THE IMPACT OF CAMPUS HOUSING ON STUDENT OUTCOMES

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by
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ABSTRACT

This study was an explanatory research design that utilized a correlational approach to explore the relationship of residential factors with academic variables explained by first- and second-year grade point average (GPA), behavioral variables explained by incidences of student conduct violations, and engagement variables explained by involvement in activities and perceptions of campus environment. This research study used qualitative and quantitative data to; explore the effect that student housing has on academic achievement as explained by grade point average and retention from first to second year, examine the effect that on-campus housing has on student behavior as explained by the frequency of violations of the student code of conduct, and provide a deeper understanding of student engagement and explore its relationship with student housing.

The quantitative component consisted of three data sets that included 37,048 records of first- and second-year students enrolled at the institution between 2014-2019, behavioral data composed of 4,635 records of conduct violations that occurred in residence halls between 2014-2020, and a data set of 239 survey responses that included questions related to student demographic, financial, and residential factors, as well as questions that were related to student participation and engagement with social and academic aspects of campus life. The qualitative component consisted of data from student interviews related to their academic and social experience on campus which supplemented the findings of the quantitative analysis.

The findings of this research indicated that there is a strong correlation that academic achievement, behavior, and engagement have with the residential environment. Findings demonstrated that different types of housing and room types had a significant effect on grade point average and retention from first to second year. The findings also demonstrated that the effects of room types, as it relates to room configuration, were significant with negative student behavior and levels of engagement. A higher number of roommates in student housing was found to increase occurrences of student conduct violations and to decrease measures of student engagement. These findings provide insight into aspects of student housing that play an important role in a students' success and experiences.

This study attempted to address gaps in literature that examine how the physical space of a residence hall impacts the student experience. The primary objectives of this study were to explore the effect that student housing has on academic achievement and retention from first to second year, to examine the effect that housing has on student behavior, to provide a deeper understanding of student engagement and its relationship with student housing.

The implications from this study contribute to the practical and theoretical frameworks of student integration and development by revealing the residential factors that produced the greatest influence on student academic achievement, retention from first to second year, conduct behavior, and engagement. In practice, this research can be used to inform the following; institutional housing and occupancy systems, design and

development of residence hall structures, decisions related to campus planning, and the

use of public-private partnerships for student housing.

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INTRODUCTION

Since the founding of Harvard University in 1636, the first institution of higher education in the United States, dormitories, also known as residence halls, have been an integral piece of college life for students and families. Throughout the decades, the construction of residence hall buildings has evolved greatly, but their purpose has remained the same. Since the construction of the first residence hall in the 1700's to present housing trends, it is evident that, "living on campus is a manifestation of three hundred years of American educational ideology that placed a high priority on social interaction among students" (Yanni, 2019, p.1). Residence halls are just as important today as they have ever been, even though one might think that distance learning would make them obsolete. The rise of online learning, the widening gap of social inequality, and the corporatization of higher education, are all factors by which institutions of higher education have been impacted by in recent years. Yet, residence halls continue to be a current focus of colleges and universities, as is demonstrated by the current practice of building ever more elaborate buildings, some of which closely resemble luxury hotels. As observed from universities and colleges nationwide, student residence hall buildings vary considerably in design, occupancy, and structure. These variations encompass the ideals and changes of the student population, student life, the values of the institution and society as a whole during the period that they were built (Yanni, 2019).

The initial building plans of residence halls were much more limited than the variety of structures and amenities that are offered on college campuses today. The

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building plans consisted of two types of structures, the double loaded corridor and the entryway plan. Both of these building structures were made up of traditional double room styles. Lower rise buildings were the norm in the 1940's, however after World War II, residence halls quickly transformed into high rise buildings. Shortly after the war, the student population almost doubled on college campuses as approximately one million veterans enrolled due to the Servicemen's Readjustment Act (also known as the GI Bill), that went into effect in 1946. Many colleges and universities were struggling to accommodate the inpouring of students in such a short period of time which initiated a student housing boom at many institutions. There have been many significant changes with student housing over the past decades. The construction of residence hall buildings began moving away from the traditional double style room layout with communal bathrooms. Beginning from the 1950's, construction of the residence hall became taller, more complex, more modern, and more creative in shape and design with lounges, laboratories, faculty apartments, libraries, and dining halls. This modernization led to the inclusion of building four person rooms (also known as suites or quads) as well as single rooms, which can be demonstrated with residence halls Morrill and Lincoln Towers at The Ohio State University. See Illustration 1.0. These residence hall buildings were constructed between 1963–1967 in a unique beehive structure that was quite the divergence from the traditional double loaded corridor design of the past (Yanni, 2019).

By the 1960's, residence hall architecture included apartments with a bathroom and a living room, and a mix of single and double bedrooms. As the construction of the traditional double room style has waned over the years, there are considerable variations

of room styles offered in newer residence hall facilities that also include many upgraded

amenities. These varying room configurations have the potential to influence the kinds of

experiences and interactions residential students have in university housing.

Illustration 1.0
Morrill and Lincoln Towers at The Ohio State University

Courtesy of, The Ohio State University Archives

Building structures are typically designed with the intent to facilitate or increase

certain kinds of human interactions. The design of a building has the ability to, enhance

fostering a sense of belonging, fulfilling needs, experiencing influential inclinations, and

engaging in emotional connectedness to others (Heasley, 2021).

The physical campus environment, which includes the residential housing

facilities, has the ability to impact a student's experience of their institution and of the

campus community (Schudde, 2011). A critical spatial perspective provides a useful

angle of examining interactions between people and spaces, emphasizing that buildings

are not just empty receptacles in which activities occur, but rather, these physical

environments are affected by people, and in turn, people are affected by them (Samura et al., 2021). The residential environment impacts a student's degree of integration, engagement, sense of belonging, academic performance, and retention from the first to second year, which are all factors that contribute to student outcomes (Garvey et al., 2020). Student housing facilities offer many benefits for students that off campus housing does not (Schudde, 2011). For many students, moving out from their family home and living in on-campus housing can provide them an easier transition into adulthood. Some benefits can include; less commuting time, more security, and overall more social and academic support from staff and peers (Yanni, 2019). As will be examined further, there is a history of research that demonstrates student residence halls have a positive impact on student outcomes.

<div align="center">Statement of the Problem</div>

Student housing has long been viewed as a vehicle for facilitating student academic achievement and integration into the campus community. There is a wealth of research that demonstrates that on-campus housing is beneficial to the student experience and has a positive impact on retention and academic achievement. Student housing is an influential aspect of the student experience and has a lasting impression on students who live on campus. However, residence halls have garnered more attention from institutions and students in recent years than ever before, which has led to a change in how institutions approach these building structures. These changes could be explained by four main factors; First, students and parents have adopted a consumer-like approach to higher education and have higher expectations and demands from institutions. Second,

sometimes referred to as the "amenities arms race," universities are competing for the top students and housing facilities can play a role on the decision of students and parents regarding which university to attend. Third, residence halls have become a major source of income for many institutions which inclines them to provide more variety and various upgraded amenities to attract students to live on-campus. Fourth, financial factors and decreasing government subsidies, have led institutions to change their approach to residence halls, with an increased focus on them as a part of the institutional establishment (Poria & Oppewal, 2002).

Additional interrelated factors such as enrollment rates, rising costs of tuition, rising levels of debt, median income, impact of educational attainment on employment prospects, and retention rates are associated with many long-term social, emotional, physical, financial, and professional outcomes. These factors provide context of the risk, investment, and benefit of individuals attending college. They are used to demonstrate that there is a need for government and institutional accountability to ensure successful student outcomes and as well as a shared responsibility to eliminate or reduce the obstacles that stand in the way of it. The factors observed can demonstrate that attending college is an expensive endeavor that has the potential to be very beneficial, but also has potential risks associated with it. As one can observe in the discussion of these specific factors, investing in a student's success benefits the individual student, the institution, and society as a whole, and is in the interest and responsibility of all to ensure positive outcomes.

The Evolving Consumer

The first residence hall buildings were designed and constructed with a clear purpose, and that was to be a vehicle for student success. The term, *student success*, refers to academic achievement, educational engagement, satisfaction, learning, retention, graduation, and post-college performance (Kuh et al., 2007). Buildings were constructed to endorse focus on studies and academia, and also promoted student engagement and networking. The incoming students of today are much more consumer-oriented and have higher expectations for amenities and facilities than previous, traditional, college-going students (Forrest, 2020). In current times, there are many students who prefer their own bedrooms, better amenities, and a higher degree of privacy than students who lived on campus 30 years ago (Yanni, 2019). This consumer-like shift in parents and students can be observed with an increased demand of perks such as, advanced technology, parking spaces, Starbucks, and fast Wi-Fi for streaming and gaming. An excerpt from Yanni (2019) discussed this shift:

> In contrast to fifty years ago, many more of today's young people have grown up in America's suburbs, in giant houses where they have their own bedrooms and bathrooms. So, it is a shock when they get to college to find that they are staying in a six- foot- by- nine- foot room with one window and two other people. Some are repulsed by the mere thought of sharing a bathroom with an entire hallway of classmates. (p.31)

Current first-year students may have more negative reactions to outdated buildings or room crowding compared to the cohorts of students decades ago. Many of these students have never shared a bedroom and will expect and desire more privacy than incoming students from previous decades. Higher expectations from students means that institutions offering outdated and overcrowded buildings, will no longer seem like an

attractive college choice for many prospective students. Additionally, students are more willing to pay for upgraded room amenities related to privacy, such as sharing a bedroom, toilet, and shower, as well as for added convenience, such as the number of people sharing the shower if it has to be shared, the size of room, and the number of people to a floor (Poria & Oppewal, 2002). The influence of this shift could be observed by the amenities "arms race" that influenced some institutions.

Amenities "Arms Race"

As institutions strive to attract top students to their campuses, they could be faced with pressure to provide quality and affordable education while also offering desirable non-academic factors that contribute to the student experience, such as housing and dining facilities. During the amenities "arms race," some universities were competing to build more modern and more luxurious facilities, and colleges that fell behind had a more difficult time recruiting the top students.

During this period, competition was observed by the development of residence halls with spa amenities, luxurious dining rooms, and with installation of climbing walls and lazy rivers in student recreation centers. As one can scrutinize, some of the amenities were extravagant, and their impact on student outcomes was questionable. However, recent literature has demonstrated a renewed interest in building community, and some institutions are returning to the traditional residence hall design with double and suite-style room configurations.

Additionally, in an attempt to meet the increasing demand for bed spaces, some institutions have been replacing outdated residence halls by public-private partnerships (also known as a "P3"), which allow them to partner with private developers to build, upgrade, or maintain housing and dining facilities on-campus. There are a wide range of

forms of public-private partnerships and the level of involvement and risk that the developer or firm holds in the arrangement with the institution varies. The terms are typically set out in a master development agreement or contract, and the type of P3 model that is incorporated depends on the specific needs and goals of the institution (Lundy & Ladd, 2021). It was reported that in 2016, public-private partnerships accounted for $3.1 billion of student housing activity, which had doubled from $1.4 billion in 2014 (Lundy & Ladd, 2021). This has become an attractive solution for some universities across the nation as the demand for student housing increases, and colleges and universities do not have the financial and physical resources to construct new residence halls. The shift in perceptions regarding student housing can be problematic because depending on how the buildings of the public-private partnerships are staffed and maintained, they may provide a less satisfactory experience compared with students living in buildings that are staffed and maintained by the institution.

Enrollment Rates

Enrollment rates are an important factor in this discussion as the attainment of higher education has many benefits. Data obtained from the *Report on the Condition of Education* (2021) demonstrated that although the overall immediate college enrollment rate did not differ between 2010 and 2019, total undergraduate enrollment decreased by five percent between 2009 and 2019 (from 17.5 million to 16.6 million students). In fall of 2019, there were 16.6 million undergraduate students nationwide enrolled at degree granting institutions. There were 11.0 million students (about 66 percent) of the total undergraduate population enrolled at four-year institutions, and 5.6 million students (the

remaining 34 percent) were enrolled in two-year institutions (Report on the Condition of Education, 2021). According to the U.S. Census Bureau, the nation's population between 2018 and 2019 was 328,239,523 (2019). Therefore, in 2019, 4.88 percent of the United States population were undergraduate students enrolled at degree granting institutions. The enrollment data provides a better understanding of the tremendous impact that higher education has on people and society in the United States.

Loan Debt

The frequency and the amount of loan debt that most college students acquire is substantial. As Hanson summarized in a report of Student Loan Debt Statistics (2021), student loan debt in the United States grows six times faster than the nation's economy, and is now the second-highest consumer debt category. The student loan debt growth rate outpaces the rise in tuition costs by 353.8 percent. As of November 2021, the totals of student loan debt in the country were $1.75 trillion. Public university attendees borrow an average of $30,030 to attain a bachelor's degree. Private, non-profit university attendees borrow $33,900, and private, for-profit students borrow $43,900. The annual growth rate of the total student loan debt balance is 23.6 percent, which is 513 percent faster than the growth rate of the nation's gross domestic product (3.85 percent). The percent of citizens nationwide that are burdened with debt is significant. Fifteen percent of all adults in the United States report they have outstanding undergraduate student debt; 43 percent of college attendees report they incurred some type of educational debt, and 65 percent graduate with student debt. Of all adults nationwide, seven percent report having outstanding postgraduate student loans. First-generation college students are twice as

likely to report they are behind in making student loan payments. Graduates of private, for-profit institutions, are more than twice as likely to report late student loan payments. Overall, people with student loan debt borrowed for an undergraduate education (94.8 percent) or for a postgraduate education (44.2 percent) (Hanson, 2021). These statistics are critical in understanding the serious financial undertaking that many students are taking by enrolling in college and how that has the potential to inform their opportunities in the future. For many borrowers, it can take them 20 years to pay off their student loans (Hanson, 2021).

Cost of Tuition

Again, using data from Hanson (2021), the number of people with student loan rates in the United States is not without cause. In the report, The Average Cost of College & Tuition (2021), the cost of a college education has increased significantly over the last 40 years and is the main factor driving high student debt rates. In the United States, the cost of college tuition has tripled in 20 years. Adjusting for inflation, the cost of tuition has increased by $7,502 or 361 percent. The rate of increasing college costs has escalated at such a rapid pace, that it has surpassed rates of inflation and wages. From 1989 to 2016, college costs increased almost eight times faster than wages. A main contributing factor to the high cost of tuition has been due to a decrease in the percentage of public funding for higher education from the federal and state governments. According to the report, "Two Decades of Change in Federal and State Higher Education Funding," as of 2017, state higher education spending was still $2.2 billion below 2007 levels (The Pew Charitable Trusts, 2019). Historically, higher education has been the area that is most

vulnerable to state budget cuts. Government funding plays an essential role in higher education access and operations, and policymakers across the nation frequently face difficult choices as they attempt to balance support for postsecondary students and institutions with other priorities and changing economic conditions (The Pew Charitable Trusts, 2019).

