
Knowledge acquisition, integrations, construction, and application	Relating knowledge to daily life; connecting knowledge to other knowledge, ideas and experiences; constructing knowledge; and understanding knowledge from a range of disciplines
Cognitive complexity	Critical thinking, reflective thinking, effective reasoning and creativity
Intrapersonal development	Realistic self-appraisal, self-understanding, and self-respect; identity development; commitment to ethics and integrity; and spiritual awareness
Interpersonal competence	Meaningful relationships, interdependence, collaboration, and effective leadership
Humanitarianism and civic engagement	Understanding and appreciation of cultural and human differences, social responsibility, sense of civic responsibility, and global perspective

Student affairs and housing professionals argue that student learning is more positively impacted by factors such as oversight of the living environment by professional staff and faculty trained in student learning and development, control of the environment by the institution (e.g., behavior and approval to live in the community), and intentionally planned opportunities for the student to participate in educational programming, academic support, and social interaction than by high-end amenities in the living space such as private bedrooms, bathrooms, and upgraded kitchens (Blimling, 1993, Gerrard, 2006; Helfrich, 2011; Pike, Smart, & Ethington, 2011; Schroeder & Mable, 1994; Schuh, 1996). Institutional on-campus housing is charged to follow certain criteria and standards in providing appropriate staff and support services that assist students in their learning initiatives (CAS, 2014; Cawthon & Schreiber, 2012).

According to a custom research brief written by Barnhart and LeMaster (2013) for the Education Advisory Board, on-campus housing initiatives promote access to campus resources (dining, recreation, leadership opportunities, police, counseling, and academic support programs) that will help students engage and be more satisfied with their campus experience. Staff intervene regularly monitoring student behavior, conducting conflict mediation, responding to conduct and student crises, and partnering with parents to aid in student success.

ACUHO-I provides many resources for housing professionals on managing campus housing in a manner that contributes to student development and knowledge. One resource is a list of core competencies that housing professionals should possess and utilize in the management of campus housing. Cawthon and Schreiber (2012) updated the competencies producing, *ACUHO-I Core Competencies: The Body of Knowledge for*

71

Campus Housing Professionals for the organization. Their introduction to the document emphasizes that university housing is a complex function and that staff who are successful at managing housing must have numerous skills that reflect the campus organization and management concepts. This body of knowledge recognizes that an assertion made by Harold Riker (1965) in his article regarding college housing as learning centers that identified the two primary functions for campus housing as providing a satisfactory place for students to live and helping students learn and grow. In the last 50 years, campuses have experienced significant growth in the professionalization of housing operations. Evidence of this professionalization is found in the changing designs of physical facilities, introduction of standards and ethical practice for professional practice, application of theoretical constructs pertaining to student engagement and development, and increased legal guidelines and mandates.

The core competency topics adopted by ACUHO-I reflect a complexity of knowledge that housing professionals must be aware of and develop in order to provide the educational and learning environments desired. These topics include ancillary partnerships with other units on campus, residence education services, student behavior and growth, occupancy management, conference services, crisis management, dining services, evaluation and planning, human resources, facilities management, fiscal affairs, and information technology. In addition, the core competencies are intentional in responding to the standards set by the Council for Advancement of Standards in Higher Education (CAS) for what college housing programs should be providing. CAS (2014) also recommends the level and type of training and educational development that should

be present in campus housing leadership. These standards are based on student learning

concepts that can be found in developmental theories.

      Relevant Student Development Theories. Many of the early developmental

theories noted a positive correlation between student success, persistence, and

involvement in campus residential living highlighting the positive effect that residence

hall living has on student growth and development (Astin, 1973; Pascarella & Terenzini,

1991, 2005; Tinto, 1975). Astin (1993) noted that not only were students who lived in

residence halls more likely than commuter students to graduate in four years, but also

"that satisfaction with most aspects of the undergraduate experience is facilitated by

living on campus rather than at home and by attending college some distance from home"

(p. 311). Blimling (1993) concluded that living on campus, as opposed to commuting to

campus, is associated with significant student gains in a variety of domain areas such as

resiliency and social skills. Supporting the research that suggests students who are

engaged have higher levels of success on a variety of measures, Schroeder and Mable

(1994) charged that "residence halls should be powerful and purposeful educational

settings" (p. 299).

      Strayhorn (2016) discussed the ecological systems theory introduced by

Bronfenbrenner in 1979 as one theoretical framework that "posits personal development

as a function of reciprocal influences between the individual and the setting(s) that

comprise their environments(s) or ecology" (p. 32). The ecological systems theory takes

four types of systems that explain the interactions that influence individual student

development. The four nested systems when taken together are referred to as a

Chronosystem; the Chronosystem represents the networks of interaction for the

individual. One of the nested systems is microsystem which includes all interactions with the immediate settings, both physical and metaphysical; family, school, work, and group membership.

Evans, et al., (2010) introduced a separate concept of three major bodies of ecological approaches to developmental theory: human ecology, developmental ecology, and campus ecology. Human ecology reflects on the interaction and interdependence that individuals and groups have with the environment. The foundation of the theory as described by Sontag and Bubolz is that individuals rely on social interaction that happens in a "nested context" within a human-built environment such as a residence hall on a college campus (Evans, et al., 2010, p. 159). Another tenet of human ecology is that a primary goal of the ecosystem is survival and that survival can be accomplished as adaptions are made both to the environment and with the environment. These adaptions occur as intervention and interaction occurs and individuals or groups become familiar with each other and with the surrounding environment. The social-cultural context of the ecosystem are shaped as well by the individuals who are interacting within the environment through their pre-college characteristics, commitment to the academic environment and the social constructs of the college environment found with athletics, student groups, events, and work.

Wilson and Rygg (2013) mentioned several studies that support earlier research connecting a sense of belonging and socialization that is found in on-campus housing to first-year student persistence. There is a positive relationship between membership in a living community and feeling connected to a cohort of peers due to the opportunities for participation in group living experiences (e.g. dining, studying, social interaction), and

peer, faculty, and staff interaction (Garrard, 2006; Morrow & Ackermann, 2012). Interaction contributes to the sense of belonging and comfort with the environment (Whalen, et al., 2009).

Campus facilities impact decisions of students to attend the institution (Reynolds, 2007). Reynolds conducted a study sponsored by the Association of Higher Education Facilities Officers (APPA) looking at the impact of campus facilities on student recruitment and retention. Students who attend member institutions were invited to complete a survey regarding the facilities on their campus. More than 13,500 surveys from schools in the United States were analyzed. Analysis of the data collected identified general trends and top items ranked that students consider when selecting an institution and a second ranking of those items that students feel important to their expectations of campus climate to stay. While academic programs and other academic support areas were ranked in the top section of reasons students selected an institution, quality facilities (specifically residence halls and student support buildings) ranked in the middle range of importance for selection. The top ranked characteristics of the campus contributing to the student deciding to return a second year involved the residence hall and student support facilities. Reynolds concluded that while students consider academics as the primary reason when choosing an institution, it is the residence hall and student support areas that may help keep a student at the institution for the second year. While Reynolds stated a weakness of the study was that the survey had been designed by an organization, the large diverse sample size implies that the inferences made are valid.

Social and academic integration of students can be measured by whether they live on campus or off. Murtaugh et al., (1999) found in their study that campus residency

does have a significant positive relationship with student success. They studied the

persistence of first-year students at Oregon State University over a period of five years

and found positive correlation between the time spent on campus and persistence. Their

findings suggested that students living on campus spend more time in social and

academic interaction on campus, and have higher levels of persistence through their

college career. Schudde (2011) considered the casual effect of campus residence on

college student persistence and noted that residents living on campus may receive

opportunities for social support, resources, and integration into the campus environment

that provide an advantage over those students who do not live on campus. The data for

this study were collected through a combination of the *Educational Longitudinal Study*

(ELS) and the *Integrated Postsecondary Education Data System* (IPEDS); multiple levels

of screening were conducted to clean the data and produce a sample that had participants

that could be compared and studied. The final sample included 3,408 students with 2,249

living on campus and 1,159 living off campus. The control group combined all students

living off campus regardless of where they lived, at home with parents or in other

locations. The number of students living off campus and not with parents at home was a

small enough number that the researcher determined it would not be feasible to do

separate analysis on the group. While the findings showed a significant difference in

student success and persistence between the first-year students who lived on campus over

those who live off campus, the researcher suggested that future research should be

conducted that explores what factors contribute to the difference. As with most research

regarding living environment and student academic achievement or persistence, the

students living off campus in single residence and those living in privatized student

communities were analyzed as one group which failed to acknowledge that social interaction, access to campus resources, and student group exposure may differ between the two sets of students.

Living learning communities in on-campus housing programs offer students a direct connection between their academic coursework and the living experience by offering common class schedules, faculty involvement in the living area, and the opportunity to apply the academic learning to real life situations. Garrard (2006) studied first-year student persistence and student perception of the academic environment. Specifically, he invited students who selected to live in academic learning communities on campus at on one college campus to participate. Of the students responding, 25.5% were useable for the analysis; 72% were female and 55.6% of the participants were non-White. This response compared to the first year class population of 62.7% female and 60.5% non-White. The sample was divided into two on-campus living groups: students in academic learning communities and those living in non-themed living communities. After the initial quantitative analysis was conducted regarding the students living environment and self-reported academic and social gains, a qualitative interview session was held with participants from each of the three living arrangements. He found that regardless of where students live on campus, student perception of the practical environment including an emphasis on vocational and occupational competence, on personal relevance and practical value of courses, and on developing an understanding and appreciation of diversity were strong. Additionally, he found that living in a residence hall had a significant association on student perception of the scholarly environment. Supporting student perception of the college environment as important and

knowing that students are more likely to experience gains in areas that they value, Garrard (2006) determined that living on campus is perceived as a value to students and therefore a support to student success. Limitations for this study included the data base of students from one institution and who only lived on campus. No analysis was conducted comparing to students who were living off campus. The small final sample presented challenges in addressing other potential variables and relationships. Few non-cognitive variables were used to determine other factors that could affect the student perceptions of value.

Novak (2008) conducted a comparative analysis on one land-grant university with a 2007 fall enrollment of 48,699 undergraduate students. The overall student population was 54.96% female, 18% first year students, and 69% White Non-Hispanic (28% self-reported as minority). The population invited to participate in the study consisted of approximately 7,100 students; 3,800 lived in university owned housing, 1,500 lived in university affiliated P3 housing on campus, and 1,831 lived in P3 housing off-campus. Of those who returned the surveys from the three types of campus housing 589 were first-time students living in university owned housing, 157 were living in the P3 located on campus, and 102 were in the P3 located off campus.

The purpose of the Novak study was to assess the relationship among student GPA, persistence, and campus apartment facilities. A series of questions assessing student satisfaction, participation in events and social interaction, and perception of residential experiences was conducted. Novak (2008) found statistically significant differences between students living in university owned and university P3 affiliated housing regardless of the location of the P3 housing concluding: (a) students living in the

university owned housing had the highest ratings of connectivity, peer support, and social integration; (b) students living in facilities that were constructed with greater levels of security measures and were located on the core of campus were most satisfied with the level of safety and security measures taken; (c) students living in the university owned housing that was staffed by university maintenance staff had the highest level of satisfaction with the timeliness of maintenance repairs; and (d) students living in the P3 facilities reported lower sense of community and group support. Students living in the university owned housing have higher retention rates and GPA than students living in the P3 off-campus facility. The study was conducted with a limited number of residents who lived in identified residence hall facilities; the results could not be generalized to all students living in university housing and private housing. Another limitation was that the study questionnaire did not account for cultural differences or other non-cognitive variables that could have influenced level of student satisfaction. However, this study is one of the few found that considered P3 communities when assessing relationship of living environment and student integration and success. The results can be generalized to institutions considering or involved in P3 relationships with privatized housing.

Enochs and Roland (2006) studied social adjustment of college freshmen specifically looking at the importance of gender and living environment. Their findings supported previous research regarding overall wellness levels of students, connection to the campus environment, and adjustment to the campus climate. They suggest that students, who live in environments that are conducive to learning (provide ample study space and opportunities for growth and interaction with faculty and staff) tend to adjust more easily than those students who live in other environments.

Off campus student group living. Private companies who were involved in developing, building, and managing hotels began adding student group housing to their portfolios in the early 1960s. However, it was the 1980s before multiple developing companies began designing and building the type of student housing in demand - apartments. These private companies quickly became the experts in building updated apartments near campuses that lacked the kind of housing being requested by students and their families (Bayless, et al., 2013). Growth in this type of campus housing was steady through the 1990s and into the new century. Privatized housing providers counteract concerns expressed by institutional professionals regarding the variables that help students succeed. They feel high quality facilities and amenities provide what the students need to be successful. As stated by Bill Bayless (2013), co-founder of American Campus Lifestyles, today known as American Campus Communities (ACC), ACC was formed with the mission to be the premier campus housing provider with a true understanding of the business and commitment to creating communities that meet the modern product desires of students, address parental concern for high-quality operations and impeccable maintenance of facilities and, most importantly, communities that are conducive to academic achievement and the specific goals of each university or college (Bayless, et al., 2013). This definition is indicative of many privatized companies that provide campus housing.

The definition offered by Bayless (2013) mentions creating communities conducive to academic achievement as a goal. However, the primary focus of private developer companies is providing facilities that attract college students with high level physical amenities and managing such facilities from a business perspective (Cole, 2012).

80

Student learning is typically a secondary purpose of the privatized college housing industry especially in communities found off campus. Barnhart and LeMaster (2013) conducted a custom research brief for the Education Advisory Board. They were asked by one institution to help collect information regarding policy requirements for students regarding living on campus, an assessment from various schools on how those requirements have contributed to student success, and demographic information regarding housing-specific data. They gathered information from four institutions, through research of internal and online published articles from the Education Advisory Board libraries and from the National Center for Education Statistics. Their analysis resulted in several key observations regarding student retention, graduation and living environment. They also collected data that identified common themes of management among the privatized housing found either in P3 relationships or on the edge of all five campuses. They surmised that students who lived in university-operated or privately-owned residences typically remained enrolled and graduated at higher rates than students who commuted from home or lived in off-campus housing. They only reported persistence and did not address other factors of student success. Their second finding reported a decreased construction time and costs of private developer companies to build for the institution, but that such agreements usually offer less control over building design, layout, and student support services to the institution (p. 6). Some of the challenges discussed by the article include institutional loss of control of building design, decrease of availability of auxiliary services such as dining, and an increased priority to maintain a fully occupied facility over student development (Barnhart & LeMaster, 2013, p. 10).

Private companies tend to have separate divisions within their agency to manage different types of student housing. Private developers and owners manage the owned properties near campuses with a business leasing concept focused on occupancy while the developers who manage P3 properties usually found on campus known commonly as the leased properties do so with a collaboration and expectation of student learning by the institution (Cole, 2012). The private developers who understand the importance of student development provide trained professionals in student development and are more likely to have P3 relationships that allow for close connection to the institutional mission. Many of the companies have hired student affairs professionals to manage their *educational unit* within the company as an effort to increase the educational environment of the on-campus facilities.

Privatized student communities typically offer a landlord tenant lease that is managed from a business perspective. Some P3 relationships will require the privatized student community to use an institutional based student license agreement that allows the student to cancel if needed without full penalty of the 12 month lease. Owners agree to this business process under expectation that the institution pays for all beds regardless of occupancy. The typical management style (decisions based with a high regard of financial *pro forma*) of these living environments distinguishes them from that of the university managed housing where the primary intent is to provide intentional environments and activities that provide opportunity for educational learning and student development concepts (Blimling & Mittenberg, 1984; Kennedy, 2013). An example of the typical management style that is *pro forma* focused is that the privatized management company will hold an individual to the 12 month lease that was signed in good faith that

the person would be a student during that period of time. If the student separates from the institution whether due to voluntary or involuntary withdrawal, the management team typically will not release the student from the lease. In this case, the student may leave the area and is unable to live in the leased unit but will have to either find someone to take over the lease or pay the amount owed. This approach differs with on-campus institutional housing in that the budgets allow students to cancel housing during the term of the academic year due to unforeseen circumstances. Also, institutionally managed on-campus housing is restricted to current students; if the resident withdraws from the institution housing is automatically cancelled and the resident is expected to move out of the housing.

While the privatized student communities can provide housing for students that is amenity-based and considered to be upscale in comparison to most housing facilities found on campuses, there continues to be controversy between the higher education professionals and the private owners over the necessity of a focused educational learning environment for first-year student academic success. Privatized student communities have not been thoroughly tested through research looking at the living environments and student success.

Off campus individual residence - commuting. Institutions define the commuting student differently but, in general, a commuting student is one for whom home and campus is not synonymous. Jacoby (2000) supported her earlier definition of commuter students as students who do not live in institutional-owned housing on campus. She added that the students could be full-time and part-time, traditional and non-traditional, and living with parents, in rental housing near campus, or on their own a

greater distance from campus. Kim and Rury (2011) stated a commuting student is one that is living in a single or individual-designed housing in neighborhoods mixed with non-student tenants and therefore not formally organized as a college student community.

Many campuses are beginning to identify commuting students as more diverse in need based on the distance they live from campus. Those living within a walking or cycling distance of campus and able to travel back and forth without assistance of a vehicular mode of travel tend to be more active in campus experiences and events, while those that live at a distance that requires a vehicular mode of travel to get to campus are not as likely to participate in the campus resources (Newbold, et al., 2011). Novak (2008) found a significant relationship in student interaction with the campus environment and distance living from the core of campus. For the purpose of this study, the commuting student will not be analyzed separately by mode of travel to campus, but rather as not living in a group community such as the on-campus and privatized student communities have been defined.

Some research identifies characteristics of a commuting student. These studies suggest that the typical commuting student is non-traditional in age, activity, and complexity of commitment outside of their academic pursuits, and therefore view their experience with college differently than those who live on campus (Chickering, 1974; Murtaugh, et al., 1999; Newbold, et al., 2011). Newbold, et al., (2011) also suggested that commuter students tend to be transfer students who have experienced fulltime college life at other institutions rather than first-year college students. Stewart and Rue (1983) discussed the different definitions of a commuting student stating that there are three variables that assist faculty and staff in distinguishing the commuting student

84

population: (a) dependence (student lives at home with parents or a close relative who assumes parental responsibilities) versus independence (student lives alone or with roommates off campus without an adult family member or close relative); (b) traditional-aged (student is under 25 years old, started college shortly after finishing secondary education, and has not lived on their own) versus non-traditional-aged (student is 25 or older as they start school, and has had significant life experiences such as parenting, military service, or fulltime work experience prior to starting their college experience); and (c) part-time (student is taking less than the prescribed course load for the institution or degree program) versus full-time (student is taking a full course load as defined by the institution and degree program).

Students living in close proximity to campus had a higher occurrence of persistence and graduation than those who lived further away from campus and at home as well as those students living off campus if they were affiliated with Greek or other organizations that offer a strong social and service network for members (Lowther & Langley, 2005; Moores & Klas, 1989). Furthermore, Jacoby (2000) pointed out that commuter students lack a sense of belonging to the campus environment, and may even feel like an outsider watching the events and functions of the campus unfold without their personal commitment or involvement. Studies show that students who live on campus have higher retention and academic progress than those who remain off campus regardless of the distance the student lives from campus (Oseguera, 2005; Thompson, 1993). Research regarding commuting students shows that proximity of residence to campus increases persistence. However, there is little data that relates to students who

live within group communities managed as student housing by private developers versus students who live in private individual units that are in non-student communities.

Student Persistence and Academic Success

The most critical time in which students make the commitment to college and therefore choose to persist to graduation is during the first-year (Astin, 1993; Evans, Forney, Guido, Patton, & Renn, 2010; Kiser & Price, 2008; Pascarella & Terenzini, 2005; Schroeder & Mable, 1994). The first six to eight weeks of the first-year is the most significant time in which students acclimate to campus and to the college experience (Hoyt & Winn, 2004; Woosley, 2003). The terms referring to student status after the first-year of school include both retention and persistence and are used interchangeably throughout the literature. The Kentucky Council on Postsecondary Education (2014) defines student persistence as students who return the second year of their college career to the same institution and enroll as a continuing student. The term persistence and the Kentucky CPE definition meet the purpose of this study.

Milem and Berger (1997) studied first-year undergraduate persistence by using the Astin theory of involvement to help understand the Tinto theory of student departure. They conducted a longitudinal study of first year persistence at a highly selective private residential university; the university had 6,000 undergraduate students, approximately 1,500 of whom were first year students. More than 98% of the first-year cohort lived in on-campus residence halls. The purpose of the study was to test the conceptual model of student persistence that integrates behavioral constructs from Astin to further specify aspects of Tinto. Three surveys were administered to the first-year students each year: (a) the *Student Information Form* (SIF) at the end of freshman orientation, (b) the *Early*

Collegiate Experiences Survey (ECES) in mid-October, and (c) the *Freshman Year Survey* (FYS) in mid-spring. Data from all three surveys were matched and merged into one data set producing information on 718 students who had completed all three.

The Milem and Berger study (1997) introduced an integrated model in which student behaviors and perceptions interact to influence the development of academic and social integration. The study replicated the concepts found in each of the models presented by Tinto (1993) and Astin (1984) but wanted to show a relationship between the two.

Milem and Berger (1997) hypothesized that college students begin to engage in a variety of behaviors that represent different forms and types of involvement (or lack of involvement) during the transition stage which occurs in the first eight weeks of academic work. During the transition stage students determine the degree to which they think the institution supports the academic and social aspects of their experience, and their perception of support influences their level of commitment and involvement. They found significant support for their hypothesis that there is a positive relationship between some entry characteristics, early student involvement, and perceptions of institutional support. Their study found an interconnection between the Astin and the Tinto models reflecting the importance of accounting for both the behavioral and perceptual components of persistence through the first-year.

Milem and Berger (1997) determined from the study that the nature of the early involvement during the fall semester influences perceptions formed by students about their experience at the institution and the extent of subsequent involvement at the institution. The researchers noted that the highly selective nature of the university limited

the study findings to specific types of institutions. The institutional characteristics may also have influenced the findings that academic achievement and interaction were less a concern for the students than the social interaction.

A subsequent paper by Berger and Milem (1999) addressed the limitations of the 1997 study by suggesting three ways to improve the causal model: (a) indirect variables such as gender, ethnicity, socioeconomic status, and high school grade point average should be included in the study to help offer a more complete overview of how the different constructs within the model affect each other; (b) the initial model was developed as an exploratory process but did not explain the process of commitment to involvement; and (c) the model used a proxy measure based on reported intent to return and did not actually measure who returned the next year. According to the results of the 1999 study, several entry characteristics have a significant relationship to early involvement (entry GPA scores, socio-economic status, gender, and race). While Berger and Milem (1999) felt the second study confirmed some of the 1997 results, there was an additional need for future research that would analyze the relationship between these entry characteristics and the different types of living environments for students.

GPA as measurement for academic achievement. Most predictive validity studies in educational settings have used generalized criterion measures such as GPA to measure student academic success (Kiser & Price, 2008; Kuh, et al., 2005; Novak, 2008; Schlinsog, 2010). GPA typically reflects arithmetically averaged components of performance, and meaningful variance may well have been averaged out in such a multidimensional criterion. Therefore, weak and non-supportive findings might have occurred because insensitive criterion measures were being used (Kappe & van der Flier,

88

2010). Another concern regarding use of GPA is the variance in score values given from

different teachers and programs which could cause inflation or inaccurate (Willingham,

Pollack, & Lewis, 2002).

Use of cumulative grades in determining important educational decisions such as

entrance to higher education selective institutions makes the grades a high-stakes

predictor or criterion (Willingham, et al., 2002, p. 30). Researchers connect tests and

grades interchangeably when analyzed as predictors of student success. In the same

process, studies evaluate tests for the broader function to ensure validity of their

relationship; grade averages are evaluated less systematically. While there is historical

evidence that cumulative grade averages and standardized test scores analyzed together

have positive relationship to student success, there has been as long a history of

controversy regarding the value and validity of using grades as a lone variable

(Willingham, et al., 2002). In their study, Willingham, et al., (2002) analyzed patterns of

individual and group differences in assessment outcomes. Using a national education

learning scale, NELS, the researchers collected data from participants in regular school

programs with test, transcript, and questionnaire data. The sample was limited to 8,454

students attending 581 schools which had 10 or more NELS participates with the

requisite data. The sample had few students who had changed high schools during their

secondary education. Their study aligned with the previous research that significant

variation in grading occurs among schools and teachers, finding that test content is

constant, but grading standard varies from student to student and school to school. The

conclusions of this study included: (a) grades and test scores are strongly related for

individuals and for groups; (b) it is possible to increase grade-test correlations and

decrease differential prediction with corrections that may have little connection with the quality of the test being evaluated; and (c) the common statistics will give a misleading picture of validity and fairness if other factors are not considered.

Willingham, et al., (2002) also acknowledged that providing feedback is the primary objection of student assessment. Grades and tests perform this function differently with grades providing immediate reward or punishment to students for good or poor work on specific material. Tests are more concerned with how students are doing at the end of the education term. While teachers have reported passing students if they have tried hard to understand and do the work, administrators rely on the standardized testing to add accountability in reporting students ability to succeed. Overall, the researchers determined that grades and test scores combined with other factors can function as a valid predictor group for student success.

Schlinsog (2010) studied whether student engagement during the first year could be used as a predictor for academic achievement and persistence to graduation. While his findings suggested student engagement had no significant impact for first-generation or continuing-generation students, Schlinsog determined that high-school GPA when combined with ACT score is a significant predictor of first-year success. He also found that GPA at the end of the first year was a significant predictor of GPA at graduation and persistence (t=6.61, p<.05) with a 42.5% variance. His study also analyzed GPA for first-generation student success and found that first-generation students tend to have lower GPA scores after the first year of school, and tend to not persist at the same level as students who are continuing-generation. However, his findings showed that the first-generation students who do persist to completion graduate with a slightly higher overall

GPA than the continuing-generation students. Schlinsog (2010) concluded that high

school ACT and GPA scores serve as predictors of first-year grade point average, and

first-year GPA is a predictor of cumulative GPA at graduation.

Kappe and van der Flier (2010) investigated whether non-significant weak

associations between personality traits and academic achievement could be larger if

academic performance criteria were substituted for the traditional overall GPA. They

conducted a study to test the predictive validity and reliability of the Big Five personality

traits using specific academic performance criteria such as classroom lectures, skills

training, on-the-job training, and written theses. The Big Five framework, developed by

Costa and McCrae (1992), considers conscientiousness, neuroticism, extraversion,

openness, and agreeableness as five personality traits that help understand the

relationship between personality and various academic behaviors (Komarraju, Karau,

Schmeck, & Avdic, 2011, p. 472). GPA was used as the cumulative measure of grades

across all subjects throughout the college experience. The results of the study showed

that conscientiousness is an important predictor of performance in higher education

regardless of how performance is measured. The study suggested that when other

performance factors are utilized the relationship between academic achievement and

GPA is stronger.

Kern, et al., (1998) analyzed student persistence and academic performance to

determine early predictors for success by examining the relationships between academic

success and several student attitudes and habits regarding the academic work and

preparation. Specifically, he reviewed: (a) learning and study skills, (b) attitudes about

college, and (c) students beliefs about control and responsibility for academic

achievement. One hundred twenty students who were taking a career planning and development course at a predominantly white higher education institution volunteered to participate in the study. The coordinator of the course incorporated the research project into the activities in the class during the term. Multiple nationally-used instruments were administered to the students (*Gibb Experimental Test of Testwiseness,* the *Learning and Study Strategies Inventory* – LASSI, and the *Intellectual Achievement Responsibility Questionnaire* – IARQ) throughout the semester, and student ACT scores, GPAs and enrollment status for the next four semesters were collected as demographic variables. Variables that were measured in the study included perceived responsibility for academic success and failure, ACT scores, anxiety, motivation, and time management. The analysis of the data found that GPA has a direct effect on attrition and that ACT scores are significantly related to GPA as one index of college success. The study supported previous research regarding the reliability of ACT scores as a predictor for student academic achievement.

   ACT score as the covariate. There are many variables that can contribute toward student academic achievement and persistence such as the pre-college attributes including academic preparation, exposure to collegial environments, familial relationships and expectations, and close peer-connections (Astin, 1984; Lee, Donlan, & Brown, 2010; Longwell-Grice & Longwell-Grice, 2008; Prussia & Weis, 2004; Terenzini & Pascarella, 1980; Tinto, 1993;). Historically, ACT scores and high school GPA are traditional predictors of student success in college accounting for approximately 25% of academic performance in college as reflected by the GPA. ACT score is accepted as a predictor for student academic success, specifically grades and persistence when paired

with high school GPA (Astin, 1993; Bean & Metzner, 1985; Kern, et al., 1998; Sparkman, et al., 2012).

Summary

Understanding how students are motivated and find satisfaction with the campus environment is important in providing the resources and opportunities for interaction, as well as designing appropriate types of campus and living environments that will help students persist and succeed. Students commit and interact differently based upon their pre-college attributes and the college experiences (Astin, 1984; Kiser & Price, 2008; Kuh, et al., 2006; Pascarella & Terenzini, 2005). Universities and colleges are partnering with businesses on the edge of campus, and deciding whether to partner or compete with private developers who manage apartment communities for students. Because institutions align with privatized housing developers by joining in P3 relationships and support a differently managed campus housing program, institutions face a fundamentally different landscape than they did with housing previous generations of students. Therefore, it is important to be better informed as to how this new paradigm of campus housing affects student learning, success, and persistence in order to determine the best partnerships to form. The results of this study will also help inform higher education administrators, student affairs and housing programs, and the privatized housing developers on the relationship among first-year student grades and persistence to a second year and the living environment.

CHAPTER 3

METHODOLOGY

This chapter discusses the methodology and procedures utilized to examine the relationship between college living environment and first-year academic achievement and persistence to a second year at one institution. The chapter presents the research design, research questions, participants, study procedure, study variables, statistical analysis, and limitations identified as the study was conducted.

Research in higher education has examined what factors contribute to student success and persistence including pre-college attributes and college experiences (Astin, 1993; Barnhart & LeMaster, 2013; Bozick, 2007; Hotchkiss, Moore, & Pitts, 2006; Murtaugh, et al., 1999; Novak, 2008; Tinto, 1993; Turley & Wodtke, 2010). The purpose of this study was to begin filling a gap in literature regarding student persistence and academic success and living environment. Previous studies regarding living environment had two primary categories, living on-campus and commuting. This study added a third category of data regarding students who live in privatized housing communities off campus.

Research Design

The case study was quantitative in nature and was considered non-experimental since an existing data set was utilized and no manipulation of the variables occurred (Creswell, 2012). A matched random sample of students from an existing data set was

used to analyze the questions of the study. The study questioned whether there was a significant relationship among the three types of living environment and first-year student persistence to a second year and academic achievement as measured by cumulative grade point average at the end of the first year, considering the influence of gender, generation status, and ACT entry score as pre-college attributes. The institution selected for the case study was a Research I, state-supported institution located in an urban environment.

Fraenkel and Wallen (2009) describe a causal-comparative or ex post facto study as one where investigators attempt to determine the cause or consequences of differences that already exist between or among groups of individuals. An ex post facto design studies both effect(s) and alleged correlation(s) that have already occurred. This current study met the definition of ex post facto or causal-comparative for several reasons: (a) it involved the comparison of two or more groups on single dependent variables; (b) the characteristic that differentiates these groups was the independent variable; (c) there was no control over the independent variable since the event occurred before the research was conducted for the study; and (d) there was no certainty that the two groups were exactly equal before the difference occurred (Creswell, 2012).

This research conducted an analysis of existing data received from the study institution. The data was coded by Institutional Research prior to release to replace all student identification numbers with a randomly assigned identifier. The dataset contained first-year students from three different cohort years (2010, 2011, and 2012). GRS Cohort from one institution; grade point average, ACT entry score, and persistence to a second year were included in the dataset. After review of frequencies in the dataset, the researcher decided to only utilize the 2011 GRS Cohort data for this study. This

decision is explained later in this chapter with the sample demographic discussion. Steps were taken to prepare the data by coding each variable appropriately and creating a matched sample to use for the actual analysis.

Data were analyzed using descriptive statistics, logistic regression, and factorial ANCOVA statistical procedures. The analysis used the descriptive statistics to assess academic achievement as measured by grades at the end of the first year and persistence from the first year to the second year of study by comparing the pre-college attributes of gender and generation status. The logistic regression was utilized to determine if the independent variables (gender, generation status, and living environment) were predictors of persistence. The factorial ANCOVA was necessary since there was a covariate analyzed in the study, ACT entry score. The ANCOVA compared the sample means to examine the relationship between the variables when considering the addition of the covariate.

Research Questions

There were ten research questions addressed in this study: (a) one three-way, (b) three two-way, (c) three main effect interaction, and (d) three predictor based questions.

A. Three-way analysis:

1. Is there a significant three-way interaction effect of gender, generation status, and living environment on academic achievement adjusting for entry ACT scores?

B. Two-way analysis:

1. Is there a significant two-way interaction effect between gender and generation status on academic achievement adjusting for entry ACT score?

2. Is there a significant two-way interaction effect between gender and living environment on academic achievement adjusting for entry ACT score?

3. Is there a significant two-way interaction effect between generation status and living environment on academic achievement adjusting for entry ACT score?