Cost of Attendance

In addition to the cost of tuition, the cost of attendance is another factor that contributes to the significant financial undertaking a student takes in order to attend college. The estimated living expenses at a college or university are also used to determine affordability. The federal government requires every college and university to state a sticker price, known as the institution's "cost of attendance" (COA). Tuition and fees are the most often-discussed aspect of the price of higher education, but account for less than half of the total cost of attending college (Kelchen et al., 2017). Living expenses are the second-largest cost of college after tuition and fees. What is problematic regarding COA, is that it is an estimate determined by the institution and the method for producing living cost allowance is not standardized. Many institutions have their own strategies for determining the cost of attendance and it is possible that this variation can add to inequities in where students attend and complete college by affecting perceived affordability, actual financial need, and student debt. If the actual living costs in an area are underestimated by the institution, students may receive less financial aid than needed to cover expenses and then later have challenges paying for college. This could affect

graduation rates if students cannot afford to remain at the institution (Kelchen et al., 2017).

Median Income

An examination of the median income as it relates to the cost of college can demonstrate that college has become increasingly unaffordable for the majority of Americans. While the cost of college tuition increases by rate of 6.8 percent annually, the real median household income decreased by 2.9 percent from 2019 to 2020. According to a report published by the U.S. Census Bureau, the median annual household income has decreased from $69,560 in 2019, to $67,521 in 2020, which is the first statistically significant decline in median household income since 2011 (U.S. Census Bureau, 2021). Households in the lowest quintile had incomes of $27,026 or less, in the second quintile had incomes from $27,027 to $52,179, and those in the third quintile had incomes from $52,180 to $85,076. The fourth quintile had incomes from $85,077 to $141,110, and the highest quintile had incomes of $141,111 or more. Upon further examination of the median income quintiles, the cost of attending and living at a four-year public, in-state institution for four years becomes exceedingly unaffordable for Americans in the third income quintile and lower. This is especially germane for students who cannot rely on financial support from their families, and may be bearing the cost of college on their own.

Impact of Educational Attainment

Examining the costs of college may cause many prospective students to question if it is worth the investment and potentially deter them from attending institutions that are deemed expensive or unaffordable. It is difficult to evaluate the worth of a post-

secondary education, however, data from the U.S. Bureau of Labor Statistics has consistently demonstrated that it is, in fact, worth it. Reports demonstrate that higher levels of educational attainment result in higher levels of income. Individuals with doctoral and professional degrees, or the highest levels of educational attainment, had earnings that were triple those with less than a high school diploma (Torpey, 2018). For example, earnings for full time wage and salary workers for individuals 25 years and older, were $712 weekly with only a high school diploma, $836 with an associate's degree, and $1173 with a bachelor's degree in 2017 (Torpey, 2018). In 2020, householders with a bachelor's degree had the highest median income followed by those with some college and those with a high school diploma (Hanson, 2021). Data also shows that four-year college graduates often report higher levels of self-satisfaction when evaluating their employment, have a more positive career outlook, and better overall health (Nikolaev, 2018).

Retention

The attainment of a post-secondary education has undeniable financial benefits in earnings following the completion of a degree. However, those benefits may not be available for individuals who do not graduate with a degree. In the United States, the overall dropout rate for undergraduate college students is 40 percent, and 30 percent of the rate comes from college freshman dropping out before their sophomore year. Dropout rates are a considerable issue in higher education and have a negative impact on the student, the institution, and society as a whole. Students who drop out of college have a higher chance of becoming unemployed, have fewer opportunities for jobs, struggle in

the labor market to advance, and will make about $25,000 less per year in income than those who graduated. Dropout rates impact colleges by negatively affecting their reputations and finances. Institutions nationwide lose on average, $16.5 billion in yearly revenue due to lost tuition from students who were not retained. Students who drop out are four times as likely to default on their student loans, meaning that $31 billion in losses due to defaulted loans will be absorbed by taxpayers over the next ten years. The socioeconomic consequences for those who drop out of college affects unemployment rates, as those individuals tend to stay in low-income brackets, and place more of a demand on government and social services.

Summary of Problem

As is outlined by many factors connected with post-secondary education, attending college is an expensive endeavor that can have many benefits. Depending on the educational outcomes of the student, it can also have potential risks associated. As one can observe, investment in a student's success not only benefits the individual student, but also the institution, and society as a whole. Student housing has long been correlated with positive student academic achievement and increased integration into the campus community. The factors of enrollment rates, loan debt, cost of college, median income, benefits of educational attainment, and retention, provide context of the financial risk, investment, and potential benefit of attending college. Considering the factors discussed earlier, governments and institutions hold a certain level of accountability with students' successful outcomes. Institutions are responsible for making decisions that are the most beneficial for their students. This study focused on examining residential factors

that contributed most to academic achievement, behavior, and student engagement. The purpose was to provide an understanding of the residential factors that proved to be most influential, and to inform policies and practices that ensured that residence halls were contributing to successful student outcomes.

Research Objectives

The primary objectives of this study were to:

1. Explore the effect that student housing has on academic achievement as explained by grade point average and retention from first to second year.

2. Examine the effect that housing has on student behavior as explained by frequency of violations of the student code of conduct.

3. Provide a deeper understanding of student engagement and explore its relationship with student housing.

4. Inform institutional strategies and resources for students living in residence halls.

Research Questions

The study was guided by nine research questions. Each research question was developed and designated for its specific area of interest. The three research topics included in this study are student academic achievement, student behavior, and student engagement.

Student Academic Achievement

1. Do students who live on campus differ from students who do not in terms of academic achievement?

2. Do different residence hall room types affect student achievement and student retention from the first to second year?

3. Is there a difference in student achievement and retention between students who live in university owned on-campus housing and university affiliated campus housing?

Student Behavior

1. How do residence hall room types affect student behavior?

2. How does on-campus residence hall room type affect student behavior related to conduct violations in terms of student demographics?

3. How does on-campus residence hall room type affect student behavior related to conduct violations in terms of student retention?

Student Engagement

1. Does choice of residence affect the level of engagement?

2. How does engagement differ among various student demographics?

3. Do different room types affect engagement of students who live in university housing?

Theoretical Framework

There are multiple theoretical models that examine college students' academic performance, behavior, and retention as explained by their level of integration, engagement, satisfaction, and sense of belonging with the campus environment. Beginning with Vincent Tinto's (1975) and Alexander Astin's (1975) influential work that provided an examination of student dropout behavior, researchers have since developed models that are used to explore academic and social factors that impact a student's experience with their institution. Tinto's Model of Dropout Behavior (1975) attested that students who do not successfully integrate with the social system of an institution, led to a lack of commitment and increased the likelihood that individuals will

drop out of college. Tinto defined student integration in academic and social systems. Academic integration was defined as students' academic performance, level of intellectual development, and perception of having a positive experience in academic settings. Social integration was defined by involvement in extracurricular activities and the presence of positive relationships with peers. Experiences in both systems influenced each other, and positive experiences strengthened retention while negative experiences undermined it (Tinto, 1975, 1993).

Developing on this theory with his Model of Student Departure (1993), Tinto stated that in order to persist, students needed integration into formal (academic performance) and informal (faculty/staff interactions) academic systems, and formal (extracurricular activities) and informal (peer-group interactions) social systems. Tinto's model indicated that retention rates of students increase as they successfully integrate with both the academic and social elements of an institution (1975, 1993).

Tinto revised his Student Integration Model (1997) to connect student attributes to the institutional experience and their influence on academic outcomes, retention, and success. His model connected explanatory factors such as the student's intentions, their social and academic institutional experiences and integration, and the level of the student effort and learning (Tinto, 1997). Through interactions with the institution's academic and social structures, a student's goals and intentions are continuously transformed, which helped determined Tinto's model as dynamic and interactive (Tino, 1993; Schreiber, et al., 2014).

Alongside the integration model, Astin (1984) developed the involvement model which emphasized the importance that a student's mental and physical engagement in the academic experience played a critical role in their decision to persist or drop out of college (Astin, 1984, 1993; Kuh, 2001). Astin defined involvement as, "the amount of physical and psychological energy that the student devotes to the academic experience" Astin, 1984, p. 518). According to Astin, a student's place of residence was the most important environmental factor impacting involvement and living in an in-campus residence hall had positive effects on retention regardless of student demographics or institution types (Astin, 1984). Involvement contributes to better integration of institutional academic and social systems and has a powerful impact on students (Kuh et al., 1991).

Tinto's theory has been used by numerous scholars as a framework for the construction of different perspectives: These theoretical constructs include psychological, environmental, economic, and organizational perspectives (Berger & Milem, 1999). Complementing the research of Tinto (1975) and Astin (1984), the work of Ernest Pascarella (1980) contributed to the model of student involvement by measuring the interaction of students and their environments and examining how involvement behaviors affect perceptions, which in turn affect subsequent behavior such as academic achievement, and persistence. In support of Tinto's conceptions that a student needs a high level of institutional commitment in order to persist, Berger and Milem (1999) suggest that it is the institution's responsibility to identify students with a low level of

commitment and to provide interventions to increase their involvement with academic or social aspects of campus life.

Alexander Astin's research of student involvement in the 1980's has led to the evolution of current student engagement research. Although theorists have disagreed that involvement and engagement describe the same concept, Astin indicates that both terms are essentially the same thing. Student engagement is defined by a student's involvement or interest in their learning, and their level of connection with their classes, institutions, and peers (Axelson & Flick, 2011). Aligned with Astin's explanation that involvement was a psychological as well as a physical phenomenon, the National Survey of Student Engagement (2001), suggests that engagement is mainly a behavior that can be observed.

There is a wealth of research that demonstrates that on-campus housing is beneficial to the student experience and has a positive impact on retention and academic achievement (Bozick, 2007; Jamelske, 2009; LaNasa et al., 2007; Schudde, 2011). Living on campus has also demonstrated to positively impact a student's sense of belonging as well as their integration into the campus community. Sense of belonging has been examined in relation to class, gender, ethnicity, culture, self-perception and career focus (Pokorny et al., 2017). Feeling connected to the institution has positive implications on the student's motivation and academic performance, which in turn impacts degree completion. According to Pokorny et al., students who live at home and commute to campus have a lower sense of belonging than students who live on campus (2017). Well-operating residence halls, "extend the academic environment and facilitate the interaction of students across courses, subject disciplines and across levels of study" (Pokorny et al.,

2017, p.546). The physical living environment on campus is the key to a student's sense of belonging as it aids in the development of new social relationships and student retention (Chow & Healey, 2008; Wilcox et al., 2006). Previous studies have demonstrated that retention is impacted by the student's academic and social integration into the institution, which is influenced by interactions with faculty, staff and peers (Pascarella & Terenzini, 1982; Pascarella, Terenzini, & Blimling, 1994; Schudde, 2011; Tinto, 1975, 1993). Since peer interactions occur on a daily basis, they become influential in a student's development. Students are provided a great deal of learning and development from their interactions outside of the classroom. Residence halls, by design, encourage and foster social interactions between students, and there are few other environments at a university that can influence student behavior in this way (Pascarella & Terenzini, 1982). More recent studies continue to develop the concept of student engagement by including measures of interactions between student behaviors and perceptions. Psychosocial engagement, defined as the energy students invest in their social interactions, and the practices and conditions of institutions related to the behaviors of students has been a topic of research interest as well (Schudde, 2011). Students who live on campus have higher levels of faculty-student interaction as well as peer support. They also demonstrate greater academic and social integration, and experience greater satisfaction and commitment as compared to students who live off campus (Pike, Schroeder & Berry, 1997). The initial student integration and involvement models suggested that an individual assumed responsibility for their academic and social integration to the institution. There is extensive evidence that demonstrates the positive

impacts of student involvement, but provide little explanation of the specific individual and organizational processes that actually generate involvement (Terenzini et al., 1994). Since the term, *student engagement,* is not defined consistently in various research literature, it is difficult to determine who is accountable for it, whether it is the individual student or the institution. Kuh suggests that student engagement is representative of the time and energy that students invest in educational activities as well as the institutional effort and effectiveness with educational practices (2001). Hence, the responsibility falls to both; Students need to put in effort toward their learning, and the institution needs to provide the appropriate environment to facilitate learning (Axelson & Flick, 2011). It is clear that providing a positive, engaging, comfortable, and effective physical living and learning environment is the responsibility of the institution. To the same degree that institutions and governing bodies have a responsibility for factors related to other aspects of higher education such as enrollment rates, loan debt, cost of college, median income, benefits of educational attainment, and retention, institutions are responsible for providing physical spaces that are most conducive to student success. The concept of accountability introduces the discussion of the significance of this particular research and why it is important for student outcomes.

<div align="center">Significance of the Study</div>

Although there is research to support the benefits of living on campus, there is a gap in the literature that explores how different room types in university residence halls affect the experiences and outcomes of traditional undergraduate students. *Traditional students* are defined as full-time, undergraduate, and financially dependent students who

attend a four-year institution upon completion of high school (Choy, 2002). This research study attempts to contribute to the practical and theoretical frameworks on student integration and development by revealing which residential factors produce the greatest influence on student academic achievement, behavior, and engagement. Trends over the years show that there has been a rise of single occupancy and apartment style rooms in student housing construction and renovation projects. Research has consistently shown that there is a greater feeling of community in traditional style double occupancy rooms when compared to suite or apartment style rooms (Sickler & Roskos, 2013). In consideration of the building structure and layout, Devlin et al. (2008) report that corridor-style building designs are better at facilitating community association than are other building layouts. These findings are supported in more recent research literature that demonstrates students living in suite style residence halls report less of a sense of community than students in traditional double room configurations.

Many institutions have begun turning their focus on improving the resident student's experiences by investing in residential facility renovations, offering different on-campus housing options, and implementing a residential curriculum and programming. In order to meet the increased demands for on-campus housing, some institutions are building new residence halls further away from campus, renting spaces within proximity of campus, or engaging in public-private partnership agreements (Martin & Allen, 2009).

Different room types in residential housing facilities can impact a first-year student's academic performance, interactions with peers and faculty, and retention from

the first to second year. Considering the overwhelming desire incoming students have for on-campus housing, outdated buildings or overcrowded accommodations may not meet a newly enrolled student's expectations and may result in a feeling of dissatisfaction with their living situation. Studies indicate that the physical and spatial environment impact student behavior, as is reported in differences in social interactions and in the differences in the spatial organization of the residence halls (Brandon et al., 2008; Thomsen, 2007). Traditional residence halls facilitate more student interaction as compared to suite-style halls (Brandon et al., 2008). Other findings indicate that student's preferences regarding university accommodation are influenced by the size of rooms, the number of students sharing a shower and toilet, and how far from campus the accommodation is located (Thomsen, 2007). Previous literature also reveals that the architectural aspect of the building and context are important for a student's satisfaction with their residential facilities (Thomsen, 2007). The layout, the furnishings, and the overall appearance of a building can influence whether a student accepts the residence as a "home" or not. Buildings that lack an aesthetically pleasing design are reported to pose an obstacle for a student accepting it as their home (Thomsen, 2007).