C. Main effect interaction analysis:

1. Is there a significant main effect of gender on academic achievement adjusting for entry ACT score?

2. Is there a significant main effect of generation status on academic achievement adjusting for entry ACT score?

3. Is there a significant main effect of living environment on academic achievement adjusting for entry ACT score?

D. Predictor:

1. Is gender a significant predictor of persistence adjusting for entry ACT score?

2. Is generation status a significant predictor of persistence adjusting for entry ACT score?

3. Is living environment a significant predictor of persistence adjusting for entry ACT score?

Participants

  The target population included first-year students attending four-year research institutions that offer on-campus residential housing in the United States without requiring a live-on requirement for first year students. *First-year students* are those who enter a college or university as their first traditional higher education experience and who are no longer enrolled in secondary education or taking dual credit postsecondary courses (University of Louisville, 2011). The University of Louisville (UofL) was the institution selected for the case study because there was availability of off-campus privatized student housing and there was no requirement for first-year students to live on campus during the cohort year of study. The campus Housing Office collected leasing rosters from each of the properties so the data were available that identified who lived in the privatized housing. UofL is considered a premier, nationally recognized metropolitan research university located in Kentucky (University of Louisville, 2015) with approximately 22,000 students in the undergraduate and graduate programs. UofL students had options of living in each of the three types of living environment being researched.

  Total enrollment at the institution for the 2011-2012 year was 22,249; 15,772 (70%) were classified as undergraduate students. The total enrollment was represented by 11,406 (51%) female students and 10,843 (49%) male students. There were 4,000 freshmen students, with 2,569 (64%) considered as first time entering students. The university enrolled students from all fifty states and over 100 different countries. Table 2 presents the institutional student data reported for 2011.

Table 2

2011 Student Demographic Data for University of Louisville

Data description	2011-2012	% of total
Total student enrollment	22,249	
Undergraduate	15,722	71%
Graduate, post-doctoral, house staff	6,477	29%
Full-time	16,924	76%
Part-time	5,325	24%
Female	11,406	51%
Male	10,843	49%

Sample Demographics

The data set obtained included the GRS Cohort data from 2010-2011, 2011-2012, and 2012-2013 reported by UofL. The data included enrolled first-year students for each of the years requested and provided the demographic information for each of the study variables and the covariate variable. The data request included all three years to allow the analysis to compare the results of the years and strengthen the interpretation of the data.

The GRS cohort 2011 was the only year that provided data of students living off campus in privatized housing. The GRS cohort 2010 did not provide a delineation between those students living off campus/commuting and off-campus in privatized housing. GRS cohort 2012 was the first year of a live-on requirement which prevented first-year students from living in privatized housing located off campus without permission from the on-campus Housing Office. Therefore, the comparison of all three living environments could only be analyzed for the GRS cohort 2011 year and no analysis was conducted across multiple cohort years.

GRS Cohort 2011 data. The data set from the institution for the cohort year of

study included gender, generation-status, and entry ACT score of the first-year students

entering the fall semester, along with their identified living environment, the cumulative

GPA as reported at the end of the spring semester, and persistence to the fall 2012

semester. The data were analyzed for any interaction affect between the dependent

variables on student academic achievement and persistence. As shown in Table 3, the

three levels of Living Environment were uneven in size with living on campus and

commuting to campus showing a much larger number of students than the privatized

environment. The large difference in group sizes of the living environments prevented a

guarantee regarding Type I errors (Cohen, 1992).

Table 3

Frequency Table: GRS Cohort, 2011-2012 Living Environment

	Frequency	Percent	Cumulative percent
Living on campus	1063	41.4	41.4
Living in privatized housing	120	4.7	46
Commuting	1386	54.0	100
Total	2569	100.0	

Some of the required statistical assumptions were not met with the full data set.

The assumption of homogeneity of variances was violated for both GPA ($p=.000$) and

persistence ($p=.001$) as assessed by the Levene test for equality of variances. Box's Test

of Equality of Covariance was significant (Box's $M = 65.767$, $F = 2.164$, $p<.01$), showing

an inequality of variance to covariance matrices. Since it was unclear as to whether the

sample sizes of the living environments created conditions where not all of the

assumptions for the study were met, an alternate sample method was identified.

Matched Sample

A matched sample set from the full data allowed the three levels of living environment to be equal in size and composition (Stevens, 2009). The following considerations and steps ensured the data would be matched in a valid manner and would therefore produce findings that would more likely meet assumptions.

Identification of valid sample. The smallest number of students lived in the privatized housing; that group became the baseline for the matched sample. The original data sample for privatized housing included 120 students. Of the 120, 17 students changed living environments within the first year of college. Those 17 were eliminated from the base sample to ensure any analysis of interaction would be based on a single living environment for the full year.

Identification of the pre-college attributes within the base sample. The remaining 103 students in the full data set who lived in privatized housing were examined to determine how many were in each of the independent variable groups of the study (gender and generation status). Table 4 presents the variables in the full dataset of the students who lived in privatized housing after removing the students who changed environments.

Table 4

Number of Students Who Lived in Privatized Housing / Variable Group

Variables	First-generation	Continuing-generation	Total
Female	12	57	69
Male	3	31	34
Total	15	88	103

The students who either lived on campus or commuted were reviewed to identify and remove any student who changed living environment types during the cohort year. A table of random numbers was assigned to each student in the remaining dataset who lived on campus and those who commuted. There were no duplicate random numbers assigned to ensure all units would be independent of each other. This allowed identification of 103 total students who lived on campus and 103 who commuted through a random selection that matched the demographic composition of the base sample. The random sample did not base selection on ACT scores at entry which is the covariate variable. After identifying the students from the full dataset for the matched sample, the data were analyzed for interaction; most statistical assumptions were met. An explanation of the assumptions is found in Chapter 4 with analysis of the questions.

Matched Sample Characteristics

The matched sample utilized for this study consisted of 309 first-time first-year students enrolled at a comprehensive, Research I university located in an urban environment. All students were enrolled with full-time status during the fall semester in 2011 and were identified as part of the Graduate Rate Survey (GRS) cohort; each cohort tracks to a six-year graduation rate. A total of 100 males (11%) and 209 females (89%) were studied. The purpose of the matched sample was to have the number of students in each living environment equal; therefore, the ratio of men to women and numbers of first-generation students in each living environment were equal.

Seventeen students who began the first year living in privatized housing moved to one of the other types of living environment during the year; there were students in each of the other types of living environment who changed as well (on-campus $n = 22$,

commuting $n = 17$). Any student who changed living environment types during the first year was removed from the data prior to conducting the random sample in order to identify the 309 students for the matched sample. The full dataset and the matched sample identification for the cohort year is shown in Table 5.

Table 5

Student Demographic Information – 2011 GRS Cohort with Matched Sample

Data Description	Full cohort 2011-2012	% of Cohort	Matched sample 2011-2012	% of Matched sample
Graduate Rate Survey (GRS) Cohort	2569		309	12%
Males enrolled	1243	48%	100	32%
Females enrolled	1326	52%	209	68%
Total living on campus	1063	41%	103	33%
Total living off campus, privatized	120	5%	103	33%
Total commuting	1386	54%	103	33%
Total self-reporting as first-generation	434	17%	45	15%
Average ACT entry score of cohort	25			

Note: Indicates all first-time, full-time baccalaureate degree-seeking students entering by the Fall semester

Validity

External validity was important to this study in order to generalize the results and add to existing literature regarding campus living environments. The use of data from one institution limits the strength of generalization to the greater population. Data used in nonexperimental methods can produce representative samples that promote external validity, especially if the results confirm earlier research conducted on the same general topics (Shadish, Cook, & Campbell, 2002).

Internal validity was evaluated and determined to have some level of threat to statistical conclusion validity because some of the variables in the dataset were collected through self-report methods and therefore reliant on the accuracy of the reported item. The resulting unreliability of measures and the extraneous variance in experience regardless of the living environments may have impacted the occurrence of persistence and academic achievement. Since this was a non-experimental correlational design making causal inferences was not a priority, and the lack of control for individual student experiences within the living environment limited the ability to determine which variable was the cause or the effect when it came to student persistence and academic achievement. The data within the sample included an equal number of students from each of the three types of living environment in order to strengthen the internal validity of the study.

Study Procedure

The researcher submitted a proposal to the institutional review board asking permission to use an existing dataset from the institution. Once permission to proceed was received, the researcher consulted with the institutional research department at the institution and requested the 2010, 2011, and 2012 GRS Cohort datasets to see if there would be data for multiple years that could be analyzed. The three year dataset was emailed to the researcher. The dataset is the property of the University of Louisville and is housed on a server accessible to Institutional Research personnel. Frequency tests on the three years of GRS Cohort revealed that there was not sufficient data identifying those students who lived in privatized housing for the 2010 year and that due to the

implementation of a first-year student live on policy only one student lived in privatized

housing in 2012. Therefore, only the 2011 GRS cohort year was analyzed for this study.

Study Variables

The following variables for this study were identified from the literature presented

earlier. Some of the variables were analyzed as pre-college attributes in an effort to

increase the validity of the study based on accepted predictors of student success (Astin,

1984; Schlinsog, 2010; Tinto 1993). General discussion of the variables used for the

current study is found in the following sections. The discussion notes the validity

concerns for the study in relation to using GPA and ACT scores as variables and

predictors.

Independent Variables

The independent variables were identified based on the literature review that

offered the importance of considering pre-college characteristics that students bring to

college when looking at student success (Astin, 1993; Engle & Tinto, 2008; Tinto, 1993).

The independent variables included in this study were gender, generation status, and

living environment; all were measured on a categorical scale as described below.

Both gender and generation status were based on self-reporting data provided the

institution on the admissions application submitted. Living environment was tracked by

the institution for 2011 by the Housing and Residence Life office through rosters

provided by each privatized property for each semester. The Housing and Residence Life

Office compared the roster to the on-campus housing roster on receipt to ensure there

were no duplications, added student identification numbers to the rosters, and then

submitted all rosters to Institutional Research to help that department track student living environments for university reports on persistence and graduation.

Gender. Gender was evaluated as male or female based on what the student self-reported in the college admission application to the institution. The institution did not offer additional identifiers for gender other than male or female during the GRS year used for the study. Gender was considered a pre-attribute factor and was analyzed as an independent nominal variable with two levels. It was coded as male (=0) and female (=1). There were 209 (68%) female and 100 (32%) male students found in the matched data sample; the full dataset reported 52% females and 48% males.

Generation Status. As the second pre-attribute factor, generation status was identified by the institution as first-generation or continuing-generation based on whether either a parent or grandparent attended college. This independent nominal variable had two levels; the levels were coded as continuing-generation (= 0) and first-generation (=1). Forty-five (15%) of the students in the matched sample reported as first-generation, which was similar to the 454 (17%) found in the full cohort dataset. Fifteen of the first-generation students lived within each of the types of living environment; 12 first-generation females and 3 first-generation males were noted to live in each of the types of living environment (on-campus, privatized, and commuting). The low number of first-generation males (*n*=3) and females (*n*=12) in each of the types of living environment was very small and cannot be over-generalized to the study results.

Living Environment. The living environment identified where the student was reported to live while attending classes during the study cohort year. Living environment was selected due to the gap in literature on evidence regarding the relationship between

the privatized student community and student academic achievement and persistence. Living environment was an independent nominal variable with three levels that were labeled and coded as on-campus (=1), privatized student community (=2), and commuting from individual residence (=3).

On-campus is defined as a group residence community intentionally designed to provide core housing and support student development on college and university campuses (ACUHO-I, 2016) which includes opportunities for social interaction with peers, faculty and staff, and campus based resources that enhance the sense of belonging and academic achievement perceived by the student. These group communities are located on campus and typically are managed by university staff, but could be a joint management with a P3 agreement where the university staff has oversight and control of the student development component of the facility.

The institution of study offered approximately 2,750 beds that were considered on-campus during 2011. Of those, approximately 700 (24%) were apartment style that provided full kitchens, double and single bedrooms, a living room, and baths in each unit; 1050 (39%) were suite style that provided double rooms that shared a bath; and the remainder 1000 (37%) were configured as double-loaded corridor, traditional, community bath with double rooms. The on-campus housing of the study institution was jointly owned by the university (1,550 beds) and a housing foundation (1,200 beds) formed by the university as part of the larger foundation for the university. The foundation halls (four halls with 1,200 beds) were managed under a P3 third party that met the on-campus housing standards for student development.

Privatized Student Communities refer to communities that are owned and managed by privately owned entities that design, build, and manage student residence complexes. These communities can be located on campus or off campus, and may or may not have a formal relationship with the housing program managed by the institution. This study included three private communities providing approximately 1,850 apartment beds housing for the University of Louisville students in 2011. These properties were within easy walking distance of the campus, provided high-amenity driven apartments with private bedrooms and baths, upscale kitchens, and living areas. The university had affiliation agreements with each that required the owner to meet a level of safety and security that met the institution's campus expectations including: fire reporting and coverage systems, life safety equipment such as blue light emergency poles and outdoor lighting of traffic pathways to the campus. The institution offered an endorsement of the property to students and their parents. The agreements did not guarantee occupancy from the university, nor did the on-campus Housing Office have any management or student programming responsibilities.

Commuting refers to those students who live in and commute to campus from individual living units either from the family home or from an apartment that is not part of a student group community. Approximately 13,000 (60%) of the students attending the university could commute from home during the 2011 − 2012 academic year (University of Louisville, 2011).

ACT score at entry (covariate variable). A covariate is added when there is a possibility that the nature of the interaction between the independent variable and the dependent variable might be affected by an additional variable (Creswell, 2012). This

study utilized the ACT score at entry as a covariate to see if the ACT score would alter the interaction effect of gender and generation status on academic achievement. The ACT score is one standardized test accepted by higher education as a predictor of student preparedness and success. Therefore, this study analyzed data using the ACT score as a covariate variable. The interval variable was coded on the accepted scale for the ACT of 0 – 36. The researcher selected ACT scores because they are accepted as a predictor for student academic success, specifically grades and persistence when paired with high school GPA (Astin, 1993; Bean & Metzner, 1985; Kern, et al., 1998; Sparkman, et al., 2012).

There are different types of validity associated with using ACT scores for prediction of student success (Borden & Young, 2008; Crocker, Llabre, & Miller, 1988). Borden and Young (2008) discussed the different types of validity and how they may be applied with standardized testing and grades including content, criterion, concurrent and predictive validity. Criterion validity demonstrates correlation between the measure being validated and other known and accepted standard measures or criteria. Predictive validity is applied in research regarding test scores, GPA, and student success, especially when the criteria are not obtained until later. Predictive validity may also be applied to GPA and persistence to the next year. Coyle and Pillow (2008) discussed the significance of the g factor which represents variance common to many cognitive tests. Their results found a significant positive relationship between ACT and GPA after removing the g factor and thus supported previous studies that found predictive validity with using ACT for student academic achievement and persistence.

Dependent Variables

The major dependent variables were selected in order to fill a gap in literature regarding the interaction of living environment on student persistence and academic achievement; the dependent variables were persistence and academic achievement.

This study examined the effect of living environment on student academic achievement, as measured by cumulative GPA and persistence. French, Immekus, and Oakes (2005) studied student persistence and academic success by using GPA as one of their variables. They found that first-year cumulative GPA can be a strong predictor of both the ability and commitment to remain in school to complete a degree. Pike and Kuh (2005) relayed that student engagement in educationally purposeful activities is positively related to both grades and persistence.

Persistence. Persistence referred to the status of continued enrollment of the student in the subsequent fall semester after the cohort study year. This was one of two dependent variables. It was a nominal variable issued two levels: student did not persist (=0) and student did persist the subsequent year (=1). Persistence was measured as either a yes or no answer based on the data received from the institution. Persistence for the purpose of this study followed the definition presented by the Kentucky Council on Postsecondary Education and observed by the study institution as the continued enrollment in subsequent primary academic terms at the same institution as the student works toward completing a credential (Kentucky CPE, 2014).

Academic achievement measured by cumulative GPA. Academic achievement was measured by the cumulative grade point average at the end of the first year of college. This second dependent variable was based on overall cumulative GPA at the end

of the cohort year or first year of study. It was an interval variable that was coded based on accepted scores for grade point average of 0.0 – 4.0.

The data utilized for the study included identification of the first-year students who enrolled in the fall semester of the second year of study as well as the cumulative grade point average at the end of the first year of college. Predictive validity studies in educational settings have used generalized criterion measures such as GPA to measure student academic success (Kiser & Price, 2008; Kuh, et al., 2005; Novak, 2008; Schlinsog, 2010). However, there are challenges to utilizing GPA as a predictor, especially if it is analyzed as a lone predictor and not paired with standardized test scores, because the variance in score values given from different teachers and programs could cause inaccurate scores of the work performed by the student (Kappe & van der Flier, 2010; Willingham, et al., 2002).

Use of cumulative grades in determining important educational decisions such as entrance to higher education selective institutions makes the grades a high-stakes predictor or criterion (Willingham et al., 2002, p. 30). While there is historical evidence that cumulative grade averages and standardized test scores analyzed together have positive relationship to student success, there has been as long a history of controversy regarding the value and validity of using grades without being paired with another factor (Willingham, et al., 2002). Achievement tests and grades are interchangeably connected when considered as predictors of student success; achievement tests are routinely evaluated for the broader function to ensure validity of their relationship to student persistence while grade averages are evaluated less systematically.

Beyond determining the validity of using GPA scores as a predictor for student success, it was important to determine the validity of using GPA as a predictor for student persistence and success while in college. There is a positive relationship between GPA and persistence throughout the college career (Kappe & van der Flier, 2010; Novak, 2008; Schlinsog, 2010). Kappe and van der Flier (2010) suggested that the relationship between academic achievement and GPA can be strengthened when other performance factors are utilized. Kern, et al. (1998) found that cumulative GPA has a direct effect on attrition.

Table 6 lists the descriptions of the variables for the study and summarizes the coding used for each for the analysis.

Table 6

Study Variables with Level of Measurement and Coding

Independent Variables	Source	Level of Measurement	Coding
Gender	IR	Nominal, 2 levels	0 = male, 1 = female
Generation Status	IR	Nominal, 2 levels	0 = continuing-generation, 1 = first-generation
Living Environment	IR	Nominal, 3 levels	1 = On campus; 2 = Privatized student community; 3 = Commuting
Dependent Variables - Outcomes	**Source**	**Level of Measurement**	**Coding**
Academic Achievement (GPA)	IR	Interval	0.0 - 4.0
Persistence to 2nd year	IR	Nominal, 2 levels	0 = No, 1 = Yes
Covariate Variable	**Source**	**Level of Measurement**	**Coding**
ACT score	IR	Interval	0-36

Note. Grade point average calculated at the end of the first year of study; IR = Institutional Research

Statistical Analysis

All analyses in this study were conducted through the Statistical Package for the Social Sciences (SPSS 16.0). Specifically, content analysis needed for the first seven research questions was conducted using ANCOVA; research questions eight through ten were analyzed with logistic regression. This study sought to determine whether there was

a significant relationship among gender, generation status, ACT score, and living

environment and the two dependent variables which were academic achievement and

persistence for the cohort year studied. Statistical assumptions of independence,

normality, linearity, and homoscedasticity were tested using scatter plots and histograms

to assist with showing validity of the study (Pedhazur, 1997; Shadish, Cook, & Campbell,

2002). The Test of Between-Subjects Effects evaluated the dependent variables,

persistence and academic achievement separately.

The first seven questions addressed the relationship among gender, generation

status, and the living environment with first-year student academic achievement. ACT

scores served as a covariate and the cumulative GPA served as the dependent variable.

Analysis of Covariance (ANCOVA) was used to answer the first seven questions. The

main purpose of covariance in a non-experimental study is to adjust the posttest means

for initial differences among groups (Stevens, 2009). The treatment of the data was

divided into four parts. Prior to analyzing the data, assumptions were tested and found to

be met. First, descriptive statistics including frequencies, means, and standard deviations

of all variables were calculated. Second, multivariate tests were conducted to determine

the significance of interaction between the variables. Third, ANCOVA was conducted to

analyze the effect of the variables on academic achievement. The fourth treatment

conducted a logistic regression to determine the predictability of the independent

variables on persistence. Using ACT scores of the participants as the covariance adjusted

the academic achievement means to what the means would be if all started equally in this

variable.

Logistic regression is a statistical technique that allows the researcher to calculate the probability that an event will occur through an odds ratio. In a binary logistic regression with a single predictor variable, the prediction equation is $P(Y) = 1 / 1 + e^{-(b_0 + b_1 x_{1i})}$ where $P(Y)$ is the probability of the dependent variable occurring, e is the base of natural logarithms, b_0 represents the constant, b_1 represents the coefficient, and x_1 represents the predictor variable (Creswell, 2012). In logistic regression a predicted outcome is regressed on an explanatory variable or more commonly a set of variables (Pituch & Stevens, 2016, p. 434).

Questions eight through ten determined if the pre-college attributes, the independent variables, were significant predictors of persistence. The dependent variable, persistence, was a categorical variable which met the requirement for using a binary logistic regression to determine the likelihood of predicting a particular event by a set of predictors (Stevens, 2009). Table 7 outlines the research questions, variables, and statistical analysis conducted in this study.

Table 7

Summary of Research Questions, Variables, and Statistical Analysis

| Research Question | Variables | | Statistical Analysis |
	Independent	Dependent	
1	gender, generation status, living environment, ACT score	academic achievement	ANCOVA
2	gender, generation status, ACT score	academic achievement	ANCOVA
3	gender, living environment, ACT score	academic achievement	ANCOVA
4	generation status, living environment, ACT score	academic achievement	ANCOVA
5	gender, ACT score	academic achievement	ANCOVA
6	generation status, ACT score	academic achievement	ANCOVA
7	living environment, ACT score	academic achievement	ANCOVA
8	Gender	persistence	binary logistic regression
9	generation status	persistence	binary logistic regression
10	living environment	persistence	binary logistic regression

Note. The ACT score is the covariate for each of the first seven questions.

Limitations to the study

According to Schudde (2011) focusing a study on one single institution creates limitations to the ability to generalize the findings to a broader scope. The findings of this study could be helpful for other urban institutions similar in size and housing program with a Research I status. Further research is needed that includes other

institutions and data sets in order to expand the generalization scope. To avoid adding to the selection threat, the institution studied had multiple privately owned and managed student group housing communities (different owners) where students lived. The purpose of selecting a campus with multiple privatized student communities was to lessen the possibility that the policies and procedures of management within the privatized student community caused students in that community to have lower academic achievement or occurrences of persistence.

According to Grace-Martin (2013) power can be increased by increasing the sample size, increasing the alpha, conducting a one-tailed test, increasing the effect size, or decreasing the random error. The researcher planned to use three cohort years to allow a comparison of the results for two cohort years to be compared. However, there was only one year of data that met the criteria for this study. The sample size of the full cohort was large enough to support power of statistical tests; the 2011 cohort had 2,569 first-year students who enrolled in the fall semester. The concern regarding effect size was based on the discrepancy of the of cell sizes when the variables were combined for analysis. The discrepancy helped the researcher decide to measure all analysis for significance at the alpha .01 to minimize the inflated alpha error.

The validity of a study is measured by the appropriateness and significance of the study for the field by answering whether the research design and questions studied what was intended to be studied (Fraenkel & Wallen, 2009; Keppel & Wickens, 2004). One potential validity threat to the findings of this study was that the data set was based on where the students lived for the recorded snapshot date that the university used to report their statistics. If a student moved to a different type living environment after the

snapshot date, the data analyzed could have some students reported in the wrong environment. This concern initially was not determined substantial prior to the study because those living in the privatized student communities had 12 month landlord tenant leases that were binding for the academic year and they are not able to move out without substantial financial consequence. Therefore, if students were living in the privatized student communities as the study began and they persisted to the second year, it was assumed they were in that community the entire year. This potential selection threat was similar to the chance of mortality or loss of subjects regarding those students who withdrew from the university during the first year. The described attrition of some of the students was determined to not be substantial enough to affect the overall findings of the study. However, once the data were analyzed and a smaller matched sample was identified, the researcher decided to eliminate any student who had withdrawn or changed living environments during the year of study.

There are common metrics for institutions on how to provide services and a living environment that support the vision and goals of the institutions (CAS, 2014). There are also clear standards and core competencies that ACUHO-I has developed as guidelines to advise institutions on how to manage on-campus housing (ACUHO-I, 2016; Cawthon & Schrieber, 2012). While these metrics are not required, many institutional housing programs will use the guidelines as a basis for their program. The private developer who is managing student housing does not typically refer to the metrics provided by the profession; instead the focus for privately managed housing leans toward creating a social environment that allows students to have access to common areas such as pool areas, game rooms, and exercise rooms. Therefore, the manner in which developers manage

college student housing can be quite different based upon the vision and goals of the owners or developer companies. This difference created privatized housing environments that may have affected students' interaction within the community and the campus differently. The different methods for assisting and working with the residents of the privatized housing community may have added a construct threat to the overall data analysis and findings. The researcher determined that this created little significant difference between the privatized housing communities and therefore did not present a construct threat of validity for the study.

Results, implications, and recommendations for future research based on the analyses discussed in this chapter are presented in chapters four and five. Chapter four presents the results of the study as well as a discussion regarding the data set analyzed. Chapter five will discuss the findings and suggestions for further research to continue providing adequate evidence regarding the interaction effect of student living environments on academic achievement as measured by grades and persistence.

CHAPTER 4

RESULTS

This chapter presents the results from analyses described in chapter three. The discussion includes the descriptive statistics of the matched sample and a summary of the findings for each of the ten research questions. A summary of the overall findings regarding gender, generation status, and living environment is presented at the end of the chapter.

Sample Characteristics

The descriptive statistics are based on the overall 2011 cohort sample consisted of 2,569 first-year students enrolled at a comprehensive, Research I university located in a Midwest, urban environment. There were 1,243 male students (48%) and 1,326 female students (52%). Of the students in the cohort, 1,063 (41%) lived on-campus, 120 (5%) lived in privatized housing, and 1,386 (54%) commuted from single family homes or apartments. There were 434 students (17%) who self-reported to be first-generation students.

A matched sample was formed by identifying 309 (12%) first-time first-year students from the 2011 GRS cohort. All students selected for the matched sample were enrolled with full-time status during the fall semester in 2011 and were identified as part of the GRS cohort; each cohort was tracked to a six-year graduation rate. The sample included 100 men (32%) and 209 women (68%). There were 45 (15%) who self-reported

to be first-generation students. Each living area had 103 residents. The sample size was determined to be adequate to achieve the desired power (.80), and confidence level (95%) based upon the cohort of first year students for the year of the sample. Stevens (2009) presented a ratio of 15:1 (15 cases per independent variable to 1 dependent variable) as a minimum for achieving adequate power. This study exceeded that recommendation.

Seventeen of the students who began living in privatized housing moved to one of the other types of living environment during the year; there were students in each of the other types of living environment who changed to one of the other types as well (on-campus $n = 22$, commuting $n = 17$). Any student who changed living environment types during the first year was removed from the data prior to conducting the random sample to identify the 309 students for the matched sample.

Pre-college attributes and covariate

This study focused on two pre-college attributes that have been found to affect students' experiences as they transition into the college life and make decisions to persist: gender and generation status. The number of students in the matched sample was equally distributed among the three types of living environment. The ratio of male to female students and of first-generation to continuing-generation students was the same in all three types as well. Generation status was found to have a significant main interaction effect and gender and generation status were found to have a two-way significant interaction effect on academic achievement. Both gender and generation status were found to be a significant predictor of persistence as well.

Gender. Of the 309 students analyzed, 209 identified as female and 100 identified as male. The institution only asked for the two gender identifications during

the cohort year. The percentage of female (68%) to male (32%) students in the matched sample was a larger difference than the full data set of the GRS cohort with females (52%) to males (48%). Seventy women lived on-campus, seventy lived in privatized and sixty-nine were recorded as commuting; this breakdown of female students and their living environment matched the frequency percentages of females found in the full data set. There were thirty-three males living in each of the on-campus and privatized environments, and thirty-four males were noted as commuting.

Overall, males (88%) persisted at a higher rate than females (76%) and had higher cumulative GPA scores (males: *M*=2.80 and females *M*=2.72) regardless of the living environment and generation status. The largest difference in scores were with the first-generation students where males (*M*=2.67) had higher grades than females (*M*=2.21). More detailed information regarding persistence and cumulative GPA scores and the difference in results between gender and generation status is outlined in the persistence and academic achievement sections below.

Generation status. Only 45 students (15%) of the matched sample were classified as first-generation or coming from families where parents or grandparents had not attended college (University of Louisville, 2011). This was a similar percentage to the full cohort data set which reported 454 (17%) of the overall cohort as first-generation. Fifteen of the first-generation students lived within each of the types of living environment; 12 females and 3 males were noted to live in each (on-campus, privatized housing, and commuting).

Overall, continuing-generation students persisted (84%) at a higher rate than the first-generation students (58%) regardless of gender and living environment. The results

of cumulative GPA by generation status indicated continuing-generation students

(*M*=2.82) had an overall higher cumulative GPA than the first-generation students

(*M*=2.30). The discussion in the persistence and academic achievement sections will

analyze the results more fully and provide comparison data in analysis tables.

ACT score as the covariate. Use of ACT scores as predictors for student grades

and persistence has been common in research (Astin, 1993; Bean & Metzner, 1985; Kern,

et al., 1998; Schlinsog, 2010; Sparkman, 2012). A correlations analysis found the

covariate, ACT entry score, had significant correlation (p<.01) with the cumulative GPA

(.383) and persistence (-.244) which indicated validation of ACT entry score as a

covariate. The effect of ACT entry score is statistically significant on both persistence

[$F(1, 294)$=12.636, p<0.01, partial n^2=.041] and on academic achievement as measured

by cumulative GPA [$F(1, 294)$=44.066, p<0.01, partial n^2=.130].

Persistence and Academic Achievement.

A summary comparison of both the persistence and cumulative grades data

indicated that students who commuted persisted at the highest level while those living on

campus earned the highest cumulative GPA. Analysis of the interaction when

considering gender and generation status revealed different results. For example, first-

generation students persisted at the highest rate (73%) and earned the highest cumulative

GPA (*M*=2.5) if they lived in privatized housing during their first year. By contrast,

continuing-generation students persisted (84%) at the highest level and earned the highest

cumulative GPA (*M*=3.06) if they lived on-campus.

Persistence. Persistence for the overall study group to the second year was strong

with 247 of the 309 students (80%) returning the next fall and enrolling in classes.

Continuing-generation students persisted (84%) at a higher rate than first-generation

students (58%). Male students persisted to the second year (88%) at a higher rate than

female students (76%). Based on these results a male continuing-generation student was

much more likely to persist than females regardless of their generation status and male

first-generation students.

First-generation students persisted at the highest rate if living in privatized

housing (73%), the second highest rate if commuting (67%) and had the lowest rate if

living on-campus (33%). Continuing-generation students living on campus persisted

(85%) at the highest rate, while those living in either privatized housing or commuting

persisted (83%) at the same rate. Males, regardless of their generation status, had the

same percentage of persistence for living on campus and in privatized housing (91%)

while those commuting had (82%) persistence; none of the first-generation males living

in privatized housing persisted to the second year. Females, regardless of their

generation status, persisted at the highest rate if commuting (80%), the second highest if

living in privatized housing (77%), and the lowest if living on campus (71%). Tables 8

through 10 share some of the Persistence Descriptive Statistics discussed in this section.

Table 8

Gender Cross-Tabbed with Generation Status

			Persisted to 2nd Year	
Gender		Total	Yes	%
Female	First-generation	36	20	56%
	Continuing-generation	173	139	80%
	Total	209	159	76%
Male	First-generation	9	6	67%
	Continuing-generation	91	82	90%
	Total	100	88	88%
Total	First-generation	45	26	58%
	Continuing-generation	264	221	84%
	Total	309	247	80%

Table 9

Generation Cross-Tabbed with Living Environment

				Persisted to 2nd year	
Generation			Total	Yes	%
first-generation	Living environment	on-campus	15	5	33%
		privatized	15	11	73%
		commuting	15	10	67%
	Total		45	26	58%
continuing-generation	Living environment	on-campus	88	75	85%
		privatized	88	73	83%
		commuting	88	73	83%
	Total		264	221	84%
Total	Living environment	on-campus	103	80	78%
		privatized	103	84	82%
		commuting	103	83	81%
	Total		309	247	80%

Table 10

Gender Cross-Tabbed with Living Environment

				Persisted to 2nd Year	
Gender			Total	Yes	%
Female	Living environment	on-campus	70	50	71%
		privatized	70	54	77%
		commuting	69	55	80%
	Total		209	159	76%
Male	Living environment	on-campus	33	30	91%
		privatized	33	30	91%
		commuting	34	28	82%
	Total		100	88	88%
Total	Living environment	on-campus	103	80	78%
		privatized	103	84	82%
		commuting	103	83	81%
	Total		309	247	80%

Academic Achievement (Cumulative GPA). The cumulative grade point average (GPA) mean for the matched sample of the 2011 GRS cohort was 2.75 with a standard deviation of 0.96. Males earned a higher cumulative GPA than the females. Continuing-generation students earned a higher GPA than the first-generation students. Continuing-generation females had a slightly higher GPA than the continuing-generation males; first-generation males earned a higher GPA than the first-generation females.