Living on campus positively impacts a student's sense of belonging as well as their integration into the campus community. Feeling connected to the college or university has positive implications on a student's motivation and academic performance which in turn increase rates of student retention and degree completion. Student sense of belonging is strongly correlated with retention, engagement, academic achievement, and overall well-being (Samura et al., 2021). As demonstrated by these factors, an exploration

of the specific building and room types that are most conducive to a positive student

experience has many benefits for students, institutions, and staff.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

A review of the literature examined engagement as a predictor of student success, how physical spaces influence social interactions, how student housing affects student engagement and retention, and how on-campus housing promotes a student's sense of belonging. The campus environment is influential on student academic motivation and achievement, and residence halls significantly affect the student's experience within the campus community (Shaffer & Ferber, 1965). While many factors influence a student's level of academic engagement, the most important environmental factor identified in prior research was living in student housing (Astin, 1984). Research has shown that sense of belonging, and academic and social integration with the campus community, have positive effects on student academic achievement and persistence (Pascarella & Terenzini, 1982; Pascarella, Terenzini, & Blimling, 1994; Schudde, 2011; Tinto, 1975, 1993). There is a large body of literature that supports that living on campus promotes a variety of desirable academic outcomes by enhancing students' involvement and engagement with their institutions (Turley & Wodtke, 2010). Students who have higher levels of satisfaction with their residence hall are more likely to become involved with peers, which in turn can help them academically and socially (Samura et al., 2021).

Engagement as a Predictor of Student Success

More recent studies continue to develop the concept of student engagement by including an examination of interactions between student behaviors and their perceptions

(Schudde, 2011). A research study by Webber et al. (2013) attempted to further explore the frequency of involvement and to determine if the level of involvement predicts success and satisfaction in college. Webber et al. (2013) built their study on the theory of involvement and benefits of student involvement by analyzing the data found in the College Student Experiences Questionnaire and the National Survey of Student Engagement (NSSE). The study sought to examine if participation in cocurricular activities contributed to student success, if there are differences in student success by gender, race, on-campus living versus commuter status, and class level, and finally, if students with a higher level of involvement earned a higher cumulative GPA and/or perceived greater satisfaction with their overall educational experience. The study examined the relationship between engagement in college activities and success by an objective measure (cumulative GPA) and a subjective measure (students' perceived satisfaction). The research determined that first-year students who reported more faculty interactions earned a higher cumulative GPA, while for seniors, high quality levels of engagement in community service, faculty interaction, and living on campus were all significantly and positively associated with cumulative GPA. The findings by Webber et al. (2013) demonstrated that students who self-reported more frequent engagement in academic and social activities earned higher grades and reported higher levels of satisfaction with their college experience. The study found that students who reported higher satisfaction with their overall educational experience, devoted more time to studying, engaged in interactions with faculty in and out of class, and participated more in community service.

Physical Space Influences Social Interactions

There are few research studies that examine how different building structures and room configurations impact student outcomes. Living in on-campus housing has a positive relationship with academic performance. However, the structure and architecture of a residence hall also shapes academic outcomes across student groups. The literature in the area of student housing has made comparisons between traditional style rooms and suite style residence hall rooms. The traditional rooms, also named corridor style rooms, are described as a double occupancy room in double-loaded corridors with a common bathroom. The suite style halls are described as having four to six bedrooms with a small common space and a bathroom which is shared within the suite. A study by Brandon, Hirt, and Cameron (2008), explored the number of interactions that occurred among students in the different buildings. Using floor plans, tapes of focus groups, and charts marked off by participants, findings revealed certain patterns that involved the number of interactions that occurred, where those interactions took place, and the types of interactions that students had with one another. A total of 334 interactions were reported by traditional residence hall participants, an average of 10.4 interactions per participant over the four-day data collection period. This is in comparison to a total of 256 interactions reported by suite style participants over the same time frame. On average, each suite style participant reported a total of 8.5 interactions, or 23 percent fewer interactions per participant than the traditional group. The key finding of this analysis determined that traditional double room residence halls facilitate more student interaction

than suite style halls, since residents of traditional halls interact with others more often on a daily basis than do their counterparts in suite style halls (Brandon et al., 2008).

Other findings indicate that student's preferences regarding university accommodations are influenced by the size of rooms, the number of students sharing a shower and toilet, and how far off campus the accommodation is located (Thomsen, 2007). Thomsen's case study revealed that the architectural aspect of the building and context are important for a student's satisfaction with their residential facilities. There are certain room and building layouts that are more conducive to fostering a sense of community than others. The design of a residence hall can influence how students interact within that space (Thomsen, 2007). As an example, a residence hall that has multiple entrances can result in fewer interactions among students and lead them to pass by fewer student doors, presuming that they will use the closest entrance or exit to their room (Brandon et al, 2008). However, a residence hall with many lounges and gathering spaces might encourage students to interact more with one another than one with fewer gathering spaces (Brandon et al., 2008). The physical environment has a direct impact on the behavior that occurs within that environment, which means that the physical structures on campus can have a causal effect on how students and staff move within that environment (Ellen, 1982).

Brown, Volk and Spratto (2019), investigated the impact of residence hall architecture on students' academic achievement, while also examining how race and homophily influence social bonds with others. Homophily is the tendency to form strong social connections with people who share one's defining characteristics, such as age,

gender, ethnicity, socioeconomic status, personal beliefs, etc. The researchers examined the differences between two types of residence hall structures, corridor and apartment style. The analysis included four years of student housing records for first-year students attending a medium-sized, private liberal-arts university in the South. The study indicated that the structure and design of a residence hall building has an influence in shaping first-year student engagement and experiences within the university housing setting and found that corridor (traditional) architecture and homophily opportunity were positively related to first-semester GPA (Brown et al., 2019).

The Effects of Housing on Engagement and Retention

Living in student housing was believed to be the most important predictor of retention for many years. Current research has challenged this belief, which led to the present understanding that student retention is dependent upon engagement, which is the time and effort that students dedicate to learning activities that achieve positive outcomes. Living in campus housing increases the likelihood of engagement in academic activities, which then impacts retention rates, academic engagement, and increases feelings of belonging to the campus community (Fosnacht et al., 2021).

Many studies sought to explore which social or environmental factors have the greatest impact on student retention. Researchers Bai and Pan (2009), used a sample of 1305 first-year full time students who had participated in one of 20 different intervention programs at the beginning of fall of 2000 at a large, urban university in the Midwest. The programs were categorized into four different types of intervention programs for retention; advising, academic help, first-year experience, and general orientation

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programs. The intervention types served as the independent variable and the study found that they had positive effects on student retention. The advising programs were found to have more effect on student retention after the first year than did the general orientation programs. The study suggested that the advising programs were significantly more effective on the first-year retention rates than the general orientation programs. The researchers also found that the positive effects of the first-year experience programs had a significant lasting effect on retention for older students and male students across three years. Although, this study did not focus on students who resided in on-campus housing, it found that certain intervention programs had a positive effect on student retention, which could be implemented and examined in housing programs as a way to increase student retention rates for residential students.

Some studies have found that on-campus housing does not benefit all student equally as it relates to retention. A study by Schudde (2016) examined how living on-campus impacts retention for low-income students when compared to middle and upper-income students. The study constructed the outcome measure, retention into the second year, by using measures of month-by month enrollment from survey data, with the key independent variable being the location of residency (on or off-campus) during the first year of college. The results demonstrated that students who come from low income families did not benefit from living on campus in the same way that their higher income peers did. Students living on campus and students living off campus are significantly different on all measures, except for gender, which confirms the need to match students based on their propensity to live on campus. According to this study, several indicators of

advantage, like family income and parental education, corresponded to living on campus. Schudde (2016) found that family income did not predict living on campus, but rather prior achievement measures, including high school GPA and SAT scores positively predicted the decision to live on campus, even after controlling for other measures. The results demonstrated that students from the lowest income quartile (earning below $38,511) saw null effects of living on campus, while their peers from higher incomes experienced higher rates of retention. This aligned with Schudde's theory that students from less affluent backgrounds struggle to take advantage of the rewards associated with spending time on campus which may result in feelings of isolation and incongruence if the interactions with peers associated with campus residency signal a clash between the students' cultural expectations and the norms of the college.

A recent study that examined student housing and its effect on persistence, used a sample of 33,000 first-year and sophomore students enrolled at 76 residential institutions who completed the National Survey of Student Engagement in 2018 (NSSE). The study examined factors of student engagement and factors that were related to housing which included, on- or off-campus living arrangements, residential activities, experiences with roommates, living-learning communities, financial stress, sense of belonging, and the perceived benefits of housing. The study compared students who lived independently off-campus, to on-campus residents, and found that the persistence rates of first-year and second-year students was 2.0 and 2.2 percentage points higher. The results demonstrated that first-year students benefited more from living in a campus residence hall than in accommodations off campus. However, these observed benefits were contingent upon

increased engagement in learning activities in the residence hall, including interacting

with faculty, using academic support services and participating in social, diversity-

related, and wellness activities where they live (Fosnacht et al, 2021).

On-Campus Housing Promotes Sense of Belonging

Tinto's (1985) academic and social integration model illuminated that there may

be incongruency between the demands of the institution and a student's needs and goals.

In order to have a successful adjustment to college, Tinto suggested that academic and

social aspects of the new environment need to be integrated (1987). Additionally, theories

of student retention highlight the importance of successful integration of social and

academic factors in higher education (Astin, 1993; Tinto, 1987). Some studies suggested

that a deficiency of satisfactory interpersonal relationships can lead to dropping out of

college, as well as depression, anxiety, suicide, and criminality (Hoyle & Crawford,

1994)

On-campus housing contributes to students' sense of belonging since it facilitates

the development of close relationships which give students their sense of feeling

accepted. St-Amand et al., (2017) defined the term, *sense of belonging*, with four main

attributes: First, positive emotions such as a feeling of attachment, intimacy, usefulness

and pride. Second, positive relations maintained with peers and teachers and

accompanied by encouragement, acceptance, support, respect. Third, demonstrated effort

and motivation to get involved in a meaningful way within a group. Fourth, when

necessary, maintaining harmony by the ability to adapt and adjust in order to align with

situations or people. Research by Tinto (1987) and Astin (1993) highlighted the influence

of peer relationships on student integration, adjustment to college, and cognitive development. A student's feeling of acceptance and experience of respectful interactions have a positive effect on the development of sense of belonging (Freeman et al., 2007.

A study by Freeman, Anderman, and Jensen (2007), explored relationships with a student's sense of class belonging with their academic motivation in class, with their perceptions of their instructor, and with the class and campus. The researchers hypothesized that students who felt a sense of belonging in a class would have adaptive motivational beliefs in that class. The study used two adaptations of the Psychological Sense of School Membership (PSSM) which is used to assess the levels students feel accepted, respected, and valued in the academic environment. The adaptations of the survey used Likert-type scale questions that were used to assess sense of belonging with a specific class, and sense of belonging with the campus community. The sample consisted of 238 survey respondents. The results suggested that sense of belonging in a specific class fostered increased confidence with accomplishing goals, increased interest in learning the material, and increased perception that the class material is useful. A discussion of the findings supports the previous research that sense of belonging is positively correlated with academic motivation in college students. The attributes of the instructor, encouragement for participation, and well implemented instruction design were found to have a positive relationship with sense of belonging. As for the campus environment, sense of belonging had the strongest relationship with the student's sense of social acceptance (Freeman et al., 2007).

In addition to academic environments, sense of belonging is also examined by the physical campus environment. There are important connections highlighted "between living in residence halls and both student involvement and belonging and between residence hall climate and the development of student relationships, community, and belonging" (Samura et al, p. 86, 2021). Using a multidimensional approach, a recent study explored whether factors of living on-campus or off campus influenced sense of belonging, as defined by perceptions of institutional acceptance and peer belonging, of first- and second-year students. The study used data from the National Survey of Student Engagement (NSSE) and student ratings on questions that were related to making friends, fitting in, being noticed and being involved. An exploratory factor analysis demonstrated that the residential living environment and with whom a student resides affected students' level of peer belonging and institutional acceptance for both first-year and senior students, even after controlling for student demographics, college experiences, and institutional characteristics. As can be assumed, students who had roommates compared with students who lived alone, reported higher levels of peer belonging. First-year students who lived off-campus but were not within walking distance to campus reported lower levels of belonging as did senior students who lived off-campus whether they were within walking distance or not (Dumford et al., 2019).

Similar to a sense of belonging, a study explored the effect of different architectural types of residence halls on sense of community. The study used a survey that collected responses from 610 students, 70 percent of them were female, and the classes were made up of 30.0 percent freshmen, 26.2 percent sophomores, 21.1 percent

juniors, and 22.6 percent seniors. The survey was composed of two scales dealing with a sense of community and environmental characteristics. Analyses found an interesting finding: income variable and the size of the dorm room as compared to home were significant predictors of a sense of community. Specifically, the higher the reported family income and the less space the dorm room was judged to have in comparison to the student's room at home were significant. The findings also suggested that those in the large buildings judged their rooms to be smaller. The results of the study found that clusters or "pods" of suites as compared to a building with a traditional corridor, related to a lower sense of community on these established measures, but that size of the building is a mediating factor. The study indicated that the corridor style building structure is not negative and that it actually fosters a greater sense of community than was the case for students living in a residential design based on clusters of rooms. These findings are in contrast to early research in which residents of corridor-based housing were not believed to engage in groups based on their proximity in the residence hall. The traditional corridor style was ranked highest in flexibility in this study, which encompassed variables such as opportunities to make friends, freedom to alter, and hominess (Devlin et al, 2008).

Overall, a great deal of literature has found that living on campus has a positive impact on students' academic achievement and retention, as well as sense of belonging and engagement. Students who feel more engaged and connected with their institution, and are more invested in their academic goals, are more likely to be retained for the second academic year. Given the importance of the first-year experience, it is important

to understand the role that the physical, residential environment plays on first-year

student outcomes.

CHAPTER 3

METHODOLOGY

Introduction

This study was conducted at a large, urban, public research institution in the Mid-Atlantic region of the United States. The university has a total enrollment of approximately 40,000 students, of whom about 30,000 are undergraduates. Entering first time full-time freshman classes contain approximately 5,000 students each year, and 75 percent of them live in university owned or university-affiliated housing. The typical yearly occupancy in University (on-campus) housing is 5,400 students, nearly 80 percent of them are occupied by first-time freshman students. This was a non-experimental research study utilizing a correlational approach with an explanatory design to explore the relationship of residential factors with student outcomes, behavior, and engagement.

Research Design and Instrumentation

This study was a quantitative research design and qualitative components. All of the data were collected within one institution. The quantitative component consisted of three data sets that were merged. The latter component consisted of interview data that gave depth to the quantitative analyses. See Table 3.1 for the relationship between the research questions and the data sources.