Students living on campus regardless of generation status or gender identity earned a higher GPA (M=2.91) than those commuting (M=2.74) and those who lived in privatized housing (M=2.59). Once analysis compared generation status and gender, the results varied. First-generation students who lived in privatized housing had the highest cumulative GPA (M=2.50) at the end of the first year, while those who commuted had the second highest (M=2.39) and those who lived on-campus had the lowest cumulative GPA

(M=2.02). In comparison to the first-generation students, the continuing-generation students who lived on-campus had the highest cumulative GPA (M=3.06); the students who were commuting had the second highest (M=2.80) and those who lived in privatized housing recorded the lowest GPA (M=2.61).

The results of cumulative GPA by gender of students who identified as first-generation indicated that both males (M=2.87) and females (M=2.41) who lived in privatized housing had the highest cumulative GPA over those first-generation students in other types of living environment. The first-generation males who lived on-campus and those who were commuting had the same cumulative GPA (M=2.57) with the standard deviation scores varying between the two groups: on-campus and commuting. First-generation females who were commuting had the second highest GPA (M=2.34) for their group and those who lived on-campus had the lowest overall cumulative GPA (M=1.88) of all scores earned by all groups.

Continuing-generation females who lived on campus had the highest cumulative GPA (M=3.17) at the end of the first year; those females commuting had the second highest GPA (M=2.81) and those living in privatized housing had the lowest cumulative GPA (M=2.51). Continuing-generation males who lived on campus had the highest GPA (M=2.87); those males living in privatized housing had the second highest GPA (M=2.81) and the males who were commuting had the lowest cumulative GPA (M=2.77). Table 11 presents the results of the mean and standard deviation of the cumulative GPA scores at the end of the first year for the 2011 cohort.

Table 11

Academic Achievement as Measured with Cumulative GPA Descriptive Statistics

Gender	Living Environment	First-Generation Students			Continuing-Generation Students			All Students by Gender		
		M	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*
Female	on-campus	1.88	1.18	12	3.17	0.66	58	2.95	0.91	70
	Privatized	2.41	0.99	12	2.51	0.90	57	2.49	0.91	69
	Commuting	2.34	0.84	12	2.81	1.05	56	2.73	1.03	68
	Total	2.21	1.01	36	2.83	0.92	171	2.72	0.96	207
Male	on-campus	2.57	1.33	3	2.87	0.76	30	2.84	0.80	33
	Privatized	2.87	0.29	3	2.81	1.15	30	2.82	1.10	33
	Commuting	2.57	1.62	3	2.77	1.02	31	2.76	1.06	34
	Total	2.67	1.07	9	2.82	0.98	91	2.80	0.99	100

Statistical Analysis

Stevens (2009) stated that, "Analysis of covariance rests on the same assumptions as analysis of variance plus three additional assumptions regarding the regression part of the covariance analysis" (p. 293-294). The additional three include linear relationship between the dependent variable and to covariate, homogeneity of the regression slopes, and that the covariate is measured without error. Prior to conducting the analysis of covariance and the logistic regression analysis, assumptions were tested to ensure they were not violated. Visual inspection of a scatterplot indicated a linear relationship between the variables. There was homoscedasticity and normality of the residuals. The predictor variables (gender, generation status, and living environment) were not continuous, therefore linearity was not violated.

The assumption of homogeneity of variances was violated for both grade point average (p=.036) and persistence (p=.000) as assessed by Levene's test for equality of

variances. Although the results of the Levene's test indicated inequality of variances, the sample sizes were the same size therefore the violation was not as serious since the "homogeneity of variance is conditionally robust if the group sizes are equal or approximately equal with the largest/smallest <1.5" (Stevens, 2009). There homogeneity of regression slopes assumption was met since the interaction effect between the independent variables and grades was not statistically significant $F(2,294) = .594$, $p=.553$.

The cell sizes of the various combinations of variables were discrepant in size. The matched sample produced equal cell sizes for each type of living environment (n=103); however, the cell sizes when gender and generation status were considered were much smaller. The continuing-generation cells for all types of living environment (n=88) were much larger than the first-generation cells for each type of living environment (n=15). Table 12 presents the different sized cells regarding gender, generation status, and living environment. Due to the extreme discrepancy in cell sizes, all data were tested for significance at the alpha .01 which minimizes an inflated alpha error rate for the study.

Table 12

Crosstab: Sample Cell Size for Independent Variables

Gender	Living Environment	First-generation N	Continuing-generation N	All students N
Female	on-campus	12	58	70
	privatized	12	58	70
	commuting	12	57	69
	Total	36	173	209
Male	on-campus	3	30	33
	privatized	3	30	33
	commuting	3	31	34
	Total	9	91	100

Analysis of Research Questions

In consideration of the different variables that may interact with first-year student academic achievement, the researcher analyzed the data through different combinations of variable interaction. There were ten research questions asked for this study in the following manner: (a) one three-way, (b) three two-way, (c) three main effect interaction, and (d) three predictor based questions. The first seven questions were designed to identify the interaction between the independent variables and grades. These were analyzed through use of an ANCOVA. Questions eight through ten considered whether each of the independent variables could predict persistence. One note made from the analysis for each question is that the reported effect size from each analysis is less than the 1988 Cohen convention for a small effect size ($n^2 = .01$) as found in Stevens (2009). The test for homogeneity of variances produced a Levene's statistic that showed non-

significant results (F=1.923, p>.01) indicating the variance of GPA is equal across groups and the homogeneity variance assumption was not violated.

Questions 1 – 7:

Questions one through seven were designed to test the effects of gender, generation status, and living environment on academic achievement. Analysis of covariance (ANCOVA) was performed with difference combinations of the variables to determine interaction and main interaction effects of the variables on academic achievement. The assumptions for conducting an ANCOVA were tested and met. The analysis of the results with an adjusted alpha level (p=.01) found no statistically significant results.

Three-way analysis: Research Question 1

Question 1. *Is there a significant three-way interaction effect of gender, generation status, and living environment on academic achievement adjusting for entry ACT scores?*

The Test of Between-Subjects Effects with values $F(2,307)=0.594$, $p>.01$, partial $n^2=.004$ indicated there was no statistically significant interaction of gender, generation status, and living environment on academic achievement measured by cumulative GPA. Table 13 presents the interaction effect results for each of questions one through seven.

Table 13

Interaction Effect of Independent Variables on Cumulative GPA

Source	SS	Df	MS	F	Sig	Partial n2
Corrected Model	60.828	12	5.069	6.573	0.000	0.212
Intercept	2.248	1	2.248	2.914	0.089	0.01
ACT Entry	33.984	1	33.984	44.066	0.000	0.13
G X GS X LE	0.916	2	0.458	0.594	0.553	0.004
G X GS	3.300	1	3.300	4.279	0.039	0.014
G X LE	0.031	2	0.015	0.020	0.980	0.000
GS X LE	1.554	2	0.777	1.008	0.366	0.007
Gender	0.777	1	0.777	1.008	0.316	0.003
Generation Status	0.703	1	0.703	0.912	0.340	0.003
Living Environment	0.372	2	0.186	0.241	0.786	0.002
Error	226.739	1	2.248	2.914	0.089	
Total	2607.330	307				
Corrected Total	287.567	306				

Note: G = gender; GS = generation status; LE = living
environment

Analysis of Covariance: Research Questions 2 through 4

Three two-way interaction effect questions explored different combinations of the

independent variables and the interaction effect of the combinations on cumulative GPA.

The Levene statistic (F = 1.923, *p* > .01) was not statistically significant indicating that

the homogeneity variance assumption of the three independent variables was not violated.

Question 2. *Is there a significant two-way interaction effect between gender and*

generation status on academic achievement adjusting for entry ACT score?

The results of the Tests of Between-Subjects Effects $F(1, 307)=4.279$, $p>.01$, partial $n^2=.014$ indicated that after adjusting for ACT entry score there was not a statistically significant interaction effect between gender and generation status on academic achievement as measured by cumulative point average.

Question 3. *Is there a significant two-way interaction effect between gender and living environment on academic achievement adjusting for entry ACT score?*

The results of the Test of Between-Subjects Effects indicated that after adjusting for ACT entry score there was not a statistically significant interaction effect between gender and living environment on academic achievement as measured by cumulative point average, $F(2, 307)=.020$, $p>.01$, partial $n^2=.000$.

Question 4. *Is there a significant two-way interaction effect between generation status and living environment on academic achievement adjusting for entry ACT score?*

The results of the Test of Between-Subjects Effects indicated that after adjusting for ACT entry score there was not a statistically significant interaction effect between generation status and living environment on academic achievement as measured by cumulative point average, $F(2, 307)=1.008$, $p>.01$, partial $n^2=.007$.

Main effect interaction analysis: Questions 5 through 7

Questions five through seven were designed to test whether there is a significant main effect of the independent variables (gender, generation status, and living environment) on academic achievement as measured by cumulative GPA. One-way ANCOVA analysis was conducted to determine whether there was a significant main effect with each of the independent variables.

Question 5. *Is there a significant main effect of gender on academic achievement*

adjusting for entry ACT score?

Prior to the main analysis, the homogeneity of variance assumption was checked

via Levene's test ($F = .015$, $p > .01$) and upheld. The results from an ANCOVA analysis

showed that the main interaction effect of gender on academic achievement was not

statistically significant, $F(1,307)=1.008$, $p>.01$, partial $n^2=.003$.

Question 6. *Is there a significant main effect of generation status on academic*

achievement adjusting for entry ACT score?

Prior to the main analysis, the homogeneity of variance assumption was checked

via Levene's test ($F = 1.898$, $p >.01$) and upheld. The results from an ANCOVA analysis

showed that the main interaction effect of generation status on academic achievement

was not statistically significant, $F(1,307)=.912$, $p >.01$, partial $n^2=.003$.

Question 7. *Is there a significant main effect of living environment on academic*

achievement adjusting for entry ACT score?

This represents the primary question of the study to determine if living

environment contributes to the overall academic success of a first-year student. Prior to

the main analysis, the homogeneity of variance assumption was checked via Levene's

test ($F = 1.337$, $p >.01$) and upheld. The results from an ANCOVA analysis showed that

the main interaction effect of living environment on academic achievement was not

statistically significant, $F(2,304)=.241$, $p >.01$, partial $n^2=.002$.

Logistic Regression: (Questions 8-10)

A binomial logistic regression was conducted for questions eight through ten in

order to determine the significance of each of the independent variables (gender,

generation status, and living environment) as a predictor of the dependent variable,

persistence. Persistence was coded dichotomously (yes = 1, no = 0). Gender, generation

status, and living environment were entered in Block 1 and they significantly improved

the prediction model according to the omnibus tests of model coefficients (x^2 (1) =

18.831, $p < .001$). The classification table of the null model predicted persistence with

80% accuracy. The amount of variance explained in this model is small (Cox & Snell R^2

= .059, Nagelkerke R^2 = .093) indicating that only 6 to 9% of the variance of persistence

was explained by the three variables (gender, generation status, and living environment).

Table 14 presents the results of the logistic regression and shows those variables that are

significant predictors of persistence.

Table 14

Predictors of Persistence

Variable	B	S.E.	Wald	Sig.	Exp(B)
Constant	0.722	0.555	1.692	0.193	2.059
Gender	-0.735	0.355	4.294	0.038	0.480
Generation status	1.249	0.349	12.817	0.000	3.488
Living environment	0.094	0.180	0.274	0.600	1.099

Note: gender = female(1); generation status = first-generation
students(1); living environment(1) = on-campus

Question 8. *Is gender a significant predictor of persistence adjusting for entry*

ACT score?

A binary logistic regression analysis was conducted to examine if gender was a

significant predictor of persistence. Persistence was measured by the number of students

who returned to the second year in the next fall semester. The percentage for persistence was determined from a frequency crosstab table. The Hosmer-Lemeshow test was not significant, suggesting that the data adequately fit the model (x^2 =1.433, p =.964). The results of the logistic regression showed that the model was statistically significant χ^2 = 18.831, df = 3, $p < .01$). The Wald statistic (4.294, p>.01) indicated gender was not a statistically significant predictor of persistence.

Question 9. *Is generation status a significant predictor of persistence adjusting for entry ACT score?*

A binary logistic regression analysis was conducted to examine if generation status was a significant predictor of persistence. Persistence was measured by the frequency data on students who returned the second year and registered for classes. The Hosmer-Lemeshow test was not significant, suggesting that the data adequately fit the model (x^2=1.319, p=.933). The results of the logistic regression showed that the model was statistically significant χ^2 = 18.831, df = 3, $p < .01$). The Wald statistic (12.817, p<.01) indicated that generation-status was a statistically significant predictor of persistence. The classification table for the final model only predicted with 80% accuracy so generation status is a weak predictor and should be interpreted with caution. The log odds ratio for the generation status effect was 3.488, indicating that the odds for continuing-generation students to persist are 3.49 times the odds of first-generation students. The odds of persistence increased 1.25 for first-generation students for each unit increase in generation status.

Question 10. *Is living environment a significant predictor of persistence adjusting for entry ACT score?*

A binary logistic regression analysis was conducted to examine if living environment was a significant predictor of persistence. Persistence was measured by the frequency data on students who returned the second year and enrolled in classes. The Wald statistic (.274, p>.01) indicates that living environment was not a significant predictor. The Hosmer-Lemeshow test was not significant, suggesting that the data adequately fit the model (x^2=1.433, p=.964). The results of the logistic regression showed that the model was not statistically significant $\chi^2 = 18.831$, df = 3, $p > .01$).

Overall findings from study questions

The questions for this study considered the interaction effects of the independent variables (gender, generation status, and living environment) both independently and in various combinations with each other on persistence and academic achievement. Academic achievement was measured by cumulative grade point average at the end of the first year. None of the variables were found to have statistically significant interaction effects with academic achievement. Generation status was found to be a statistically significant predictor of persistence; gender and living environment were not statistically significant predictors of persistence.

The hypotheses as noted in chapter one all noted the researcher would find a significant interaction of gender, generation status, and living environment for academic achievement. The researcher decided to test the hypotheses in multiple ways by designing three-way, two-way, and main effect interaction with the three independent variables. After reviewing the data, the findings indicated that the hypotheses for questions one through seven were found to be false. The hypotheses for questions eight through ten noted that all three independent variables (gender, generation status, and

living environment) would be significant predictors of persistence. Generation status was found to be statistically significant, while gender and living environment were not.

The results from the individual questions of this study indicated that living environment does not have a statistically significant effect on academic achievement and does not serve as a significant predictor of persistence. Future research may be able to identify specific factors of opportunity available within the living environment that do have significant effect on academic achievement and persistence. Specific findings for the questions are noted in Table 15.

Table 15

Results Table: Research Questions and Significance

Question	Interaction effect	Results
1	3-way of gender, generation status, and living environment on academic achievement	Not significant
2	2-way of gender and generation status on academic achievement	Not significant
3	2-way of gender and living environment on academic achievement	Not significant
4	2-way of generation status and living environment on academic achievement	Not significant
5	Main effect of gender on academic achievement	Not significant
6	Main effect of generation status on academic achievement	Not significant
7	Main effect of living environment on academic achievement	Not significant

Question	Prediction of Persistence?	Results
8	gender as predictor of persistence	Not significant
9	generation status as predictor of persistence	Significant
10	living environment as predictor of persistence	Not significant

Summary of Results

The results of this study did not find that any of the independent variables had a statistically significant interaction effect on cumulative GPA. Generation status was the only variable found to be a statistically significant predictor of persistence. The non-

significant results limit the generalization and interpretation of the findings. Any discussion of the data from descriptive statistics and frequencies should be made cautiously because of the lack of significance.

Knowing the results were not significant and should not be generalized, there were interesting findings from the descriptive statistics and frequencies. Some of the findings support previous research regarding student success through grades, persistence, and living environment (Astin, 1993; Barnhart & LeMaster, 2013; Bozick, 2007; Murtaugh, et al., 1999; Novak, 2008; Purdie & Rosser (2011); Turley & Wodtke, 2010). First, analysis indicated that when first-year students are observed as a full cohort regardless of generation status and gender identity that students who live in on-campus housing for their first year at college have higher grades (*M*=2.91, *S.D.* =.87024, *n*=103) than those who do not. The means and standard deviation scores indicated that when analyzing the group as a whole, those commuting have higher grades than those who are living in the privatized housing off campus.

Frequency data on persistence indicated that students who lived on campus persisted at a lower rate (78%) than those who did not (privatized housing = 82% and commuting = 81%). This finding suggested support of the results found by Turley and Wodtke (2010) that living environment is not always a significant indicator of student persistence in the first year. Table 16 presents the results of this study.

Table 16

Matched Sample GPA and Persistence Descriptive Statistics

Dependent variable	Living Environment	*M*	*SD*	*N*
GPA	on-campus	2.912	0.870	103
	privatized	2.594	0.984	102
	commuting	2.739	1.031	102
	Total	2.749	0.969	307
		Persisted	%	*N*
Persistence	on-campus	80	78	103
	privatized	84	82	103
	commuting	83	81	103
	Total	247	80	309

Second, the results suggested that different sub-culture groups of students have varying levels of success in different types of living environment. This finding supported studies that suggest student success and persistence can be affected differently by the living environment for different sub-groups of students such as gender, ethnicity, and generation status (Hotchkiss, et al., 2006; Sparkman, et al., 2012; Turley & Wodtke, 2010). When the descriptive statistics considered the specific subgroups of gender and generation status, the interaction results changed. This study did not find a significant interaction between living environment, generation status, and gender for cumulative GPA.