The quantitative data sets contributed to the exploration how on-campus housing and its characteristics have an effect on student achievement, conduct behavior, and engagement with the institution. The qualitative data augmented the quantitative data set and was used to answer questions related to student engagement. Throughout this study,

the term *student* refers to any individual who was enrolled full time or part time at the institution within the relevant academic year. The terms *on-campus housing*, *university housing*, and *student housing*, will be used interchangeably throughout this document. The other relevant terms are *university-affiliated,* where students are housed, but the ownership of the building is not provided by the university, and the term *university-owned* refers to buildings that are owned and maintained by the university. For this institution, university affiliated buildings have a master lease P3 agreement, in which the company maintains the physical aspects the buildings, while occupancy, assignments, and billing is managed by the institution.

Table 3.1
Relationship between Research Questions and Data Sources

Domains	Research Questions	Data Source
Student Academic Achievement	1. How do different residence hall room types affect student achievement?	Student Characteristics and Achievement
	2. How do different residence hall room types affect student retention from the first to second year?	Student Characteristics and Achievement
	3. Is there a difference in student achievement and retention between students who live in university owned on-campus housing and university affiliated campus housing?	Student Characteristics and Achievement
	4. Do students who live on campus differ from students who do not in terms of academic achievement?	Student Characteristics and Achievement
Student Behavior	1. How do residence hall room types affect student behavior?	Student Characteristics and Achievement
		Student Conduct Violations
	2. How does on-campus residence hall room type affect student behavior related to conduct violations in terms of student demographics?	Student Characteristics and Achievement
		Student Conduct Violations
	3. How does on-campus residence hall room type affect student behavior in terms of student retention?	Student Characteristics and Achievement
		Student Conduct Violations

Table 3.1 Continued
Relationship between Research Questions and Data Sources

Domains	Research Questions	Data Source
Student Engagement	1. Does choice of residence affect the level of engagement?	Student Characteristics and Achievement
		Student Experience and Housing Survey
		Student Experience Interviews
	2. How does engagement differ among various student demographics?	Student Characteristics and Achievement
		Student Experience and Housing Survey
		Student Experience Interviews
	3. Do room types affect engagement of students who live in university housing?	Student Characteristics and Achievement
		Student Experience and Housing Survey
		Student Experience Interviews

Quantitative Data Sets

Student Characteristics and Achievement

The first and most comprehensive data set, Student Characteristics and

Achievement (N =37048), was composed of the records of first- and second-year students

enrolled at the institution between the 2014-2019 academic years. The data were obtained

from the institution's Office of Institutional Research and Assessment (IRA) which

collects and reports a variety of data across the university including but not limited to;

enrollment reports, admissions census information, and graduation and retention reports.

The data set provided a breadth of information including student demographics (gender,

ethnicity, age), enrollment status (academic year, school, major, freshman/transfer),

financial status (merit recipient, amount of unmet need, Pell recipient), residential

information (home, off-campus and on-campus address) and finally, academic

performance (end of first-year GPA, second-year fall GPA). The Student Characteristics and Achievement data file was analyzed to examine the relationship between student academic achievement and on-campus housing, controlling for confounding factors.

Five academic cohorts were used to identify patterns throughout the course of those years. Five consecutive cohorts were analyzed to provide an accurate population sample and to decrease the possibility a confounding factor or historical event would affect the outcome of the analyses. The purpose of selecting only first- and second-year students in this analysis, is for the following reasons, the majority of students living in on-campus housing in this particular institution are first- and second-year students, the first year and second year is likely to determine the student's academic performance for subsequent academic years, and finally, the academic performance after the first year is likely to determine student retention for the following year, and students retained after the second year are likely to be retained for the third and fourth year. The data were comprised of 19,922 female and 17,100 male students (53.8%, 46.2%). There were 20,594 (55.6%) students who resided in on-campus residence halls from this data set. Since entire admission cohorts were used as the sample, it is representative of the population of students enrolled at the institution.

Additional residential variables were added to this data set. In all, the institution owns and manages eight buildings. Two are affiliated with the university, meaning that they are privately owned and managed. Table 3.2 provides details about each residence hall building structure, including the total occupancy, the number of first-year students residing in the building, the major room type configurations, the number of stories, and whether it is university owned or affiliated. It was analyzed to explore the relationship between demographic, academic, enrollment, financial and housing variables and their effects on student academic outcomes (GPA and retention). In order to answer research questions related to academic achievement, Tables 3.2 and 3.3 provide information

regarding the residence halls and room types that were included in the study.

Table 3.2
Residence Hall Building Descriptions

Building	Total Occupancy	Total First-Year students	Room Type	Floors	Owned/Affiliated Building
BI Apartments	191	0	Apartment	4	Affiliated
CB Hall	1044	668	Suite/Apartment	5	Owned
ED Hall	737	737	Single Studio/ Suite	12	Affiliated
EJ Apartments	148	0	Apartment	4	Affiliated
JH Hall	977	977	Double	11	Owned
LW Hall	510	455	Suite	5	Owned
MO Tower	1,275	729	Apartment	33	Owned
PB Hall	287	287	Double	4	Owned
PO Complex	125	0	Apartment	7	Owned
TT Tower	630	0	Apartment	6	Owned
WH Hall	558	558	Suite	4	Owned

As is demonstrated in Table 3.2, room types vary by size, amenities, bathroom format, number of roommates, and can encompass a high degree of variability within the same type of room category, as is presented with apartment style room type. Table 3.3 provides information regarding the various types of room configurations that are options for students in on-campus housing. First-year students reside in the majority of residence hall buildings with the exception of PO Complex, TT Tower and EJ Apartments. PO Complex is located furthest away from campus (approximately 2 miles) and is an option

only for graduate students. Although the population of interest is undergraduate students only, the Student Characteristics and Achievement data file included students who resided in the PO Complex and therefore the building was also included in this study.

Table 3.3
Room Type Configuration Descriptions

Room Type Label	Room Type Description
No On-Campus Residence	Commuter, living at home, living off campus
Single	1 person 1 bedroom, 1 person 1-bedroom studio
Double	2-person, 1 bedroom, 2-person, 1-bedroom studio
Triple/Lounge	3-person, 1 bedroom, 4-person, 1 bedroom
Suite	4-person 2-bedroom w/ bathroom, 2-person 1-bedroom studio
Apartment	5-person 3-bedroom, 2-person 1-bedroom, 6-person 3-bedroom, 7-person 4-bedroom, 3-person 2-bedroom, 7-person 4-bedroom (All include living room, kitchen, bathroom)
Single Double	2-person 2-bedroom w/Bathroom, 2-person 2-bedroom apartment

Table 3.4 provides a description of the additional variables that were created for the analyses.

Table 3.4
Description of Housing Variables

Housing Variables	Description
Buildings	BI&EJP (Combines BI Apartments, EJ Apartments, and PO Complex), CB Hall, ED Hall, JH Hall, LW Hall, MO Tower, PB Hall, TT Tower, and WH Hall.
Room Types	Individual room types within on-campus housing (Single, Double, Triple/Lounge, Suite, Apartment, and Single Double).
Room Type Congestion	Degree of congestion in a room type unit which ranged from .29 individuals (triple/lounge) to 1 individual (single).
People per Unit	Number of residents in a unit (room) in on-campus housing which ranged from 1 (single) to 5 (apartment).
University Housing Type	Distinguishes buildings that are university owned, university affiliated, or have no connection to the university.

Student Conduct Violations

The second data set, Student Conduct Violations (N= 4,635), was obtained from the Office of Residential Life, and provided information and records of violations of the community code of conduct that occurred between the 2014-2020 academic years. This data set included student level information of each respondent, as well as details such as the incident date, incident location, violation code, and resolution (judicial consequences and hearing information). This data set is not a conclusive report of the conduct violations recorded among all enrolled students, but rather, only includes incidents that occurred in on-campus residence halls.

Among the variables included in this dataset were: information identifying the student, the date of the incident, type of violation, the location the incident occurred, as well as information regarding the sanctions and conduct hearing. Five academic cohorts were used to identify patterns, and to decrease the possibility a confounding factor or historical event would have an effect on student behavior and conduct. The cohorts of the

sample were selected to maintain consistency with the Student Characteristics and Achievement data file. This data set was used to answer research questions that examined the relationship among on-campus housing and student behavior.

Six individual conduct violation files were obtained with incident records separated by each academic year (2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019 and 2019-2020 academic years). The data sets varied slightly as there was a change in the behavior tracking software. The input of student information and violation records was not consistent among all files.

The files were merged only including information that was included in all files. The relevant variables were student name, identification number, incident date, incident location (residence hall building), violation, hearing findings, and hearing sanction. Two additional variables were created that compressed conduct records, one variable for the number of incidences per year per student, and a separate variable for the total number of incidences per student across all five years (the maximum number was 11 incidences).

Student Experience and Housing Survey

The third data set is a cross-sectional Student Experience and Housing Survey (N = 239) that was sent to students via email from the 2014-2019 academic year cohorts. The self-administered survey included open-ended, multiple choice, and Likert scale questions that included student demographic, financial, and residential questions, as well as questions that were related to student participation and engagement with social and academic aspects of campus life. The Student Experience and Housing Survey was used to examine the relationship between student engagement and on-campus housing.

The Student Experience and Housing Survey was developed using a modified version of the National Survey of Student Engagement (2001). The survey was composed of 60 questions consisting of 12 multiple-choice questions, nine free text questions, and 39 questions structured in a matrix format using a Likert scale. The survey questions

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covered five categories; background and demographic information, participation in educationally purposeful activities, participation and perception of social activities, perceptions of the college environment, estimates of educational and personal growth. The survey was created using "Wufoo," an electronic cloud-based form builder, and all survey questions are documented in Appendix A.

An email was sent to approximately 37,000 students between May 10, 2021 and June 6, 2021 using the institutional email addresses from student records obtained from the Student Characteristics and Achievement data file. The email provided a brief description of the research, the prize for participation, and included a link to the survey (See Appendix B). The deadline to complete the survey was June 10, 2021. The survey was deployed electronically for approximately four weeks; however, confined by the institutional regulations, I was only permitted to send 500 survey emails per every 24 hours. Approximately 11,000 student emails were returned as undeliverable, since the email address was no longer recognized or valid. There were 362 responses to the survey; however, not all of the surveys were completed in full, so only 239 survey results were able to be used in the data analysis. The survey respondents were made up of 159 female and 80 male students. Almost half (47%) of the 239 responses were from students first enrolled at the institution for the 2018-2019 academic year.

<div align="center">Qualitative Data</div>

<div align="center">*Student Experience Interviews*</div>

At the end of the Student Experience and Housing Survey, respondents were asked if they would be willing to be interviewed and if they were, they were asked to provide a contact email. This was the only time when student names were collected. I contacted the students who indicated that they would want to be interviewed by email, see Appendix C. The interviews were conducted virtually and at the respondents' convenience. The interviews were semi-structured in a conversational format with open-

ended questions that focused on the student's experiences on campus academically and socially. The Student Experience Interviews (N= 12) were used to augment data from the Student Experience and Housing Survey and to provide an in-depth exploration of the connection between student engagement and student success. The interview questions used to structure the interviews are documented in Appendix D.

All participants who completed a follow-up interview, were students who submitted the Student Experience and Housing Survey. The survey included all students who were enrolled in the institution from 2014-2019. There were 163 survey participants who selected that they agreed to participate in a follow-up interview. Out of 45 participants who responded to the availability poll, I completed interviews with 12 of them. The sample was comprised of ten female and two male students; four of the twelve were transfer students. The class standing of the students was one junior, five seniors, and six who have recently graduated from the university. Seven students from this sample resided in university housing for at least one academic year.

CHAPTER 4

DATA ANALYSIS AND RESULTS

Introduction

This study focused on student housing and its relationship with three separate areas of interest; academic achievement, behavior, and engagement. Each topic was examined by a separate set of research questions and data analyses. The independent demographic variables included students' gender, race/ethnicity, state residency, amount of unmet (financial) need, college major, transfer status, athlete status, and age. Additional independent variables used were related to student residency such as, housing type, on-campus room type, on-campus room congestion, building type, and number of students per unit. The dependent variables used in this study were related to academic achievement (GPA and retention), number of student conduct violations, and engagement. Table 4.1 demonstrates the relationships between the topics, research questions, data sources, and analyses for both the quantitative and qualitative data in this study.

Table 4.1
Domains, Research Questions, Data Sources, and Analyses

Domains	Research Questions	Data Source	Analyses
Academic Achievement	1. How do different residence hall room types affect student achievement and retention from the first to second year?	Student Characteristics and Achievement	Bivariate statistics (Chi-Square Test, ANOVA
	2. Is there a difference in student achievement and retention between students who live in university owned on-campus housing and university affiliated campus housing?	Student Characteristics and Achievement	Bivariate statistics (Chi-Square Test, ANOVA).
	3. Do students who live on campus differ from students who do not in terms of academic achievement?	Student Characteristics and Achievement	Multivariate statistics (Regression)
Student Behavior	1. How do residence hall room types affect student behavior?	Student Characteristics and Achievement	Bivariate statistics (ANOVA)
		Student Conduct Violations	
	2. How does on-campus residence hall room type affect student behavior related to conduct violations in terms of student demographics?	Student Characteristics and Achievement	Multivariate statistics (Regression)
		Student Conduct Violations	
	3. How does on-campus residence hall room type affect student behavior related to conduct violations in terms of student retention?	Student Characteristics and Achievement	Multivariate statistics (Regression)
		Student Conduct Violations	

Table 4.1 Continued
Domains, Research Questions, Data Sources, and Analyses

Domains	Research Questions	Data Source	Analyses
Student Engagement	1. Does choice of residence affect the level of engagement of first-year students?	Student Characteristics and Achievement	Multivariate statistics (Regression)
		Student Experience and Housing Survey	
		Student Experience Chats	Qualitative Analysis (Grounded Theory)
	2. How does engagement differ among various student demographics?	Student Characteristics and Achievement	Multivariate statistics (Regression)
		Student Experience and Housing Survey	
		Student Experience Chats	Qualitative Analysis (Grounded Theory)
	3. Do room types affect engagement of students who live in university housing?	Student Characteristics and Achievement	Multivariate statistics (Regression)
		Student Experience and Housing Survey	
		Student Experience Chats	Qualitative Analysis (Grounded Theory)

Quantitative Analysis

Academic Achievement Bivariate Analysis: Room Types as Determinants of GPA

A Chi-square test analysis was used to explore the relationship between student housing and academic achievement. An assessment of the relationship between first-year GPA, second-year fall GPA, and room type was conducted. There are five categories of first-year and second-year GPA, which align with the university's categories of letter grades and points (A=3.34-4.0, B=2.67-3.33, C=1.67-2.66, D=0.67-1.66, F=0.0-0.66).

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The categorical GPA variables were selected for this analysis and others to provide a clear indication of the letter grade that is associated with each GPA category range. A GPA of 0.66 and lower is a failing grade. The room type variable consists of six different room type configurations that are included in this analysis.

This analysis indicated that particular room type configurations have a significant relationship on first-year GPA. One can reject the null hypothesis between room type in university housing and first-year GPA (χ^2=1465.460, ρ<.001). A test of Cramer's V result (φ_c =.099) indicated a weak effect size. As shown in Table 4.2, on a percentage basis, students with the highest first-year GPA (3.34-4.0) resided in traditional double room and suite room types (46.4%, 51.4%). On a percentage basis, the highest percentage of students with a failing GPA did not reside on campus (4.1%) or lived in a single room type by themselves (3.8%). Students with the highest percentage of the lowest passing GPA of 0.67-1.66, did not live on campus (5.8%) or lived in a single accommodation (5.1%).

A similar pattern is demonstrated with second-year students. One can reject the null hypothesis between room type in campus housing and second-year fall GPA (χ^2=1040.559, ρ<.001). A test of Cramer's V result (φ_c =.090) indicated a weak effect size. As presented in Table 4.3, on a percentage basis, second-year students with the highest GPA after the fall semester (3.34-4.0) resided in a double room, a suite and a triple/lounge room type (42.7%, 47.6%, and 41.8%). The highest percent of students with a failing grade for the second fall semester, lived by themselves in a single room type (2.5%). On a percentage basis, the highest percent of students with the lowest, but

passing, second fall semester GPA (0.67-1.66) lived in a single room type (2.5%) or did

not live in campus housing (2.5%). Analyses from both models yielded similar results

and are reported in Tables 4.2 and 4.3

Table 4.2

Distribution of End of First-Year GPA and Room Type

First-Year GPA	No On-Campus Residence	Single	Double	Triple/ Lounge	Suite	Apartment	Single Double	Total
0-0.66	677 (4.1%)	3(3.8%)	68(1.3%)	9(2.0%)	128(1.4%)	58(1.6%)	49(2.5%)	992(2.7%)
0.67-1.66	951(5.8%)	4(5.1%)	153(3.0%)	14(3.1%)	226(2.4%)	112(3.0%)	79(4.0%)	1539(4.2%)
1.67-2.66	3786(23.0%)	16(20.3%)	755(14.9%)	72(15.8%)	1253(13.4%)	628 (17.0%)	343(17.3%)	6853(18.5%)
2.67 - 3.33	5811(35.3%)	22(27.8%)	1743(34.4%)	155(34.1%)	2922(31.4%)	1366(37.0%)	734(37.1%)	12753(34.4%)
3.34 - 4.0	5229(31.8%)	34(43.0%)	2351(46.4%)	205(45.1%)	4789(51.4%)	1528(41.4%)	774(39.1%)	14910(40.2%)
Total	16454	79	5070	455	9318	3692	1979	37047

Note. (χ^2=1465.460, ρ<.001)

Table 4.3
Distribution of Second-Year Fall GPA and Room Type

Second-Year Fall GPA	No On-Campus Residence	Single	Double	Triple/Lounge	Suite	Apartment	Single Double	Total
0 -0.66	57(0.3%)	2(2.5%)	6(0.1%)	0(0.0%)	20(0.2%)	9(0.2%)	5(0.3%)	99(0.3%)
0.67-1.66	416(2.5%)	2(2.5%)	82(1.6%)	9(2.0%)	124(1.3%)	45(1.2%)	35(1.8%)	713(1.9%)
1.67-2.66	3155(19.2%)	17(21.5%)	660(13.0%)	66(14.5%)	1056(11.3%)	497(13.5%)	279(14.1%)	5730(15.5%)
2.67 - 3.33	5570(33.9%)	17(21.5%)	1686(33.3%)	142(31.2%)	2808(30.1%)	1347(36.5%)	702(35.5%)	12272(33.1%)
3.34 - 4.0	4708(28.6%)	24(30.4%)	2167(42.7%)	190(41.8%)	4440(47.6%)	1395(37.8%)	675(34.1%)	13599(36.7%)
Total	16454	79	5070	455	9319	3692	1979	37048

Note. (χ^2=1040.559, ρ<.001).

Academic Achievement Bivariate Analysis: Room Types as Determinants of Retention

I can reject the null hypothesis between room type and students who are retained and not retained after the first semester of the second year (χ^2=290.549, ρ<.001). A test of Cramer's V (φ_c =.089*)* indicated a weak effect size. As shown in Table 4.4, on a percentage basis, the highest percent of students retained for a second year resided in traditional double room and suite room types (90.7%, 90.7%). For students not retained, the highest percent of them lived in a single room type (21.5%) or they did not reside in campus housing (15.5%).

Table 4.4
Distribution of Retained for Fall Second-Year and Room Type

	Not Retained	Retained	Total
No On-Campus Residence	2548(15.5%)	13906(84.5%)	16454
Single	17(21.5%)	62(78.5%)	79
Double	469(9.3%)	4601(90.7%)	5070
Triple/Lounge	48(10.5%)	407(89.5%)	455
Suite	871(9.3%)	8448(90.7%)	9319
Apartment	399(10.8%)	3293(89.2%)	3692
Double Single	283(14.3%)	1696(85.7%)	1979
Total	4635(12.5%)	32413(87.5%)	37048

Note. (χ^2=290.549, ρ<.001).

Academic Achievement Bivariate Analysis: Housing Type as Determinants of GPA

A Chi-square test analysis of first-year GPA and housing type demonstrated a significant relationship between the two variables. The independent variable, housing type, differentiated between students who did not reside in on-campus housing, or resided

in either university owned or university affiliated residence halls. Housing type resulted

in a significant relationship with first-year GPA (χ^2=1354.004, ρ<.001). A test of

Cramer's V (φ_c =.135) indicated a weak effect size. Findings indicated that the percent of

students in the highest GPA category (3.34-4.0) resided in university owned residence

halls. The lowest percent of students in the top GPA category did not reside in university

housing (31.8%). In further interpretation of the analysis, the highest percent of students

in lower GPA categories (3.33 and lower) did not reside in university housing compared

with students who lived in university owned or university affiliated buildings. The results

are presented in Table 4.5.

Table 4.5
Distribution of First-Year GPA and Housing Type

GPA	No On-Campus Residence	University Affiliated	University Owned	Total
0.00 - 0.66	676(4.1%)	51(3.7%)	265(1.4%)	992(2.7%)
0.67 - 1.66	952(5.8%)	69(4.9%)	518(2.7%)	1539(4.2%)
1.67 - 2.66	3786(23.0%)	257(18.4%)	2810(14.6%)	6853(18.5%)
2.67 - 3.33	5811(35.3%)	481(34.4%)	6461(33.7%)	12753(34.4%)
3.34 - 4.0	5228(31.8%)	539(38.6%)	9143(47.6%)	14910(40.2%)
Total	16453	1397	19197	37047

Note. (χ^2=1354.004, ρ<.001).

When examining the relationship of second-year fall GPA for students who

resided in university owned and university affiliated residence hall buildings, a Chi-

square test analysis demonstrated that the null hypothesis can be rejected between

university owned and university affiliated buildings and second-year fall GPA

(X^2=1170.747, ρ<.001). Cramer's V (φ_c =.117) indicated a weak effect size. The highest

percent of second-year students with a GPA between 3.34-4.0 lived in university owned

campus housing (43.9%). As shown in Table 4.6, on a percentage basis, the highest

percent of students with a GPA between 0.67-1.66 either did not reside in campus

housing or resided in university affiliated housing (2.5%, 2.4%).

Table 4.6
Distribution of Second-Year Fall GPA and Housing Type

GPA	No On-Campus Residence	University Affiliated	University Owned	Total
No GPA Recorded	2549(15.5%)	223(16.0%	1863(9.7%)	4635(12.5%)
.00 -.66	57(0.3%)	7(0.5%)	35(0.2%)	99(0.3%)
0.67-1.66	415(2.5%)	33(2.4%)	265(1.4%)	713(1.9%)
1.67-2.66	3155(19.2%)	219(15.7%)	2356(12.3%)	5730(15.5%)
2.67 - 3.33	5570(33.9%)	451(32.3%)	6251(32.6%)	12272(33.1%)
3.34 - 4.0	4708(28.6%)	464(33.2%)	8427(43.9%)	13599(36.7%)
Total	16454	1397	19197	37048

Note. (χ^2=1170.747, ρ=.001).

In addition to the Chi-square test analysis, one-way analysis of variance was

performed to analyze the effect of housing type (no university housing, university owned

housing, university affiliated housing) on academic achievement (first-year GPA). The

analysis revealed that there was a statistically significant effect of housing type on first-

year GPA (F(2, 37044) = 717.029, *p*=.000). Tukey's HSD and Bonferroni's Test for

multiple comparisons found that the differences between all three housing types was

significant on students' first-year GPA.

The mean value of first-year GPA was significantly different between students who resided in university owned housing (M=3.1484, SD =.70795) to those who did not reside in on-campus housing (M =2.8274, SD =.89198) and to those who resided in university affiliated housing (M= 2.9313, SD=.86149).

Table 4.7
One-Way Analysis of Variance of Housing Type and First-Year GPA

Source	df	SS	MS	F	p
Between Groups	2	919.282	459.641	717.029	.000
Within Groups	37044	23746.512	.641		
Total	37046	24665.794			

Note. (F(2, 37044) = 717.029, p=.000)

The results of these analyses indicate that there is a significant difference in student academic achievement between students who live in university owned housing and university affiliated housing. Students who live in university owned housing have higher GPAs than students who live in university affiliated housing. There is a difference in academic achievement of students who live in on-campus residence halls and those who do not, with higher GPA for students living in university housing as compared to the students who do not.

Academic Achievement Bivariate Analysis: Housing Type as Determinants of Retention

A Chi-square test analysis of housing type and retention for second year demonstrated a significant relationship between the two variables. The independent variable, housing type, differentiated between students who did not reside in on-campus housing, or resided in either university owned, or university affiliated residence halls.

Second-year fall GPA was operationalized as the retention variable. Students who did not

have a GPA for the second-year fall semester were not retained for the second year at the

institution. Housing type resulted in a significant relationship with second-year fall GPA

(χ^2=286.890, p<.001). It is worth acknowledging that a test of Cramer's V (φ_c=.088)

indicated a weak effect size. See Table 4.8 for results of the analysis.

The highest percent of students who were retained for the second year resided in

university owned residence halls (90.3%). Interestingly, results showed that there was

only a 0.5 percent difference in retention between students who did not reside in

university housing to those who resided in university affiliated residence halls (84.5%,

84%). Among the three variables, the lowest percent of students who were not retained

for the fall semester of their second year resided in university owned housing.

Table 4.8
Distribution of Retention for Second-Year by Housing Type

	No University Housing	University Affiliated	University Owned	Total
Not Retained	2549(15.5%)	223(16.0%)	1863(9.7%)	4635(12.5%)
Retained for Second Year	13905(84.5%)	1174(84.0%)	17334(90.3%)	32413(87.5%)
Total	16454	1397	19197	37048

Note. (χ^2=286.890, p<.001).

*Academic Achievement Multivariate Analysis: Housing Types and Student Demographics
as Determinants of First-Year GPA*

Multiple regression analysis was used to test if the demographic variables and

housing types significantly predicted the GPA of first-year students. The analysis also

included school majors in order to examine if there was a relationship with first-year

GPA as well. The dependent variable is first-year GPA as a scale. The results of the

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regression indicated that the 13 predictors explained 13.8% of the variance (R^2 =.138, $F(13, 37025)$ =454.505, p=.000). The F stat 454.505 was significant (p=.000) allowing us to reject the null hypothesis of no relationship between the first-year GPA and the independent variables taken together.

The analysis demonstrated that all 13 variables were predictors of first-year GPA. All other things equal, being a state resident subtracted .064 points and being a transfer student subtracted .122 points from first-year GPA. All other things equal, every US Dollar amount of unmet need subtracted points from first-year GPA, while being a merit recipient added .317 points. All other things equal, being of White racial ethnicity added .212 points to GPA, while being of male gender subtracted .182 points from first-year GPA. Students enrolled in the Colleges of Music and Dance Art and Architecture, added to first-year GPA by .085 points. Students enrolled in Colleges of Business Sport, Tourism and Hospitality Management, subtracted from first-year GPA by .064 points. Additionally, students enrolled in Colleges of Public Health and Social Work subtracted from first-year GPA by .063 points, as did enrollment in the College of Science and Technology which subtracted from GPA by .212 points. Housing types was represented by three residence hall buildings, JH Hall, CB Hall and ED Hall. JH Hall and CB Hall are university owned facilities, while ED Hall is university affiliated. All other things equal, residing in university owned housing added to first-year GPA and residing in the university affiliated housing subtracted points from GPA. JH Hall added .065 points and CB Hall added .217 points to first-year GPA. ED Hall subtracted .047 points from first-year GPA. See Table 4.9 for further details. All other variables being equal, being a merit

recipient had the strongest relationship on the dependent variable (β=.193). These findings support the theory that housing types had a significant relationship on the dependent variable, however, certain student demographics also indicate a strong effect on first-year GPA. The results demonstrated that residing in university owned residence halls added to first-year GPA, while residing in a university affiliated residence hall subtracted from it. This was a consistent finding other among other analyses that included housing types.

Table 4.9
Multiple Regression of Housing Types, Student Demographics and First-Year GPA

	B Coefficients	β	t
State Resident	-0.064	-0.035	-6.973***
Student was a Transfer	-0.122	-0.071	-13.070***
Amount of Unmet Financial Need	-7.609E-06	-0.113	-22.365***
Student was a Merit Recipient	0.317	0.193	38.615**
Male Gender	-0.182	-0.111	-22.445***
White Racial Ethnicity	0.212	0.129	25.638***
College of Business/Sport, Tourism Hospitality Management	-0.064	-0.034	-6.271***
College of Public Health/Social Work	-0.063	-0.023	-4.474***
College of Science & Technology	-0.212	-0.099	-18.623***
College of Music & Dance/ Art & Architecture	0.085	0.026	5.193***
JH Hall	0.065	0.028	5.387***
CH Hall	0.217	0.079	15.125***
ED Hall	-0.047	-0.011	-2.256***
(Constant)	3.113		184.259

Note. Dependent variable is GPA End of First-Year

*p < .05, **p=.001, ***p < .001

Behavior Bivariate Analysis: Room Types as Determinants of Occurrences of Conduct Violations

The following analyses examined the relationship of on-campus housing and student behavior. A one-way analysis of variance was performed to compare the effect of room type on total number of conduct violations per student. The analysis revealed that there was a statistically significant effect of room types and conduct violations allowing us to reject the null hypothesis of no relationship. Since the group sizes were unequal, the harmonic mean sample (*M*=376.49) of the group sizes was used. Students with the least number of total student conduct violations across the data set, resided in single room types (*M*=.2025, *SD*=.43500). The highest number of violations occurred with students in apartment room types (*M*=.4331, *SD*=.76472). An analysis of variance revealed significant between-groups differences ($F(2, 20587) = 6.979$, *p*=.000).