Female students regardless of their generation status who lived on campus persisted at the lowest level of other living environments (71%) yet earned the highest cumulative GPA (*M*=2.91). When analyzed by generation status, first-generation females persisted at the highest percentage (73%) and earned the highest cumulative GPA (*M*=2.40) if they lived in privatized housing. In contrast, continuing-generation females

141

persisted the highest (85%) and earned the highest cumulative GPA (M=3.17) if they lived on campus over the other living environment types.

Males, regardless of their generation status, persisted the same (91%) if living on campus or in privatized housing, but made the highest cumulative GPA (M=2.84) if living on campus. The results indicated a difference between the first- and continuing-generation males for cumulative GPA; first-generation males who lived in privatized housing reported the highest cumulative GPA (M=2.87) while the continuing-generation reported a higher cumulative GPA if living on campus (M=2.87).

Results of this study indicated that when observing the entire cohort, students who lived in privatized housing persisted at the highest level, but that students living on campus persisted at the lowest level of the living environment types, therefore, the assumption made that students who live in group environments may persist at a higher rate was only partially met.

Chapter Five will offer a discussion on the significance and potential implications of the results presented in this chapter. Discussion will include the limitations of the study that may affect the generalization of the results and recommendations. Recommendations will be made both to applicability of the results as evidence for institutions of higher education and for future research.

CHAPTER 5

DISCUSSION

The purpose of this research was to examine the effect of campus living

environment on academic achievement and persistence of first-year students. This study

included evidence of the new paradigm of campus housing environment which added

privatized student housing communities located off campus. One primary purpose of this

study was to provide a basis for future research regarding the relationship between

privatized housing and first-year student academic achievement and persistence.

Research on the effect of these off-campus privatized student communities is

essential to inform institutions of the potential benefits and consequences of working with

this new environment for campus housing. By adding this information, institutional

administrators, housing professionals, and the privatized owners can learn how to provide

supportive living environments for the varying needs of the diverse student populations

found on college campuses to support student academic achievement.

Living on campus provides a continual awareness of events and activities as well

as exposure to higher levels of diverse thought and culture; students who choose to live

on campus will become more involved (Kuh, et al., 2005, p. 38). Kuh, et al., (2005)

found living on campus is associated with persistence and student success and that

residence halls help students develop social connections with peers who are dealing with

similar challenges and difficulties. While living on campus has been viewed a positive

influence on student success, there has been little research that identifies what factors

involved with living on campus significantly contribute to student persistence and academic success (Turley & Wodtke, 2010; Whalen, et al., 2009-2010). Students' satisfaction in the condition and type of housing facility does not always translate to persistence (Nayor, 2009). One factor related to living environment, participating in living learning communities, has been found to have positive impact on academic achievement (Garrard, 2006; Hotchkiss, et al., 2006).

Research regarding living environment has typically considered commuting to campus as the contrast to living on campus. The emergence of privatized student apartments has evolved as a new paradigm of campus housing and should be studied separately from students who commute to campus from individual living areas such as family homes and apartments not associated with student group living communities.

A secondary benefit of this research was to determine how different pre-college characteristics such as generation status and gender interact with living environment when measuring academic achievement. The three independent variables considered in this current study included living environment, gender, and generation status. There were ten research questions analyzed for this study; seven questions were designed to determine whether there was an interaction effect between the independent variables and academic achievement as measured by cumulative GPA at the end of the first year, and three determined whether each of the independent variables were significant predictors of persistence from the first year of study to the second. Results of the study indicated that none of the variables had a statistically significant interaction effect on cumulative grades and that only generation status was a statistically significant predictor of success. The

non-significant results neither confirmed nor denied the hypotheses and assumptions of this study and cannot be generalized beyond the actual study to other institutions.

This chapter provides discussion regarding the results found in this study with some speculation regarding the findings and how they may inform campus professions on the influence that living environment, gender, and generation status may have on first-year student persistence and grades. One theme of discussion for each section in this chapter is that further research should be conducted to identify the factors within the living environment that does provide support for student academic achievement and persistence. Additional factors were not identified in this study and therefore are not reported as part of the findings. Based on literature, programmatic factors such as living within themed living areas or living learning communities has been identified as making a difference in student persistence and academic progress (Kuh, 2008; Kuh, et al., 2005). Physical factors such as the availability of private bedrooms and baths vs sharing a bedroom/bath with others, the requirement for participating in the campus dining plan vs preparing own meals, and the ratio of student staff trained to help students acclimate to resident students are not discussed in the literature reviewed for this study. The recommendations to identify factors through future studies could include any of these examples or additional items.

Each heading will offer a summarization of the results as well as how the results, though non-significant, may apply or not apply to the variable. Additionally, there will be discussion on the ten questions asked in the study.

Living Environment

Analysis of the data indicated there was not a statistically significant interaction effect of living environment on academic achievement, while the regression analyses conducted also indicated that living environment was not a statistically significant predictor of persistence. Therefore, any interpretation of the frequencies and data results must be done with caution and should not be generalized beyond the study.

One rationale of on-campus housing has historically been that living on campus during the first year matters because it offers the student a full experience during their academic year including exposure to faculty and staff, campus events, and intentional experiences within the residence hall. Intentional experiences within the halls include area programs that help students become acquainted with each other, assistance with roommate living and mediation, regular contact with student leaders who are trained on campus resources, and events designed to help students acclimate to the campus (Schroeder & Mable, 1994).

Some of the findings of this study indicated agreement of past research that suggests that, in general, students have higher grades if they live on campus (Astin, 1993; Barnhart & LeMaster, 2013; Bozick, 2007; Murtaugh, et al., 1999; Novak, 2008; Purdie & Rosser, 2011; Turley & Wodtke, 2010; Webber, et al., 2013). Students living on campus, regardless of their gender and generation status, reported higher cumulative GPA scores (M=2.91) than those students who commuted (M=2.74) or lived in privatized housing (M=2.59). The data suggested that males and females as well as first-generation and continuing-generation students reported different results in cumulative GPA within different living environments from the overall sample. When the data considered the

generation status of the students, the results suggested that first-generation students had higher grades if living off campus in the privatized housing (female: M=2.41; male: M=2.87) than if living on campus or commuting. These findings agree along with the persistence findings with Turley and Wodtke (2010) that first-generation students are affected differently by the types of living environment.

Frequency data on persistence indicated that students living in privatized housing and commuting persisted at a higher rate than those who lived on campus. The on-campus data included the residence halls owned by the foundation and managed by a P3 agreement because the management agreement required the P3 developer to manage the halls in tandem with the institution to provide as common experience as possible between all halls located on campus. Policies and procedures, staff selection and training, student behavior response and student assignments and billing were all accomplished as a joint effort in the on-campus halls. These results did not support evidence found by Novak (2008) who determined that students living on campus in P3 managed halls are more satisfied and persist at a higher rate than those living off campus in privatized housing not associated with the institution. However, these results somewhat supported research by Turley and Wodtke (2010) that found that the type of residence during the first year of college does not have a significant effect on first-year academic performance for all students and that different groups of students are affected differently by their living environment. These results of the current study did not clearly replicate other studies when trying to generalize the effect of the living environment on academic achievement and persistence.

The persistence data was surprising because it did suggest that students in general, but especially first-generation students, may not do as well in on-campus housing as other types of housing. Previous research has stated that first-generation students could be at higher risk for not persisting and added that first-generation students who live on campus have higher persistence rates than those who do not (Fike & Fike, 2008; Martin, et.al, 1999; Soria & Stebleton, 2012). These current results on persistence may have been influenced by the lower sample numbers of first-generation students and the limitation of one year of available data.

Evidence regarding academic success and living environment are important for college campuses and on-campus housing programs in order to provide evidence of the living environment effect to the campus constituents and to students and their families. The findings in this current study seemed to indicate that different student groups have different levels of success depending upon the living environment. While the results were not statistically significant, the patterns found in the data indicated that institutions can no longer rely on the generalization that living on campus matters without determining what factors contribute to academic achievement.

Institutions should become aware of the factors that do contribute to student academic achievement to be able to determine why the living environment makes a difference on their campus as they market on-campus living to students and families. By identifying the various factors that support student academic achievement, administrators can focus programs and activities that enhance the opportunities for student success and persistence. Knowing the factors in the living environment that do contribute to student

academic achievement will also inform housing professionals in their program

development and community design.

Research evidence regarding any interaction of living environments and student

persistence and grades are important to institutions of higher education because campuses

try to "sell" their campus culture of academics and student success to prospective

students and donors. It is important to begin updating campus housing programs to

address the variety of needs that different student groups such as first-generation students

bring to campus living. Campus professionals should become aware of their own

institutional data that informs their message to prospective students and families

regarding living on campus. It is important that future studies try to obtain larger sample

and cell numbers and multiple year data to determine a statistically significant interaction

effect with persistence and first-generation students living on campus. If this study is

replicated and first-generation students do not fare well on campus, in-depth analysis will

be needed to determine what factors of living on campus may not be present to help

support this group of students.

Background Characteristics

The literature review identified several pre-college attributes that have been

shown to have an interaction effect on student academic success such as gender,

generation status, socioeconomic status, ethnicity, and gender-identity. The researcher

decided to limit the pre-college characteristics because there was concern regarding the

availability of data to produce a sample size that would be sufficient. Once the data was

obtained and frequencies were analyzed, there was a much smaller cell size of students

living in the privatized environment in than the on-campus and commuting groups. The

two pre-college characteristics selected (gender and generation status) were self-reported in all cases of the sample. Future studies would be strengthened by adding in additional pre-college characteristics in order to determine how other key groups of students are accomplishing academic achievement.

Gender. Gender did not have a statistically significant interaction effect with academic achievement as measured by grades, nor was it a significant predictor of persistence. The non-significant results limits discussion to only a general review of the frequencies and descriptive statistics that indicated patterns of grades and persistence.

Enochs and Roland (2006) addressed how students adjust to college life. They indicated that generally males adjust to college life easier than females regardless of living environment and that female students are more likely to experience loneliness and social isolation, to have a more difficult time fitting into the college environment, and are less likely to be involved in campus activities at the beginning of their college life.

Males persisted at the same percentage (91%) if living on campus or in privatized housing, and the lowest level (82%) if commuting. According to Enochs and Roland (2006) male students tend to seek social environments around specific events and activities. Clark (2015) found that males seek an experience that offers both learning and academic participation as well as social and group activity. One indication of the current study may be that by living in group-style housing whether on campus or in privatized, male students may be more aware of opportunities to become involved in social and recreational events that are not just associated with the living environment. This activity helps males accomplish the socialization needed to adjust to campus life.

150

Females, regardless of their generation status, persisted at the highest level if commuting (80%) and the second highest (77%) if living in privatized housing. Females persisted at the lowest levels if living on campus (71%). Some of the literature suggests females adjust to college life more fully when they are able to have social interactions that become meaningful (Enochs & Roland, 2006), and one of the reasons that research has explained the positive relationship between living on campus and retention is that the group living environment adds to a student's ability to become acquainted with the campus and fellow students (Blimling, 1993; Kuh, 2008). However, the findings of this study do not follow historical research regarding first-year student persistence and living on campus.

Some of the results from the current study can be partially explained by the work of Turley and Wodtke (2010) who discussed that different subsets of students are affected differently by living environments. As mentioned before, this study was limited to data from one campus for one cohort year and small cell sizes of the variables. Future data results may differ if larger samples and cell sizes are obtained and more longitudinal data over multiple years is reviewed. Further study should be conducted to explore what factors within the living environment significantly support the differences experienced by females and males.

Generation status. Generation status did not have a statistically significant interaction effect with academic achievement as measured by cumulative grades. While generation status was found to be a significant predictor for persistence, the significance was considered weak or non-practical. There were several limitations to the data and results for generation status. Another concern to be noted is that the cell sizes for some

of the groups in the study were much smaller than others. There were 45 students (15%) who reported to be first-generation in the matched sample for this current study. Of the 45 students, 26 (12% of the sample) were female and 9 (3%) were male. Generalizing results for 15% of the overall sample with even smaller percentages within the variables should be done with caution. Therefore, while generation status can be reviewed with some consideration to significance for persistence, the results should not be considered as generalizable to other studies and institutions. There were interesting notes to consider from the frequencies and descriptive statistics.

First-generation students tend to have lower cumulative GPA scores at the end of the first year and persist to the second year at a lower rate than continuing-generation students (Choy, 2001; Longwell-Grice & Longwell-Grice, 2008; Morrow & Ackermann, 2012; Pike & Kuh, 2005; Schlinsog, 2010; Soria & Stebleton, 2012). The results for this current study supported the previous research by showing that continuing-generation students when analyzed as a group persisted at a higher levels and had higher cumulative GPA scores than the first-generation students regardless of gender and living environment.

The findings in the current study differed when generation status and gender were considered. First-generation females reported the highest GPA (M=2.41) if living in privatized housing, the second highest (M=2.34) if commuting, and the lowest (M=1.88) if living on campus; the continuing-generation females reported the highest GPA (M=3.17) if living on campus, the second highest (M=2.81) if commuting, and the lowest (M=2.51) if living in privatized housing. First-generation males had similar results in living environments as the females; those first-generation males living in privatized

152

housing reported the highest cumulative GPA scores (*M*=2.87) and the same scores if living on campus or commuting (*M*=2.57). Continuing-generation males reported the highest GPA scores (*M*=2.87) if living on campus, the second highest (*M*=2.81) if living in privatized housing, and the lowest cumulative GPA (*M*=2.77) if commuting.

First-generation males (*M*=2.67) reported a higher mean for cumulative GPA scores than the first-generation females (*M*=2.21), however, when analyzing the continuing-generation student grades, the mean scores had less difference in grades between the males (*M*=2.82) and the females (*M*=2.83). The higher mean GPA scores for continuing-generation is discussed in previous research as being partially due to the level of knowledge and experience of campus life that the student brings to the institution due to family influence, and that this prior exposure helps the continuing-generation students transition more quickly and settle into the academic routine more easily than first-generation students (Liu, 2016; Martin, Swartz-Kulstad, & Madson, 1999; Reason, Terenzini, & Domingo, 2006).

Pike and Kuh (2005) found that first-generation students are less likely to live on campus, to develop strong relationships with other students, and to become involved in campus activities than the continuing-generation students. They continued to state that first-generation students are less engaged overall and less likely to "successfully integrate diverse college experiences" (p. 289). Their article also stated that the first-generation students who do live on campus persist at a higher level than those who do not.

This current study partially supported the concept of the Pike and Kuh (2005) that first-generation students tend to not live on campus finding that 58 (83%) of the total females living on campus and 30 (91%) of the total males living on campus were

153

continuing-generation students. The Pike and Kuh (2005) discussion regarding those first-generation students who do live on campus was partially supported by the current study. First-generation students persisted at the highest level (73%) if living in privatized housing, the second highest (67%) if commuting and the lowest (33%) if living on campus. However, none (0%) of the first-generation males who lived in privatized housing persisted to the second year in this current study indicating that the females were more successful in privatized housing than the males, and that first-generation males living on campus or who commuted to campus were more successful than those in privatized housing.

Since there was no statistically significant interaction of living environment on grades in this current study it may be suggested that other student-based factors such as self-motivation and sense of belonging as discussed by Morrow and Ackermann (2012) may be contributing influences. In their research, Morrow and Ackermann (2012) looked at why a student is motivated to attend the institution and the level of adjustment students made to the campus climate. They suggested that continuing-generation students tend to adjust to being at college easier than first-generation students because of their exposure to the campus environment and culture prior to arriving as a student. First-generation students who live on campus may find themselves overwhelmed with living in close quarters with other students and the number of opportunities presented from the beginning of the term. This adjustment to so many changes as they arrive on campus requires first-generation students to spend more energy on the social environment than focusing on their academic studies.

First-generation students tend to have less motivation to graduate as they enter college than continuing-generation students (Berger, 1997; LaNasa, Olson, & Alleman, 2007). Added to the overwhelming number of activities and experiences students find in their first weeks of campus life, those living in on-campus housing must also adjust to sharing a sleeping room with another person that is most likely a stranger and in many cases share a community bath with a large number of residents. Students are coming from home environments that provide private bedrooms among other amenities that are shared with only the immediate family. Privatized housing typically provides an apartment environment that offers single bedrooms and baths (or baths shared with one other resident) that resembles the student's pre-college experience more than a typical on-campus hall that shares space with multiple people.

Interpreting the differences between the overall sample results and the findings when gender and generation status is considered is difficult in this study. Further research should be conducted with larger and more diverse sample data to see if these results can be replicated. Future studies should also try to assess the physical amenities of living environments and what is needed to support the different groups of students.