As is demonstrated with results from a one-way analysis of variance in Table 4.10, the results suggest that students who resided with the highest number of roommates in university housing, had a higher number of total incidences than students who resided in singles, doubles or suites.

Table 4.10
One-Way Analysis of Variance of Total Number of Conduct Violations and Room Type

Source	*df*	*SS*	*MS*	*F*	*p*
Between Groups	5	62.905	12.581	26.979	.001
Within Groups	20587	9600.196	.466		
Total	20592	9663.101			

Note. ($F(2, 20587) = 6.979$, *p*=.000).

Tukey's HSD Test for multiple comparisons is referenced in Table 4.11. The test found that the mean value of total number of conduct violations was significantly different between students who were in a single room type (M=.2025, SD=0.43500) to those who were in an apartment room type configuration (M=.4331, SD=0.76472).

The mean differences were significant between the following; suite and an apartment, a suite and a triple/lounge, a suite and a single double, a double and an apartment, a double and a triple/lounge, and a double between single double room type. Results indicated a marginal significance between the total number of incidences between and an apartment and a single double room type.

Results indicated a non-significant result between a single room type and a triple/lounge, single double, double, and a suite. There was a non-significant result between triple/lounge and an apartment and single double room type.

Table 4.11

Tukey HSD Multiple Comparisons Total Number of Conduct Violations and Room Type

			95% Confidence Interval	
Room Type 1	Room Type 2	Mean Difference	Lower	Higher
Single	Apartment	-.23057*	-0.45	-0.01
Suite	Apartment	-.13958**	-0.18	-0.10
Double	Apartment	-.12087**	-0.16	-0.08
Suite	Triple/Lounge	-.11967*	-0.21	-0.03
Double	Triple/Lounge	-.10096*	-0.20	-0.01
Suite	Single Double	-.08950***	-0.14	-0.04
double	Single Double	-.07079*	-0.12	-0.02
Triple/Lounge	Single	0.21	-0.03	0.45
Single Double	Single	0.18	-0.04	0.40
Double	Single	0.11	-0.11	0.33
Suite	Single	0.09	-0.13	0.31
Apartment	Single Double	0.05	0.00	0.10
Triple/Lounge	Single Double	0.03	-0.07	0.13
Apartment	Triple/Lounge	0.02	-0.08	0.12
Suite	Double	-0.02	-0.05	0.02

Note. *p < .05, ** p=.000, ***p < .001

Behavior Bivariate Analysis: Buildings as Determinants of Conduct Violations

Considering that the data set of student conduct violations only included students who resided in university housing, a test of housing types with student conduct violations would not result in an accurate finding. In an attempt to explore the relationship of university affiliated and university owned residence halls on the number of student conduct violations, residence hall buildings were included as the independent variable. A one-way analysis of variance was performed to compare the effect of building type on total number of conduct violations per student. The analysis revealed that there was a statistically significant effect of building type on conduct violations allowing us to reject the null hypothesis of no relationship.

An analysis of variance revealed significant between-groups differences ($F(8, 37038) = 533.169$, $p=.000$). Results showed that students with the highest overall number of total student conduct violations across the data set resided in building MO Hall ($M=.458$, $SD=.776$). The second highest number of violations occurred in WH Hall ($M=.355$, $SD=.776$). Both MO Hall and WH Hall are university owned buildings. It is important to acknowledge that MO Hall also has the largest occupancy of all of the buildings included in the analysis. Results indicate that the lowest number of total conduct violations occurred in BI&EJP ($M=.172$, $SD=.422$), which are university affiliated residence halls. However, the population of students is significantly lower in those buildings which has the potential to result in less violations. The building with the second lowest number of conduct violations was CB Hall ($M=.243$, $SD=.544$), a university owned building. Although the analysis demonstrates a significant relationship,

there are potentially other confounding variables that affect the relationship outside of

university owned or affiliated building types.

Table 4.12
One-Way Analysis of Variance of Total Number of Conduct Violations and Building

Source	df	SS	MS	F	p
Between Groups	8	1109.888	138.736	533.169	.000
Within Groups	37038	9637.662	.260		
Total	37038	10747.549			

Note. (F(8, 37038) =533.169, *p*=.000)

*Behavior Multivariate Analysis: Room Types and Student Demographics as the
Determinants of Conduct Violations*

A one-way analysis of variance was performed to examine the relationship

between conduct violations and gender. The analysis revealed that there was a

statistically significant effect between student gender and conduct violations allowing us

to reject the null hypothesis of no relationship. An analysis of variance revealed

significant between-groups differences between males and females (F(2,37045) =14.129,

p=<.001. The results of the analysis are demonstrated in Table 4.13. Male students had a

higher number of overall conduct violations as compared to female students.

Table 4.13
One Way Analysis of Variance of Total Number of Incidences and Gender

	df	SS	MS	F	p
Between Groups	2	8.193	4.096	14.129	<.001
Within Groups	37043	10739.321	0.290		
Total	37045	10747.514			

(F(2,37045) =14.129, *p*=<.001.

A one-way analysis of variance was performed with student race/ethnicity and the total number of incidences. The analysis demonstrated a significant effect between race/ethnicity and a total number of incidences allowing us to reject the null hypothesis of no relationship ($F(7,35855) = 24.271$, $p=<.001$. See Table 4.14. The race variable consisted of African American, Native American, Asian, International, Multi Ethnic, Hispanic, White and Pacific Islander. A post-hoc test of multiple comparisons revealed that the greatest mean difference was between students of African American and International race/ethnicity.

Table 4.14
One-Way Analysis of Variance of Total Number of Incidences and Race/Ethnicity

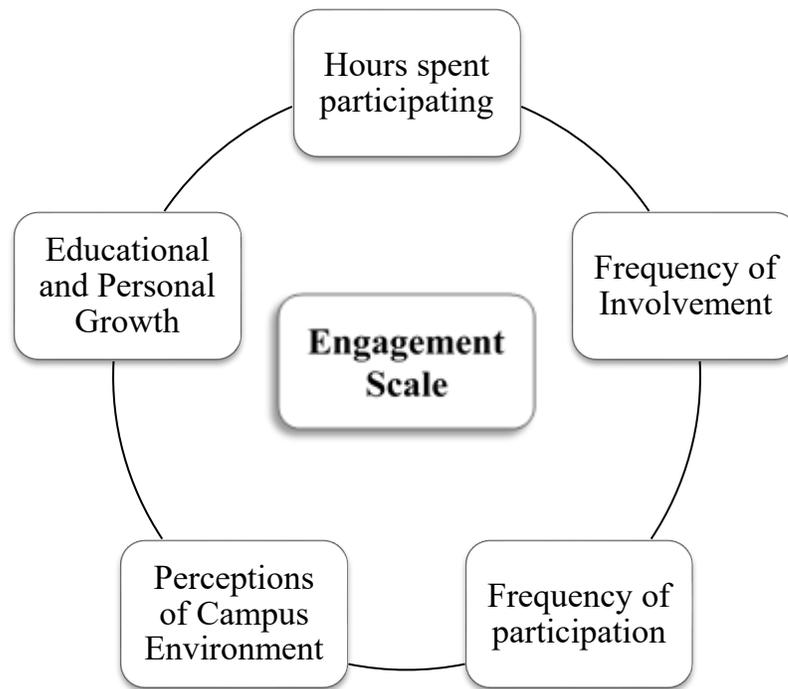|	df	SS	MS	F	p
Between Groups	7	49.057	7.008	24.271	<.001
Within Groups	35855	10353.107	0.289		
Total	35862	10402.164			

Note. ($F(7,35855) = 24.271$, $p=<.001$

Student Behavior Multivariate Analysis: Room Type and Behavior as the Determinants of Second-Year GPA

A multiple regression analysis was used to estimate the multivariate model of the relationship between room type and student behavior to determine if they significantly predicted second-year fall GPA. The dependent variable, second-year fall GPA, was indicative of retention from first to second year. Students who were not retained from their first to second year, did not have a second-year fall GPA. The independent variable, student behavior, was explained by the engagement scale in this particular analysis. Since conduct violations were representative of negative student behavior, the total engagement

scale was used to represent positive student behavior. The engagement scale was comprised of five categories of question sets taken from the Student Experience and Housing Survey. The first category, time spent participating in activities, included question responses that were related to how many hours a student spent participating in social and academic activities at the university. The second category, frequency of involvement, included responses that were related to the frequency of occurrences over time a student took advantage of, or participated in a social or academic event or program. The third category, frequency of participation, included responses of how often a student participated in academic or educationally purposeful activities. The fourth category, perceptions of campus environment, was comprised of survey responses that provided a frequency and rating of the institutional emphasis on the academic and social environment, and the students' perception of belonging and acceptance from the campus community. The fifth and final category, educational and personal growth, was comprised of responses that provided a rating of how the institution contributed to the student's social and personal development. Figure 4.1 presents The Model of Total Engagement Scale, which demonstrates the five categories that make up the engagement scale.

Figure 4.1
Model of Total Engagement Scale

The results of the regression used to estimate the relationship between room type and student behavior, indicated that the seven predictor variables were significant (R^2=.136, $F(7,145)$ =3.274, p=.003) and explained 13.6% of the variance with second-year fall GPA. The analysis demonstrated that one could reject the null hypothesis for three of the variables; gender, non-minority race and a suite room type. Of the variables, racial ethnicity and a suite room type had the strongest relationship with second year fall GPA.

All other things equal, being a male student decreased second-year fall GPA by .158 points. Identifying as White added .231 points to second-year fall GPA. The only room type to show a significant relationship with the dependent variable was a suite,

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which added .197 points to GPA. One room type variable demonstrated marginal

significance with GPA, which was a double room type. All other things equal, residing in

a double room added .176 points to second-year fall GPA. These results demonstrated

that if total engagement is equal among the sample, residing in a double room type has a

marginally significant relationship, and residing in a suite room type has a significant

relationship with second-year fall GPA. Of the variables, White racial ethnicity and suite

room type had the strongest relationship with the dependent variable (β=.232, β=.200).

See Table 4.15 for further details.

Table 4.15
Regression of Room Type and Engagement as the Determinants of Second-Year Fall GPA

	B Coefficient	β	t
Total Engagement Scale	0.000	-0.010	-0.129
Male Gender	-0.158	-0.153	-1.981*
White Racial Ethnicity	0.231	0.232	2.926*
Double Room Type	0.176	0.148	1.686
Triple/Lounge Room Type	0.221	0.076	0.953
Suite Room Type	0.197	0.200	2.204*
Apartment Room Type	0.017	0.011	0.131
(Constant)	3.245		22.749***

Note. Dependent Variable: Second-Year Fall GPA

*p < .05, **p=.000 *** p < .001

(R^2 =.136, $F(7,145)$ =3.274, p=.003)

Engagement Multivariate Analysis: Housing, Demographics and Engagement as Determinants of First-Year GPA

A multiple regression analysis was used to estimate the relationships between student achievement and engagement as captured by the test of demographic variables, housing types, and aspect of the involvement scale. The results indicated that nine predictor variables explained 8.7% of the variance with GPA ($R^2 = .087$, $F(9,20585) = 216.831$, $p=.000$). The F stat 216.831 was significant ($p=.000$) allowing me to reject the null hypothesis of no relationship between the dependent variable and the independent variables taken together. Eight of the variables were significant; total number of conduct incidences per student, student rating of institution's contribution to their development, unmet need, student rating of supportive environment, university housing, perceptions of value and belonging, room congestion, and White racial ethnicity. All other things being equal, as student conduct behavior increased, it subtracted .104 points from GPA. All other things equal, as a student rating of supportive environment increased, it added to GPA by .048 points. As perceptions of belonging to the community increased, it added to GPA by .177 points. All other things equal, being male gender, decreased GPA. All other things equal, every decimal increase in room congestion, it decreased GPA by 0.198 points.

Table 4.16

Regression of Housing, Demographics and Engagement as the Determinants of Achievement

	B Coefficient	β	t
Male Gender	-0.206	-0.141	-21.021***
Total Number of Conduct Incidences Per Student	-0.104	-0.099	-14.746***
Student Rating of Institution's Contribution to Their Development	-0.019	-0.003	-0.304
Unmet Need	-9.79E-06	-0.165	-24.569***
Student Rating of Supportive Environment	0.048	0.019	2.665*
Housing Type	0.129	0.045	6.528***
Perceptions of Value and Belonging	0.177	0.027	2.781*
Room Congestion	-0.198	-0.043	-6.208***
White Racial Ethnicity	0.225	0.15	22.328***
(Constant)	2.075		6.952

Note. Dependent Variable: First-Year GPA

$*p < .05$, $**p=.000$ $***p < .001$

Qualitative Analysis

Student Experience Interviews

The last data set used in this research study, is a qualitative data set of recorded one-on-one interviews with participants. An email was sent to survey respondents who indicated that they would like to volunteer to be interviewed. The email

provided a brief description of the interview and a link to identify availability. I emailed

the students who responded and provided their availability to confirm the date and time

of the interview. The interviews were conducted electronically in 2021 between July 15-

28th, using "Zoom," a video conferencing platform that can be used through a computer

desktop or mobile app, and allows users to connect online for video conference meetings,

webinars, and live chat. Each interview was scheduled for approximately 30 minutes, but

the duration of the interviews varied between 20-40 minutes. I used a script for each

individual interview, and informed each participant that the interview would be recorded.

I conducted 12 Student Experience Interviews with student participants, using 18

open-ended questions. The first five questions asked the participant for general

information such as name, email address, class year, transfer status and reason this

institution was selected. After the general questions, the subsequent six questions were

focused on the student's academic experience with the institution, and the last six

questions were focused on the student's social experience. The interview was concluded

with a final question that provided an opportunity for the student to include any

additional thoughts or statements. See Table 4.17 for information on interview

participants.

Table 4.17

Interview Participant Information

Interviewee	Gender	Transfer/ Non-Transfer/ International Student	Class Standing/ Graduated	First-year On-campus Room type
1	Female	Transfer	Senior	None
2	Female	Non-Transfer	Graduated	Suite
3	Female	International	Senior	Suite
4	Female	Non-Transfer	Graduated	Apartment
5	Female	Transfer	Senior	None
6	Male	Transfer	Senior	None
7	Female	Non-Transfer	Graduated	Double
8	Female	Non-Transfer	Junior	Double
9	Male	Non-Transfer	Graduated	None
10	Female	Non-Transfer	Graduated	Single
11	Female	Non-Transfer	Senior	Suite
12	Male	Transfer	Graduated	None

The qualitative data was interpreted through the lens of Tinto's (1975) and Astin's (1984) theoretical framework. Similar to the interview questions, the responses were divided into two themes, academic and social. The interview questions were related to student experiences and perceptions of the social and academic environment of the institution. The student interviews were transcribed, organized, and annotated. The data was conceptualized by aligning responses into the main academic and social themes. The academic theme was defined by students' experiences and perceptions of the academic settings, interactions with faculty and advisors, and experiences with their classrooms and majors. The social theme was defined by the student's involvement in extracurricular

activities, positive relationships with peers, and perceptions and experiences with the campus community. As the data was transcribed, various sub-themes emerged from participant responses and were included in either academic or the social categories. The sub-themes that emerged from the interviews enhanced and supported the quantitative analysis of this study and provided a deeper perspective to research questions related to student engagement. Table 4.18 demonsrates the academic and social sub-themes.

Table 4.18
Academic and Social Sub-themes of Interview Data

Academic Themes	Social Themes
Challenges with Academic Advising	Challenges with Forming Friendships and Loneliness
Connection with Faculty	Commuting an Obstacle to Involvement
Academic Engagement Challenged by Remote Learning	Successful Integration in Second Year
Building Community through Major	Perceptions of Involvement and Sense of Belonging
Academic Major is a Part of Identity	Institutional Obstacle with Student Involvement
	On-Campus Housing Fosters Engagement
	Challenges Associated with Living on Campus

Academic Theme

Challenges with Academic Advising

A common theme identified among the interviews were disappointing and frustrating experiences with academic advising. Interviewee 2 describes her experience with miscommunication regarding her desire to double major and the lack of support she received from academic advisors.

Part of the reason that I wanted to come to [university] was because I originally came in, with the intention of double majoring so doing, dance and then something else to help my arts career. When I came in, I liked it when I toured and I talked to all of the dance faculty. They made it sound like that was super achievable and that they would help me throughout the process and that everyone in the dance department is a double major. So, after my first semester, but they were like you can't come in as a double major so, do your first semester, and then see if you still want to double major. So, I did my first semester, had an amazing time, it was great I loved all my teachers. Then the second semester I added a double major in kinesiology. What dance didn't communicate to me was that no one helps you with your double major. I came to my advisor and was like I'm having some difficulty figuring out my schedule, because, for all of my kinesiology classes, I have certain required things for my dance classes, and, the dance department is so small, that there's really only like one section of every class, so I didn't really have a whole lot of options. I was like, is there someone I can talk to help me with this, and they said, 'Oh no if you're a double major you have to figure that out on your own and you advise yourself.' What! I was like Oh well, okay this changes my whole plan. They also told me that I didn't have any transfer credits, even though I came in with 32 credits, they told me that they lost my transcript four times, I had to pay to have it sent four times. And it wasn't until about two months before I graduated that they finally confirmed that they received it and confirmed that I had in fact taken those classes. So, I didn't know until about March of this past semester, that I was actually okay to graduate. I was fully prepared to have them come to me at the last minute and say 'just kidding you have to stay another semester we messed everything up.' Everyone was very disorganized and I ended up graduating a year early because I dropped my double major because I couldn't figure it out. It was just too much for me to try and do it on my own. After I found out that I got no faculty support, I was like, this isn't worth it to me anymore. Instead of double majoring I was able to graduate a year early because of my transfer credits and because I figured out that earl on. My advisor didn't talk to my other advisor, so I would take classes, out of order and tell them that they had approved when they hadn't actually approved them. I was like if no one cares about me that I'm just going to do my own schedule and no one noticed.

A similar experience was discussed by Interviewee 10 who was frustrated with

the lack of communication from the advising office when there was a high degree of staff

turnover.

I've had six different advisors, I had like three different advisors undergrad and I've already had three different advisors, in the past year for graduate because they just keep leaving and t that's not the university's fault, but the problem is that

we're not notified, So, now I'll get an email that's like, 'As you know, so and so left' and I'm like no, I didn't know that, but that explains why they're not answering my emails. I've always said that the university is not good with communication.

Connection with Faculty

The majority of interview responses indicated a positive experience with university professors. Many students expressed that the faculty made them feel supported and understood.

> The thing with college professors, because they have so much to do, and they have so much around them, you got to make the first impression you got to be in there, like 'hi I'm you know, like this, my name, you know I'm really excited to be a student.' Like you got to make the initiative you got to make the jump. But when you do that, at least where the teachers, that I had, especially in my department, but also with the General Education teachers, all of them made me feel like an actual human being, like I have heard horror stories about professors. And I had none of those experiences here, they all were at the very least, obviously, teachers, but could be your friends, but are not your friends, first and foremost. But I felt like they could be, especially after the class and after everything had gone on, that I could become friends with them, and I did with some.

Academic Engagement Challenged by Remote Learning

The COVID-19 Pandemic had a significant impact across college campuses which led to a more frequent utilization of remote learning. Interviewees were asked to share how the pandemic impacted their experience with classes or with their campus experience.

> It really opened my eyes to one, how grateful I was that I had already been integrated into the [university] community and social life and everything before it hit because one of my roommates this past year was a transfer student and he knew no one, because all of his classes are online, so it was very difficult for him to meet people. So, I was very grateful that I had already known people and had friends and everything. But it was also, I think, very revealing of what the [university] valued and what they didn't. Obviously, it's been a difficult situation for everyone but it was very disheartening to constantly show up to zoom

meetings with like dance administrators and have them be like, our budget was cut again and we have no money so they literally were like giving us surveys being like, 'which adjunct faculty should we keep because we have to get rid of half of them?' I think they're very unprofessional, one of my teachers just disappeared for three weeks and I didn't even know if I made that a pass or fail class because I didn't know if I was going to pass or not, because I was like, 'am I just not getting her emails?' Where did she go? The quality of the education went down drastically.

Some students did not react positively to the shift to on-line learning. Especially in terms of engagement or socializing with other people, the virtual classroom was not a good conductor for student connection. As students compared on-line to in-person social interactions, forming friendships was easier in person. A student discussed how his on-line courses attempted to foster interactions with other students in the class, but the experience was not the same.

Once we started remote learning, I feel like a lot of group projects were kind of implemented into a lot of classes, which is helpful in some ways and other ways not. Good projects can be a little rough as well, but it was a good way to kind of like just kind of keep things normal because you're socializing with other classmates more than you would if you weren't having group projects. Because remote learning, you're sitting there with yourself on mute for the most part, and some people would even have their cameras off and like do other things. But yeah, there's a lot of group projects. Most of the friends I made at [university] were just kids I would talk to in class, either just because we're sitting next to each other, or we have a project, and we can go throughout the process and keep in touch. It also helps to be involved with clubs. I know my roommates and I would do intramural sports and you meet your friends that way, being involved in other academic kind of clubs. I guess you can say with Gamma, for instance. And I was in the Economics Society so I've met people that way. You know everyone's like super friendly in the classroom and clubs, because no one's trying to have any issues. As long as you're willing to put yourself out there to talk to someone you're more than likely to meet a new friend. I feel like if someone was a new student at [university] and they started off remote learning that would definitely be hard to make new friends. I would say just limited social interactions is the big thing from COVID.

Building Community Through Major

At times, the large size of the university posed a challenge in making connections,

but students have been successful with forming bonds within smaller groups of

communities. Some students discussed the positive interactions they had with the

students and the faculty in their respective school or major.

> Dance is such a small program, you all got really, really close really fast, so it was
> really easy to come to school and have a whole group of friends already because
> we also all sort of had a connection somehow just because of being in the dance
> world before we came here. So, it was really nice. I graduated with a different
> class than who I came in with as a freshman but I still felt very accepted and very
> welcomed by all of the students. It just felt really nice to be in a department that's
> so small that, everyone knew everyone, all of the teachers knew you by name,
> they all knew what you were doing like what your projects were. It was very like
> a very tight knit community. People would constantly be working on projects so
> one of the ways that I made friends was just by being in rehearsals with people.
> Like my first semester, I was sure I'll just join everything and rehearse for
> everything and I met some of my best friends that way.

Another student reported a similar experience building connections within her

major, but not so much with the university;

> In my graduating class for that major so I had the same professors over and over
> again, and we got to know each other really well, so I think my experience is kind
> of anomalous in that fact that I actually had a really great working relationship
> with my professors. They were so attentive and everything like that. In terms of
> like the overall school not really which you know it's a big school I didn't really
> mind.

Academic Major is a Part of Identity

Some students expressed positive experience in their academic social circles and

were able to have positive interactions with students who share the same major. Students

were able to foster a sense of identity and belonging with the peers in their classrooms.

> I don't know I personally like the fact that [the university] doesn't force you to be
> in that space of like, 'Oh, you go to [the university] and need to be having

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[university] pride all the time. I like the fact that it still maintains and promotes individuality, because, if I was in a smaller school, I would assume they'd be more "Oh you're like a [university] student like you should be proud of that fact, but I, like the fact that I can just go to the school without having to have it be a huge part of my identity. I'm fine with it, I'd rather have other things as part of my identity, instead of just like my school if that makes sense. But I do think that people who do have their school as part of their identity, it's fine and also, I think that for me the university might not be a like a huge part of my identity, but I do think that my major is, in Communication. I think that's helpful because there's a little community of its own that has its own things that they do for the students and all that, so I think that's more important than having the whole school as a collective be a community.

Social Themes

Challenges with Forming Friendships and Loneliness

A common dissatisfaction emerged as students recollected their experiences from their first-year on campus. A student discussed how they faced loneliness and struggled with forming connections, especially when it seems that no one but them is facing similar challenges. Interviewee 10, who resided in a single room during her first year in campus housing discussed her experience.

The whole first semester I didn't really meet anybody, and it was really lonely and I felt like [the university] could have been better with like that aspect. Even just like having something that says, like you know everyone's feeling this way. You know, because, I kept thinking, I was like the only one, because it looked like everyone was making friends and then I would talk to people and they would be like 'Oh my God I'm like so lonely all the time' and I found that spirit really common experience with freshman.

Throughout their interview responses, some students shared that they wished they made greater efforts their first year to meet people, as that became more challenging with the progression of class status.

My only regret was that I was not knowledgeable on how to pace myself in terms of energy and emotion and social stuff. Because I would have loved to have made many more friends than I did, I can still remember some people who I was really friendly with but didn't really know how to reach out to and how to find like an

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actual bond, you know. I would often walk from class to class with certain people and we would talk and have good conversations, but there wasn't anything lasting, like there wasn't a serious bond formed, and that is my only regret at [university].

Commuting an Obstacle to Involvement

Students who commuted to campus from home faced additional challenges to connecting with students and integrating to the campus community. A commuter transfer student suggested additional resources for commuters and compares living on campus housing and commuting from home.

> I don't think that people know that is the commuter lounge. It's hidden and for a reason, it's a nice place. There needs to be more things for commuter and transfer students, nobody wants to be alone. Working in the office, people come to campus not knowing anyone, some students have to commute or live off campus. You have to put the effort to meet people. I think if I lived on campus I would have made more friends, I love meeting people, when I lived in my old college I made a lot of friends. If I lived on campus, I would know everybody on the floor. If I never transferred I think I would live in a traditional double hall.

Successful Integration in Second Year

Most students stated that their second year on campus was much less hectic and by that time they had established their friend groups. A student discussed compared her first year to her second year on campus.

> First year was very dramatic, it was very it was a lot of classic, your best friends with this group the first few weeks of school and then you never speak to them again. The girl who was my first roommate, we had a huge falling out she moved out and I got a new roommate who I'm still friends with now. But it was very up and down, the flip side to the dance department being really small and really close is that there a lot of drama very quickly because it's not a lecture where you can hide. You're only you're in the same class, with the same 10 people every single day of the week and you spend all day together so unfortunately my first roommate was also a dance major so, even though we have like this huge fight I started, we started to see each other. Then my second year was more like I knew who my group of friends was, I'm always like open to talking to new people, but I wasn't really in that phase of like I'm so desperate to meet people and find my group. My second year I was like I know who my people are, I know what my

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group is. [First year] you just have to spend so much energy trying to do that or accomplish that.

Sophomore year is when I kind of really developed that social circle. Freshman year, I had a bunch of friends, whereas like sophomore, it was more solidified, those are the people. I want to hang out with those people, I was studying with them, and it was definitely where I had my support circle that's where I found it. I think, also I was doing better just through the services that the university provided, I think that they could still do better, but like through like counseling I thought that was really helpful, but I know that trying to get an appointment was really difficult.

Perceptions of Involvement and Sense of Belonging

Some interviewees discussed how participating in clubs or organizations facilitated good experiences and connection with the university. A student who joined Greek life discussed how the fraternity acknowledges its members.

I'm a member of a Gamma Sigma and they'll acknowledge students who are doing well and it just matches the acknowledge, I guess, just so you're not kind of like flying under the radar the whole time and just another number, I guess, but it feels nice to be acknowledged that hard work is getting acknowledged and appreciated. When through [the university], you just get an email letting me know what's happening, but with Gamma sometimes they have an announcement, like in a meeting or something, letting you know about the journal academic achievers, sometimes we also get emails just kind of congratulating you if we're only dean's list or something so that's always a good way to acknowledge your students.

Being engaged with the campus community can foster a sense of belonging and connection. A student explains how being involved is instrumental in feeling happier with the college experience.

I'm involved with a lot of things on campus and that's how I like to spend my time, by being involved with stuff. And I found that that is super helpful. When I meet people, who aren't involved in anything, it's shocking to me at some of the stuff that they just don't know about the school, I guess, because it really does

make you feel more part of the community, it makes you feel more involved. I know that they [the university] try to get people more involved. I'm part of a sorority and part of a dance group. I know like they have [university] events, and I think that's helpful I think people are super excited in the beginning, and then, unlike your first week, especially as a freshman, you come in into a world of possibilities, all these different things you could be a part of. Then school starts and I think a lot of people lose that momentum and, if they're not kind of like a go getter, they can get left behind when it comes to that forming a community and finding your people. I guess like a mid-year reach out, I know that's more formal. I just think getting involved on campus is the key to being happier and feeling part of that community because you're just aware of what's happening. Greek life, I recommend that if you have any sort of an inclination to exploring that in college, because I think that it's a great place to meet genuine people.

Finding other students with common interests frequently facilitated the ability for a student to make friends. Interviewee 10 discussed how she found her "home away from home" by joining a cultural community.

I'm Jewish so I met most students at Hillel, and I just loved it. It was like my home away from home, you know, so that was pretty much how I made all of my friends. I found that there weren't a ton of opportunities to meet other people. I thought, in the dorms there would be more but there really weren't. It was, aside from Hillel, really difficult to meet people freshman year.

Institutional Obstacle with Student Involvement

A student expressed her dissatisfaction with how the university distributed information to the student body. She would have liked participating in activities and attending events more frequently, but expressed that they are advertised so poorly that she did not receive the information in time or was not sure where to find it.

I do remember is that I always missed [the event] because it was horribly advertised. I would literally be like on my way to class, and I would see all these people having fun with a big blowup slide and water, you know water guns and things like that and I'm like well, that would have been nice to know. I had that happen for many events and activities that we found where it was just purely from friends who would find me on the way where it was actually happening. I'm not even sure where they were advertised, I know, some friends who did know about them and I was like 'where did you see this?' I mean, I'm sure there were other clubs, but like I said it was just really hard to find things. I've been looking for a yoga class on campus for this coming year and I asked another student, 'Do you

know where they would advertise that sort of stuff?' and he said 'So if you go like this way and all the way down the stairs and into this building and then to the back, there's this Bulletin board, you have to go past.' So, it's that kind of stuff where it's anything that was advertised, was advertised so poorly that I didn't know about it.