Dependent Variables

The dependent variables were selected based on the literature review. Both academic achievement and persistence are factors that higher education institutions are measured by for performance standards. Future research may want consider a longitudinal study of one cohort from entry to graduation considering type of living environment to include other important standards for institutions. Findings for these dependent variables are discussed below.

Academic Achievement. This study was conducted to determine if there was a significant interaction effect of living environment on student academic achievement as measured by cumulative grade point average and persistence. None of the independent variables studied (gender, generation status, and living environment) for interaction effect on academic achievement were found to be statistically significant. The non-significance limited interpretation of the findings.

A review of the gender and generation status variables in the current study found that first-generation males had higher cumulative GPA scores (M=2.67) at the end of the first year than the first-generation females (M=221). The cumulative GPA scores for first-generation students and living environment were not what was predicted in the original hypotheses for this study, indicating: (a) first-generation students living in privatized housing off campus reported the highest cumulative GPA at the end of the first year; (b) those commuting from other locations reported the second highest mean; and (c) the students living on campus had the lowest cumulative GPA mean for the year. These results did not support previous research regarding those first-generations students who do live on campus tend to have higher grades (Pike & Kuh, 2005).

Cumulative GPA grades are one factor that determines the student's academic standing within the college or school they are enrolled. The schools within UofL have varying GPA requirements to remain in good academic standing ranging from 2.0 through 2.8. The mean for the different schools' minimum GPA requirements is 2.4 (University of Louisville, 2016). The results of this study indicated that most first-generation female students were either placed on academic probation or released from the academic program after their first year. First-generation men fared a little better for the

cohort year but may have still been placed on probation depending upon the school enrolled. Most of the GPA means for the continuing-generation students were above the 2.8 which indicated they were able to maintain the grades needed to be in good academic standing for any of the schools.

  Persistence. Generation status was found to be a statistically significant predictor of persistence for first year students; gender and living environment were not statistically significant as predictors. Generation status has a strong influence on how students engage and acclimate to campus life (Engle & Tinto, 2008; Jenkins, et.al, 2013). The results regarding gender and living environment did not support hypotheses of the study. However, they do partially reflect the findings of Turley and Wodtke (2010) that the living environment is not significant to student persistence in the first year in all cases.

  Engagement in group socialization can positively affect persistence and graduation, and students who live together in close proximity are exposed daily to others who have views and backgrounds that are different from their own (Kuh, et al., 2007). One assumption of this study was that students may persist at a higher rate if living in the privatized group housing than commuting from other locations due to both the amenities and the activities provided by the privatized environment where large numbers of students live together. Since the results were not statistically significant this assumption was not able to be substantiated. One factor that may be considered as either support or non-support for student academic achievement is whether the student is living in a group environment (on-campus or in privatized) versus living in apartment or with family away from student group housing. Identifying the groups that perform at a higher level if

living in student group environments and those who do not, may help inform campus professionals on decisions regarding required living for students.

This study did not reflect the assertion made in research that first-generation students who live on campus persist to the second year at a higher rate than those first-year students who commute (Liu, 2016; Pike & Kuh, 2005). When considering generation status, the results indicated that first-generation students persisted highest if living in privatized housing (73%), at the second highest rate if commuting (67%) and the lowest if living on campus (33%). The results were surprising and the extremely low percentage of students who persisted while living on campus was note-worthy. Because this is a study of previous year data, there is no way to determine what may have happened in the on-campus living environment that year to contribute to this low percentage. Also, the results regarding generation status indicated that first-generation students persisted at the lowest levels if living on campus (33%) compared to persistence if commuting (67%) or living in privatized housing (73%) which indicated that group living does offer a level of support to students in general.

Continuing-generation students persisted at the highest rate if living on campus (85%); persistence of continuing-generation students living in privatized housing or commuting was the same (83%). These higher percentages of persistence may be indicative of pre-college exposure to the campus environment and what it is like to live on campus from family members who have attended a higher education institution (Blimling, 1993; Bozick, 2010; Engle & Tinto, 2008).

Again, a limitation to this study is that there is not a method for determining why the continuing-generation students living on campus persisted at such a higher rate than

the first-generation students. This study did not consider what type of unit the student lived within the environment; therefore, cannot report if the students who lived on-campus in apartment settings persisted at a higher rate than those who lived in other room types of the on-campus living environment. Another consideration is that the first-generation students do not have that same level of family understanding or support when they are experiencing difficulties adjusting to college life (Jenkins, et al., 2013).

These results on persistence and first generation seemed to weaken the argument of housing professionals that, in general, first year students living on campus persist at a higher rate than those living off campus. The study findings also suggested that on-campus housing facilities as well as programs and events planned for students should be more flexible and varied to provide different opportunities for students. Future research should address what factors within the housing environment either provides the most support or threat to different student groups as they pursue their academic goals.

Limitations

There were several limitations to this study. First, it was a case study looking at data from one institution that met the criteria of availability of off-campus privatized housing and no live-on requirement for first-year students. However, there was a small percentage of the first-year cohort living in privatized housing and therefore limited the number of students that could be studied. The small cell sizes, especially for generation status (male, first-generation: $n=9$; female, first-generation: $n=36$), created a small effect size and possibly contributed to the non-significance found in the variables.

Secondly, there was also only data available for one academic year. The limited data did not allow for comparison of results from multiple years. Multiple years or

cohorts of data would have aided in interpreting some of the results that were surprising such as the persistence and grades with first-generation by allowing some comparison between the results of each year.

A third limitation is that only two pre-college attribute variables were reviewed in the study: gender and generation status. There are many other variables identified (ethnicity, socioeconomic status, high school grades, gender identity) that have an effect on how the student adjusts to new environments and moves through the college experience to graduation (Kuh, 2008; Kuh, et al., 2006; Pike, et al., 2011; Tinto, 1993). Future study should also include additional pre-college attributes that influence a student's journey through the higher education system such as ethnicity, socio-economic status, and gender identity.

While the results in this study partially reflected previous research, any generalization of the specific results should be made cautiously since the cell sizes within the sample were discrepant and the results were non-significant. The limitations of this study indicate that further research should include a data set that provides a larger sample or cell size. This may be accomplished by including multiple institutions and multiple years to determine a pattern of persistence and academic achievement.

Implications for Practice.

Suggestions of how this study may have implications for practitioners in student housing and student affair are made with caution because none of the variables were found to have a statistically significant interaction effect with cumulative GPA and only generation status was found to be a statistically significant predictor of persistence. The non-significant results did not allow for determination if any of the variables had a

stronger effect than others. Therefore, one strong implication is that more research needs to be conducted using samples with larger number of subjects in order to replicate this study or other studies regarding living environment and student academic achievement and persistence. There are themes that seemed to be prominent in reviewing the descriptive statistics and frequencies.

Some of the results such as the indication that the cumulative grades of the full sample were higher for those living on campus followed the findings in previous research regarding student academic achievement and living on campus. Another example of how the results of this study seemed to follow previous research was that different student groups (gender and generation status) have varying success with persistence and grades in different living environments. Again, it cannot be assumed that these supported previous research since this study found no statistical significance between the variables and academic achievement.

Some of the findings seemed to indicate that first-generation students did not have the same results of academic achievement if living on campus. Soria and Stepleton (2012) implied that first-generation students may benefit from being part of communities of belonging such as living-learning communities in residence halls. Their assertion suggested that by living in smaller, themed communities the students have greater chance of forming relationships with other students, staff, and faculty and therefore may better acclimate to being in college. The study institution did not have living-learning communities such as academic-driven environments with support from the academic department and faculty in common classes, advising, and study groups (Astin, 1993; Kuh,

161

2008; Kuh et al., 2006). Therefore, where the student lived on campus was not considered as part of this study.

Simply attending a college is a huge adjustment for first-generation students; living on campus adds to that adjustment at levels that may be overwhelming for the students (Pike & Kuh, 2005). The results of this study implied that the environment was not supportive of first-generation students, and supported the importance of smaller living groups where academic focus such as found in living-learning communities is present. These results also seemed to imply campus housing professionals should identify factors (physical or programmatic) that help first-generation students adjust and succeed in an effort to design housing experiences that enhance those factors. Because there was no significance found in interaction effect, it is difficult to determine if any of the variables had more effect than others.

Enochs and Roland (2006) analysis supported theories that suggest female and male students acclimate to college and learn differently than each other; however the differences in adjustment levels for the groups of their study were not as high as some previous research had reported. Enochs and Roland (2006) suggested that the changing roles of females in society and the increased opportunity for leadership for female students may have helped lessen the social adjustment levels of previous studies and therefore allows female students to acclimate more successfully. While this study did not find any statistically significant interaction effect of the variables on cumulative GPA, there were indications of differences in cumulative grades between males and females as well as first- and continuing- generation students.

One implication of the results could be that the "one size fits all" environment that many on-campus housing programs provide no longer meets the needs of the many diverse groups of students living on campus. This study triggered an idea that the way student interaction occurs in the on-campus facilities such as large floor meetings, judicial meetings, and wellness checks should also be updated and designed to meet the different ways students adjust to their environments. It would benefit campus housing programs to design particular living environments and opportunities that support different groups of students in their communities individually. Kuh, et al., (2005) suggested providing different methods for helping students get acquainted with each other and their community to allow students who learn and adjust differently to meet their needs.

An example of this may be to provide visual and audio recordings that show a variety of "how-to" moments as students prepare to move to campus. Recordings made by student leaders and staff could let the incoming student see others whom they will meet. The topics could include how to communicate with your roommate before arriving to discuss what each of you will bring, how you like to study, what you want the shared room to look like as you settle in. Additionally, such recordings can prepare the student for the actual check-in day and process, first-floor meetings and events, what a resident assistant is and how that staff member can help them, and how to report problems in the living area.

The general implications to housing professionals includes the need to review policies and processes that may be outdated for the incoming students. Policies and procedures that are in place because "it has always been that way" probably make no sense to incoming first year students. Institutions need to determine what policies should

be updated and written in terms the students understand. For example, the first floor meeting of the year occurs just before or as classes start for the semester. Students have had little time to get to know each other, unpack and set up their rooms, and explore the campus. To expect students to attend a large group meeting with people they barely know and be comfortable as well as have the ability to absorb all of the discussion of rules and the programs planned may be presuming more than some students are capable.

One purpose for conducting this study was to contribute to a gap in literature regarding first year students living in privatized housing and the interaction effect of that living environment on academic achievement and persistence of those students. As discussed in the first chapter, campus administrators are making decisions regarding P3 and privatized housing agreements as a method for updating aging campus facilities without increasing the debt of the institution. This study was conducted to try to gain more insight to how students living in privatized housing succeed and therefore have evidence based information to provide campus administrators. The hypotheses for the study all noted that students would have higher grades and persist at a higher level if living on campus.

The implication of the non-significant results of this study is that there is no new information available to assist administrators as they decide the best method for providing campus housing. The results cannot confirm or deny how the living environment interacts with student success, and thus the results of this study do not assist in providing information regarding student academic achievement and persistence and living environment. Future research needs to continue to probe how the different living

environments support student academic achievement to find evidence based results that can be used confidently as institutions plan for the future.

Future Research

Eimers (2001) recommended further study of how minority and non-minority students interpret their college experience and how that experience determines their future activities and comfort within the environment. Schudde (2011) recommended further study be conducted to determine what experiences within the on-campus living environment specifically contribute to student persistence.

There are different types of variables that can be studied regarding campus living environment and student academic achievement or persistence. This study analyzed student level variables that considered differences due to pre-college attributes of gender and generation status; other background characteristics such as ethnicity, socioeconomic status, and gender identification should be addressed in future research. Future research of programmatic level variables may include how students are informed, learning outcomes for events and processes, and how the policies and procedures support different groups of students. A third level of variable is the physical level that would consider the style of the living area that the student is assigned as well as amenities and physical attributes of the environment. More research should be conducted on each of the levels of variables (student, programmatic, and physical) in relation to the living environments available to students.

There is little research that delves into the specific physical or program variables found in a residence hall environment that may have stronger correlation with persistence and grades. Future research should analyze the on-campus housing programs in order to

165

update results from previous studies and to determine what facets of variables (physical space, programs offered) within the on-campus environment contributes most to student success. It is vital that on-campus housing programs are current in methods for assisting and supporting students in the living environment in order to help them acclimate to and navigate through the college experience more successfully.

Additional research that looks at the opportunities of different living environments and focuses on the new paradigm of privatized student housing communities will be needed in order for campuses to design housing programs that matter to student support and success. Research that has been conducted prior to this study limited the analysis by combining the students who live in off campus student group living and those who commute. More research is needed that adds this new paradigm of student housing, off-campus privatized group living, to be able to understand the dynamics of the environment and how students succeed when living there.

Finally, a future study should try to replicate the findings of this current study or other recent research results with greater numbers of students in the sample. The increased sample size would add strength to the study and may produce results that are more statistically significant.

Conclusion

Although this study had limitations, it did seem to follow the patterns of previous research regarding student persistence, grades, and living environment. These can only be considered patterns and discussion since the gender, generation status, and living environment were found to have no statistically significant interaction effect on

cumulative grades. Implications and suggestions offered in this study were based solely on the patterns found in the descriptive statistics and frequency data.

New information provided by this study for campus housing professionals is the comparison of students living in privatized housing and on-campus housing as well as discussion supporting recent research regarding how different groups of students adjust and accomplish academic achievement.

Further research should be conducted to increase understanding of the variables and opportunities associated with the living environment, as well as the impact that living in privatized housing communities that provide high levels of socialization. It is important for higher education administrators and campus housing professionals to understand what high impact opportunities are found in the privatized housing communities in order to make informed decisions regarding the future of student housing.

Campus housing programs would benefit from analyzing the academic achievement of the students on their own campuses paying specific attention to student groups such as gender, generation status, ethnicity, socio-economic status, and other characteristics that affect the way students acclimate, engage and achieve success. Knowing the needs of student groups on their campus, would allow for more specific programmatic opportunities and living environments to be designed as support for the student body.

Finally, this case study is a start. It did not provide a clear answer as to whether institutions should partner with private developers to provide housing for their students. The study did, however, suggest that different students succeed in different environments

which implies that institutions and campus housing offices need to be intentional about providing the services and factors that matter in student success.

Pressure from state guidelines regarding graduation rates will continue to be a factor for administrators in higher education. The results from this study suggest the importance of building campus environments that can support different student and the needs of the students we recruit. The questions raised from the data can help inform future research on variables to consider and questions to ask.

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services in higher education.* (Occasional Paper No. 10). National Center for the
Study of Privatization in Education: Columbia University.

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enhance short-term and long-term retention of university students. *Journal of
College Student Retention, 1*, 407-430.

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Accounting for observed differences. *Journal of Educational Measurement, 39*, 1-
37.

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and education* (pp. 3-23). Columbus, OH: Association of Colleges and University
Housing Officers - International.

Winston, Jr. R.B., Anchors, S., & Associates. (1993). *Student housing and residential
life*. San Francisco, CA: Jossey-Bass.

Woosley, S. A. (2003). How important are the first few weeks of college? The long term
effects of initial college experiences. *College Student Journal, 37*, 201-208.

CURRICULUM VITAE

Shannon D. Staten, Ph.D.

Professional Employment

Executive Director for University Housing. Florida State University, Tallahassee,
Florida. August 3, 2015 to present. Serve as the coordinating administrator for all
issues regarding students who are living on campus at FSU (6,500). Responsible for
leading, directing, and managing the University Housing department consisting of:
Administrative services, Budget and Fiscal Services, Family Services, Facility
Management and Operations, Living Learning Programs and Resident Student
Services. Oversees the development and administration of an annual operating
budget of approximately $42 million, and the new construction and renovation of
current halls on campus, including an extensive project of $110 million. Leads a
robust academic partnership through several Living Learning Communities.

Director for Housing and Residence Life. University of Louisville, Louisville, Kentucky.
May 1, 2001 to July 31, 2015. Served as the coordinating administrator for all issues
regarding students who are living in traditional on-campus or campus affiliated
housing programs (5,100 beds) on two campuses. Directly supervised and
maintained overall administration and program development for an auxiliary unit that
owns and manages 1,700 resident beds in 6 facilities on 2 campuses. Oversaw an
extensive privatized housing community network with halls located both on and off
campus of approximately 3,400 beds. Developed, implemented and oversaw all
budgetary issues for an on campus operation budget of approximately $7 million
annually. Managed several outsourced contracts for services in the owned halls for
approximately $.5 annually. Assisted in relationships the university had with
neighborhood associations located around campus. Monitored life safety issues in
Greek housing units.

Assistant Director for Facilities, Housing and Residence Life. University of Louisville,
Louisville, Kentucky. July, 1989 to May, 2001. Responsible for facility issues
within the Housing and Residence Life Program and assisted Director with the
administration of the program (1800 residents, 8 residence halls, two campuses, and
280,000 square feet). Assisted with the preparation, implementation and oversight of
the operational budget of over $6 million. Served as the primary contact for
renovations, new construction and special residence hall projects. Prepared and
oversaw specifications for annual outsourced contracts for linen, security, cleaning
and extermination services totaling 21% of the annual housing expense budget.

Represented Housing in a partnership with outsourced food service. Monitored delivery of maintenance services; purchased and maintained furniture, equipment and supply inventories; and monitored fire and life safety issues including hall security access, key inventory control, and fire code regulation.

Coordinator – Men's Residence Halls 1987-1989 and Jester Center 1985-1987. University of Texas, Austin, Texas. Responsible for the overall administration of the areas assigned (Men's Residence Halls (1000 residents, 4 facilities) and Jester Center facility (3000 residents, two 15-story towers and commons area including food service operation, 3 full time desk operations, 1 university mail room for residents, and coordination of space for a satellite book store, University Career Center, and classrooms.

Education

Ph.D. University of Louisville. Counseling and Student Personnel, October 2016.

M.Ed. University of North Texas, Denton, Texas. Counseling and Student Personnel Services: Student Services Administration. May 1983.

B.A. Marshall University, Huntington, West Virginia. Secondary Education: English and Spanish. December, 1980.

Professional Continuing Education

ACUHO-I Standards Institute. Three day intensive workshop sponsored by Association of College and University Housing Officers International (ACUHO-I) on the ACUHO-I Standards and how to conduct campus reviews with the standards as a metrics. July 2016.

Jon C. Dalton Institute on College Student Values. Three day institute focusing on the preparation of present and future students to become engaged individuals of integrity. Florida State University. February 2016.

Global Summit in Hong Kong. ACUHO-I Summit focused on international student issues in campus housing. January 2009.

Table top exercise in emergency response to campus disasters. University of Louisville. Two-day training as part of the emergency response team duties. October 2008.

College and University Housing: A New Era for Campus life. Workshop sponsored by Association of College Administration Professionals. October 8-9, 2007.

Annual Conference and Workshop. National Association of Business Officers. July 2005.

Chief Housing Officer Institute. Institute sponsored by ACUHO-I. Intense 4 day training on budgeting, construction, assessment, decision making and presentation. January 24-28, 2004.

Mid-Management Institute. Institute sponsored by National Association of Student Personnel Administrators. July 8-15, 1997.

Prejudice Reduction Workshop.   Workshop sponsored by the National Coalition-Building Institute, Louisville, Kentucky.   (24 hours) March 1995.

We the People: Redefining our Family, Nation and World. Workshop/conference sponsored by the University of Louisville, Louisville, Kentucky. November 1992, April 1993 and April 1994.

How to Build and Improve Customer Service. Workshop and lecture sponsored by the University of Louisville, Louisville, Kentucky. (8 hours) October 1992.

Outcomes Assessment in Student Affairs. Workshop sponsored by the University of Northern Colorado, Division of Student Affairs, Colorado. (12 hours) July 1990.

AIDS in the Workplace Workshop. Workshop sponsored by the University of Texas, Office of Personnel and Employee Relations, Austin, Texas. (8 hours) Spring 1989.

Interactive Management (40 hours:1988), Supervisors of Employees Workshop (20 hours:1987) and Supervisory Skills Workshop (40 hours:1986) Workshops sponsored by the University of Texas, Office of Personnel and Employee Relations, Austin, Texas.

Honors

Induction into the Omicron Delta Kappa Honor Society of Florida State University as a staff mentor and member. October 2016.

Recognition as an Honored Volunteer by the Spirit of Louisville Foundation, Inc. Spring, 2005.

Recognition for Outstanding Volunteerism and Community Service from UofL Community Relations Office. 2005.

SEAHO Founders Award. Southeast Association of Housing Officers. 2002. Top award given by association, in recognition of service over my career to the Housing profession and its students.

Outstanding Service Award. Kentucky Association of Housing Officers. 2000.

Outstanding Employee Award. University of Louisville. 1999.

Disability Awareness Outstanding Service Award. University of Louisville. 1996.

Outstanding Service Award. Southeast Association of Housing Officers. 1995.

Publications

Staten, S. D. (October, 2016). *Relationship between living environment and first-year student academic achievement and persistence.* (Doctoral Dissertation).

Staten, S. D. & Hobgood, K.B. (Fall, 2016). Connected (building partnerships on campus). *Talking Stick, 34*(1), 46-54.

Staten, S. D. (2013). Outsourced services and contracts. In N. W. Dunkel & J. A. Baumann (Eds.), *Campus housing management: Business and information technology*

services, (pp. 54-75). Columbus, OH: Association of College and University Housing Officers - International.

Staten, S. D. (winter, 2010). The Goldilocks Partnership: Public-Private Partnerships take many shapes and forms. How do you find the one that's just right? *Talking Stick*, *28*:2.

Contributing author. (July / August 2007). Women as Senior Officers: Myth and Reality. *Talking stick*, *24*:6, 44-45.

Staten, S. D. 2006. Security Blanket. *Talking Stick*, *24*:1, 37-39.

Staten, S. D. 1998. Making Facility Issues a Learning Experience for All. *Southeastern Association of Housing Officers Report*. (Spring):11-12.

Staten, S. D. 1997. Outsourcing Services: Tips for Making the Process Successful. *Southeastern Association of Housing Officers Report*. (March):20, 23.

Staten, S. D. & Johnson, A. (June, 1994). Laying the Groundwork. *American School and University*, 41-43.

Staten, S. D. (March, 1993). Improving Communication. *Talking Stick,* 22.

Staten, S. D. (December, 1991). Renovation and Construction: Tips for a Successful Project. *Talking Stick*

Professional Leadership and Membership

Sub-chair. Patron Donors, under Stewardship and Giving Committee. Association of College and University Housing Officers – International (ACUHO-I). Fall, 2016 – present.

Facilities and Physical Environment Director. Executive Board Member: ACUHO-I. 2010 – 2012.

Faculty. National Housing Training Institute. ACUHO-I. June 2011.

Member. Chief Housing Officers Institute planning committee. ACUHO-I. 2009 – present.

Member. Credentialing Task Force. ACUHO-I. 2006 – 2014.

Co-Chair for subcommittee for Associate Vendor Show for SEAHO 2007 Host Committee and member of Host Committee – future SEAHO 2007 conference. 2004 – 2007

Co-Chair for the Regional Entry Level Institute (RELI) hosted by the Southeast Association of Housing Officers at the University of Mississippi. June 2005 – June 2007

Member. Exhibits and Displays Committee. ACUHO-I. July 1999 – present.

Member. National Association of Student Personnel Administration (NASPA). 1990 – present.

Faculty mentor. RELI. Presented sessions and mentored 30 participants along with 7 other faculty during a 4 day intense training session for entry level professional staff in Housing programs. June 2005

Sage: Served as historian advisor to the governing council of the Southeast Association of Housing Officers. February 2004 – February 2006

Member. Task Force on Strategic Planning. SEAHO. October 2001 – 2005

Chair. Task Force on Strategic Planning. Southeast Association of Housing Officers (SEAHO). February 2001 – October 2001

Researched and wrote the 10 year history for the Kentucky Association of Housing Officers (KAHO). October 2000

Presenter / Trainer with Gary Kimble of University of Southern Mississippi a 4 hour leadership development session for the 55 newly elected and appointed leadership team of the Association of College and University Housing Officers – International. The workshop focused on strategic planning, team building, goal setting, and coordination between groups. July 8, 2000. (ACUHO-I) annual meeting. Pittsburgh, PA.

President Elect, President and Past President. SEAHO. February 1998 – February 2001

Chair. Host committee. KAHO Annual Conference – 1999 and KAHO Annual Conference - 1990

Future Host, Host and Past Host. SEAHO Annual Conference - 1997. February 1995 – February 1998

Member. Facilities Committee. ACUHO-I. July 1991 – July 1997

Secretary. SEAHO. February 1992 – February 1995

Member. Task Force on Graduate Issues, SEAHO. 1993-1995

President Elect, President and Past President, KAHO. October 1991 – October 1994

Member. Membership Committee. SEAHO. 1990 – 1993

Kentucky State Representative for SEAHO. October 1990 – February 1992

Florida State University activities: 2015 – present

Voting Member. ITN for Dining Services Vendor selection. 2016-2017.

Member. Student Situation Response Team.

Member. Behavior Intervention Team.

Member. Enrollment Management Advisory Group.

Member. Dining Services Advisory Committee.

Member. Emergency Operations Center Team.

Member. Living Learning Advisory Committee.

University of Louisville activities: 1989 - 2015

Presenter, UofL Speaker's Bureau, 1999 – 2015. Present workshop training for various community agencies and businesses in the Louisville and Southern Indiana region.

Member. Student Care Team.

Member. Student Development Master Planning Group.

Member. Food Advisory Board.

Member, University Emergency Operations Group.

Member. Construction advisory team for developing residential campus.

Member. Immunization Committee.

Member. UofL SACS Review: Student Affairs and Services Sub Committee.

Member. University Parking Committee.

Member. SACSA-NASPA New Professional Institute Host Planning Committee.

Member. University Fire Safety Committee.

Chair. Trustees Champions Committee to evaluate undergraduate advising services. 1999

Other Volunteer Activities

Co-Chairperson, Building Committee, Wesley Chapel Methodist Church, 2006 – 2013

Mentor, Youth Small group of Middle School females. Wesley Chapel, 2005 – 2009

Member, planning team for the annual community Gospel Sing bringing church choirs together from Churches in the New Albany and Louisville area for a fall concert. 2000 to 2005

Chairperson. Adult Education Committee, Wesley Chapel. 1999 to 2006

Member, New Albany Township Little League Board or Directors. 2000 to 2004

Coordinator community involvement conference program. Hazelwood Junior High School, Parent Teacher Organization. 2001 and 2002

Member. Long Range Planning Committee. Wesley Chapel. 1997 to 1999 and Nominations Committee, Wesley Chapel. 1994 to 1997

Professional Presentations and training

"Transitioning toward Retirement or Late Career Moves: Lessons learned". Co-presented with Danny Armitage, University of North Texas, and Rosie Bingham,

University of Memphis. SACSA Annual Conference, November, 2016 and NASPA Region III Summer Symposium, June, 2016.

"Speed Mentoring: Gaining knowledge from Women Chief Housing Officer", Southeast Association of College and University Housing Officers conference. Participated annually, 2009 - 2016.

"Tough Conversations: Understanding Campus Culture and Politics". SACSA / CPAK drive-in workshop, November, 2014 and at the Kentucky Association of Housing Officers annual meeting, October, 2014.

"Emergency Preparedness: Writing an Action Plan", Louisville Teacher's Association, Louisville, KY, June, 2013.

"Collaboration between Facilities and Residence Life: What's in your tool box?" APPA / ACUHO-I Fall Conference, 2013.

"Bridging long term strategic public/private partnerships in collegiate housing: Creating a unified campus housing program". SACSA Annual conference, November 2012.

"Changing the Campus Culture: Business Affairs and Student Affairs working together". Presented at both the ACPA Annual Conference, March, 2012 and the National Association of College and University Business Officers (NACUBO), July, 2012.

"Developing an A+ Attitude, Starts from within".   Presentation regarding the importance of attitude in success, satisfaction and growth within an organization or job. Presented multiple times to businesses and government agencies, Louisville, KY, 2001 – 2012.

"Challenges Women Face in Facilities". ACUHO-I / APPA Fall Conference, Orlando, FL. October 2011

"Where does my time go?" Presentation on time management presented to different organizations and campus groups. Presented to 20 different business and government agencies, Louisville KY, 2004–2013.

"Supervision at a Professional Team Level". SEAHO Regional Entry Level Institute. June, 2011

"A Housing Movement: Pioneering the Way to Strategic Partnerships". Co-presented with Education Realty Trust, INC. National Association of College Auxiliary Services (NACAS). November 2010.

"Developing a Personal Mission Statement", Seven Counties Services, Louisville, Kentucky, October 2010.

"Developing a Personal Mission Statement", Presented to seven 9th grade CIE classes at Floyd Central High School, Floyds Knobs, IN on the importance of developing a personal mission statement. One day per semester, 2008 – 2011.

"De-Mystifying Public-Private Partnerships", Co-presented with The Scion Group, LLC (consulting firm for Higher Education), Association of College and University Housing Officers – International conference and Exposition, June 2010.

"Affiliation Agreements between Schools and Off-campus Housing Providers", Co-presented with The Scion Group, LLC, Association of College and University Housing Officers - International Conference and Exposition, June 2010.

"A housing Movement: Pioneering the Way to Strategic Partnerships" co-presented with representatives of Allen & O'Hara Education Services, National Association of Student Personnel Administrators annual meeting, Chicago. March 2010.

"The ACUHO-I Certification Program Review", Southeast Association of College and University Housing Officers conference, February 2010.

"Assisting International Students in Transitioning to a US campus", College Student Personnel Association of Kentucky (CPAK) annual conference, February 2010.

"Student Affairs Vision for developing a vibrant campus environment and campus neighborhoods", Co-presented with Dean of Students and VP Business Affairs to various departments on campus including: Alumni Board, Admissions, Financial Aid, VP Business leadership team, Provost leadership team, RSA, April 2009.

"Journey to the Next Galaxy: Preparing for and seeking a Director-level position:" Southeast Association of College and University Housing Officers conference. February 2009.

"It takes a village: The Global Housing Summit in Hong Kong." Southeast Association of College and University Housing Officers conference. February 2009.

"The Path", 4-week class helping participants discover their Christian journey through a mission. Wesley Chapel Methodist Church, New Albany, Indiana, Taught Spring and Fall sessions, 2004 – 2009.

"Student Affairs Vision for developing a vibrant campus environment and campus neighborhoods", Co-presented with Dean of Students and VP Business Affairs to various departments on campus including: Alumni Board, Admissions, Financial Aid, VP Business leadership team, Provost leadership team, RSA, November 2008.

"Lessons Learned by Virginia Tech", co-presented, CPAK annual conference. February 2008.

"Transitioning into the College Environment: Exploring Identity or Identity Crisis", Indiana University Southeast, New Albany, Indiana, September 2007.

"The Path You Take", a workshop on discovering your personal mission and moving it into action. Presented to different businesses and government agencies, Louisville, Kentucky, 2001 – 2008.

"Balancing Priorities", co-presented, College Personnel Association of Kentucky conference, Lexington, Kentucky, March 2007.

"Developing a Security Plan you can run with". Southeast Association of College and University Housing Officers conference. February 2007.

"Emergency Action Plans: Getting started", KEMBA Credit Union Annual National Conference session, Louisville. Kentucky, June 2006.

"Becoming a Person of Influence", Keynote address for Mississippi State Conference for Resident Assistants, Oxford, Mississippi, January 2006.

"Leadership Development", Series of 3 – 1 hour workshop presentations for the Minority Academic Enrichment Program, University of Louisville, Louisville, Kentucky, September, October and November 2005.

Facilitator: for day-long retreat with Northern Kentucky University Student Affairs mid manager and chief managers. Retreat topic focused on impending change to the division from expectations of the university and of KY CPE. Facilitated discussion, assisted in formulating first step plans, Covington, Kentucky, October 2005.

"Leadership – Challenges and Opportunities" 1 hour opening address to volunteers from around the country working as team leaders for the U.S. Transplant Games to be held in summer 2006. Louisville, Kentucky, September 2005.

"Transitioning from a mid-manager to a chief housing officer", Southeast Association of College and University Housing Officers conference, February 2005.

"Privatization! Making it work for you", Co-presented, Kentucky Association of Housing Officers meeting, Lexington, Kentucky, October 2001.

"Kentucky Issues Roundtable", Kentucky Association of Housing Officers Annual state meeting, Lexington, Kentucky, October 2001.

"State Legislation and Housing Procedures: Two current issues in the state of Kentucky" 1-hour presentation reviewing Kentucky house bills 321 and 322, Southeast Association of College and University Housing Officers conference, February 2001.

"P X 5 = 1 Direction: Creating a Personal Mission Statement", Kentucky Association of Housing Officers, annual meeting in Morehead, Kentucky, October 2000.

"Communicating Effectively with Difficult People", multiple presentations to businesses and government agencies, Louisville, Kentucky, 2001 - 2002.

"Organizing your office and work space", three 1-hour presentations to various staff departments focusing on creating a more effective workspace and work ethic that centers on more effective planning and prioritizing, Wyatt, Tarrant & Combs Law Firm support staff, Louisville, Kentucky. June 2000.

"Spring Cleaning: Your Desk, Your Office, and Your Work Habits", multiple presentations made to businesses and government agencies, Louisville, Kentucky, March 2000 - 2005.

"Communicating Effectively within the workplace and beyond", National Association of Credit Managers, Louisville Chapter, Louisville, Kentucky, April 2000