On-Campus Housing Fosters Engagement

A student who lived in a traditional double room type in JH Hall, a first-year residence hall, discussed how her experience living in university housing provided opportunities to make friends and connections.

> I spent a lot of time alone freshman year and didn't know anybody, but was trying to make friends. I did live in my dorm freshman year and that I was around my friends, all the time, because we all lived there the second semester. I really became friends with them, so we were around each other all the time. Then I found once we got into sophomore year, and we all lived in different apartments and stuff, it was then up to us to make those decisions to hang out with each other. Then I understood why some people, maybe aren't involved with things, or have trouble finding their place, because without that first-year experience, I probably wouldn't have had as much initiative to go out or made friends with those people. And it's harder when you're all on your own. So, it was just a lot, I had to be a lot more intentional with hanging out with people and staying into those things I had signed up for freshman year because there was no one holding me accountable as much. [The building basement had] couches and tables and stuff and I would go down there every night, and I would be with my friends and that's where I changed my major because I met people that were in the accounting major. I joined organizations, because I met people down there who were part of them. I'm still friends with the people that I became friends with there, they're still now my close friends. That living there, I recommend it to anybody who comes whenever they ask me, what they should do, because I think that was defining for my time at [university]. Not really having any where to go in my room so having to go into that common area or sharing bathrooms with people, whatever I think that was important.

Another student discussed a positive experience living in an on-campus residence hall. She lived in a suite style room type in LW Hall and shared how it facilitated in meeting friends.

I think that definitely was a huge part in making friends and, what's the word I'm looking for, like sort of being immersed in that social experience, just because if I hadn't been in that dorm, I think I wouldn't like if I was living off campus, and off campus housing is a lot of the times kind of far away, a little bit even feels just a little bit far away. I feel like I would have been kind of secluded from like everyone else, because and even sometimes like even I love like living in LW Hall because I had my own bathroom that I was just sharing with like three other people. I almost wish I had lived in JH Hall, because I feel like I could have made more friends, I could have met more people, because it was, like all community and it was like floor wide. That definitely made a big difference with the people I interacted with and the people I talked to.

Another student discussed a positive experience residing in LW hall in a suite style room type.

Absolutely, some of my best friends are the people I lived with freshman year. I had a couple friends who didn't live on campus their first year and they like got really depressed about it and, didn't really feel integrated into our class, and it's just like little things like we're having movie night in so and so's room and I'm just going to run downstairs and go see them. Whereas, if you have to come from blocks away like we are, and then they would have to use transportation and I didn't have it to. I think it just made them feel like it was further away from them. It definitely like helps me, even at the very least, to feel like someone was kind of holding my hand like, 'Okay, this is campus like this is where everything is.' When I lived in the dorm, our resident director, he would have like pancake nights every Sunday. And I thought that was so cute and a lot of times like we would go and he would change it up and it would be pancakes or popcorn or ice cream and we would go down and get food, and then everyone was sitting in the common room and watch the Eagles game. That was really fun. That was great, I loved when people participated in the school stuff. A lot of the events at the student Center I went to my freshman year, I didn't go as much my second year, just because I was further away. But a lot of the events there were really fun that I don't even know about, like movie night, game night, that kind of stuff we went to that was really fun.

Challenges Associated with Living on Campus

Not all students had a positive experience living in on-campus housing. This

student discussed her negative experience residing in a single room in JH Hall, a typical

first-year residence hall with communal bathrooms on each floor.

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I had awful roommates and changed rooms. I was miserable where I lived on campus, I had a single room, which I actually really liked, but the communal bathrooms completely freaked me out because during the winter, there were stomach viruses and flus and things like that going around, I was germophobic even before this pandemic. I remember there was a stomach flu going around the floor, and I was like, I'm just going to pee when I get to class. I was brushing my teeth in my room since it freaked me out so much. And also, because the bathrooms were cleaned twice a week, which is not great, when you have 40 people with stomach viruses. I didn't like that. But the main thing was the fire alarms. I don't know if you've heard anything about them. I don't know about once in a while, but for us it was probably twice a week. If it happened it wasn't just on our floor, it goes off on any floor and I was on the 11th floor. Then you had to evacuate the whole building and it was usually stupid 18-year-old that would put their Kraft mac & cheese in the microwave without water or they were smoking, or something like that, and set up the fire alarm. And that would be whatever if it weren't for the fact that, I had to walk up and down 11 flights of stairs usually in the middle of the night. And there was a fire alarm right in my room above my bed so I still get anxiety whenever I hear like a beep that sounds like the beep that would go off right before the fire alarm went off. It would be like the middle of winter and we'd all have to evacuate at like three in the morning and wait outside for half an hour until the fireman cleared the building. And that was my entire freshman year so that was once or twice a week. It definitely would have been better in a different building.

Conclusion

This chapter presented the quantitative and qualitative findings of this study. The results demonstrated that there are significant relationships with various elements of university housing and student academic achievement, behavior, and engagement. Quantitative findings showed that there was a significant relationship with academic achievement and university housing. Multiple analyses showed that room types and housing types had a significant effect on first-year GPA and second-year fall GPA. In regards to specific room types, results demonstrated that double and suite room types had the strongest relationship on the highest GPA category of 3.33 and higher. Analyses also demonstrated that double and suite room types had a significant relationship with student retention from first to second year. As for housing types, results indicated that students in

the highest GPA category (3.34-4.0) resided in university owned residence halls as compared to university affiliated buildings or not residing in university housing at all. Findings supported the theory that housing types had a significant relationship with second-year fall GPA, however, certain student demographics had a stronger effect on first-year GPA when compared with university housing.

Quantitative findings revealed a significant relationship with student conduct behavior and university housing. Results demonstrated that students with the least number of total student conduct violations resided in single room types, and, the highest number of violations occurred in apartment room types.

As for student engagement, quantitative findings demonstrated that housing and room factors, student demographics, and perceptions of involvement and engagement, all had a significant effect on academic performance. The qualitative data provided facets of additional information to be layered into the topic of student engagement. The qualitative analysis added depth and nuance to the social and academic experiences of students.

CHAPTER 5

DISCUSSION

Introduction

      This chapter reviews the study and discusses findings of the relationships between factors of student housing and academic achievement, student behavior, and student engagement. There is a large body of research that demonstrates that on-campus housing is beneficial to the student experience and has a positive impact on retention and academic achievement (Bozick, 2007; Jamelske, 2009; LaNasa et al., 2007; Schudde, 2011). Research also supports that living on campus promotes a variety of desirable academic outcomes by enhancing students' involvement and engagement with their institutions (Turley & Wodtke, 2010), but it lacks an in-depth analysis of the various room configurations and housing facilities that can have an effect on these particular variables. Tinto's integration model connected student attributes to the institutional experience and the impact they have on academic outcomes, retention, and success (1997). His dynamic model states that interactions with the institution's academic and social structures, a student's goals and intentions are continuously reshaped (1993). Astin's model determines that a student's housing was the most important environmental factor impacting involvement and that it had positive effects on retention regardless of student demographics or institution types (1984). The student involvement model emphasized the importance that the mental and physical engagement in the academic experience played a critical role in a student's decision to persist or drop out of college (Astin, 1984). The purpose of this study was to understand the relationship that university housing and specific room types have on academic achievement, student conduct violations, and level of engagement. Quantitative and qualitative analyses on the effects of these relationships are discussed.

Overview of the Study

This study used two sets of institutional data, survey data, and individual student interviews, to understand the impact university housing has on academic achievement, student behavior, and level of engagement. The study examined three sets of quantitative data and one set of qualitative data at a large, public, urban, research university located in the Mid-Atlantic region of the United States. The first quantitative data set, Student Characteristics and Achievement, was used to answer research questions related to academic achievement and retention from first to second year. The second data set, Student Conduct Violations, was used to answer questions regarding occurrences of negative student behavior in university housing. The third data set, the Student Experience and Housing Survey, was used to examine the relationship between student engagement and university housing. The survey questions covered five categories which made up the total engagement scale variable: time spent participating in activities, frequency of involvement, frequency of participation, perceptions of campus environment, and educational and personal growth. The last and qualitative set of data, Student Experience Interviews, were interview responses from students regarding their social and academic experiences on campus and their perceptions of the campus environment.

Statistical tests such as Chi-square tests, analyses of variance, and multivariate analyses of variance were executed to test the different relationships by residential variables. Dependent variables of achievement included end of first-year cumulative grade point, second-year fall grade point average, and retention from first to second year which was explained by the presence or absence of second-year fall GPA. Dependent variables of behavior included the number of conduct violations by academic year and the number of total violations per student. The dependent variable of engagement was the

total engagement scale comprised of measures of student involvement, participation and perception of campus environment. Qualitative interview data were transcribed to identify social and academic themes and descriptions of their interpretations and used to answer questions of student engagement.

<div align="center">Discussion of Findings</div>

<div align="center">*The Effect of Housing Type*</div>

The findings of this research indicated that student academic performance is influenced by their residential environment. While there has been an abundance of literature written over the years that demonstrates the academic, social and developmental benefits for students who live on-campus, there is a lack of research that compares differences of outcomes for students who reside in on-campus residence halls that are university affiliated and students who do not reside in university housing. The housing types examined in the analyses included university owned housing, university affiliated housing, and no university housing at all. At this institution, incoming and returning students seeking university housing have multiple choices of residence hall buildings offering various types of room configurations. The results of this study demonstrated that there are significant differences on student outcomes between the various student housing options. Of all of the academic cohorts examined in this study, there were 20,594, or 55 percent, of students who resided in university housing. Of all students who resided in a residence hall, seven percent of them resided in university affiliated housing.

Academic Achievement

Research findings demonstrated that housing type had a significant effect with end of first-year cumulative GPA and second-year fall GPA. Results of bivariate and multivariate analyses indicated that the percent of students with the highest cumulative GPA for the first year, between 3.34-4.0, resided in university owned residence halls. The

percent in the top GPA category was less for students residing in university affiliated housing. Despite the fact that various student demographics were considered, a multivariate analysis demonstrated that university housing types indicated a significant effect on first-year grade point average. The analysis indicated that university owned facilities had a positive effect, while university affiliated facilities had a negative effect on GPA.

A similar pattern was observed with the relationship of second-year fall GPA and students who resided in university owned and university affiliated residence hall buildings. The highest percent of second-year students with a GPA between 3.34-4.0 lived in university owned campus housing. The highest percent of students with GPAs of 2.66 and lower, did not reside in university housing followed by those who lived in university affiliated residence halls. All analyses of academic achievement presented that students who live in university owned housing have higher grade point averages as compared to students who live in university affiliated housing, or those who do not live on campus.

In addition to grade point average, student retention from first to second-year was considered an additional indicator of academic achievement or success. The effect of housing type was significant on retention from first to second year. A Chi-square test analysis observed that the highest percent of students who were retained for the second year resided in university owned residence halls. Interestingly, results showed that there was only a 0.5 percent difference in retention between students who resided in university affiliated residence halls to those who did not reside in university housing at all. Among the housing types, university owned housing demonstrated the lowest number of students who were not retained for the second year.

Student Behavior

Studies indicate that the physical and spatial environment impact student behavior, as is reported in differences in social interactions and in the differences in the spatial organization of the residence halls (Brandon, 2008; Thomsen, 2007). In order to explore the relationship of university affiliated and university owned residence halls on the total number of student conduct violations, residence hall buildings were included as part of the independent variable. A one-way analysis of variance revealed that there was a statistically significant relationship between the effects of building type and conduct violations. Results indicated that the highest number of conduct violations occurred in MO Hall, which is a high-rise university owned residence hall with apartment style rooms. However, the relationship was inconclusive as there was not a clear pattern identified in the results of the analysis to indicate that incidences of conduct violations were affected primarily by university affiliated or university owned building types.

Student Engagement

Previous studies have shown that students who live in university housing have higher levels of peer support, greater academic and social integration, and experience greater satisfaction and commitment as compared to students who live off campus (Pike, Schroeder, & Berry, 1997). Quantitative and qualitative analysis examined the relationship of student engagement and housing. Results from a multivariate analysis demonstrated that factors of student demographics, engagement, room and housing type, had a significant relationship with GPA. An unexpected finding demonstrated that students residing in buildings that were first-year, university owned residence halls requiring meal plans, with a majority of double and suite room types, decreased the total engagement scale. However, qualitative interview data demonstrated that on-campus

housing had a positive effect on involvement and engagement, with a student comparing her experience on-housing and how it would be if she was living off-campus.

> I think that definitely was a huge part in making friends and, what's the word I'm looking for, like sort of being immersed in that social experience, just because if I hadn't been in that dorm, I think I wouldn't like if I was living off campus, and off campus housing is a lot of the times kind of far away.

The Effect of Room Type

Academic Achievement

Room type configurations in residence hall buildings vary by layout, size, amenities, bathroom format, and number of roommates. Room types can encompass a high degree of variability even within the same room type. This study explored the effects of various room types on academic achievement. The findings indicated that particular room type configurations have a significant relationship on first year GPA. A bivariate analysis demonstrated that students with the highest first-year GPA (3.34-4.0), resided in suite and double room types. Interestingly, students who do not live in university housing and students who lived in a single room type by themselves had the highest percent of a failing GPA (.66 and lower). A significant relationship was also observed with second-year fall GPA, resulting with the highest GPA of students residing in suite and double room types.

Room types also had a significant relationship with student retention from first to second year. A bivariate analysis demonstrated that the highest percent of students retained for a second year resided in double room and suite room types, with no difference between them. For students that were not retained, the highest percent of them lived in a single room type or they did not live in university housing.

Student Behavior

A one-way analysis of variance revealed that there was a statistically significant relationship between the effects of room types and conduct violations. Students with the least number of total student conduct violations resided in single room types and the highest number of violations occurred in apartment room types. Results indicated that higher number of roommates in university housing, resulted in a higher number of total incidences compared to students who had no roommates in single rooms or less roommates in double or suite room types. Even with the inclusion of student demographic variables in a multivariate analysis, room types had a significant relationship on number of violations; The apartment room type presented the strongest relationship. These findings identified that room congestion was a significant factor on the number of student conduct violations.

Student behavior, positive or negative, and has the ability to affect retention from first to second year. In order to prevent explaining student behavior entirely as negative in this study, the total engagement scale was a measure of positive behavior. Second-year fall GPA is an indicator that a student was retained from first to second year, and therefore it was used as the dependent variable for this analysis. A multivariate analysis used to estimate the relationship between room type and the total engagement scale had a significant relationship with retention from first to second year. The analysis demonstrated that if total engagement, or positive student behavior, is equal among the sample, gender, non-minority race and suite room type proved to have a significant relationship with second-year fall GPA, indicating that racial ethnicity and suite room type had the strongest relationship.

Student Engagement

An analysis of student engagement as captured by the test of demographic variables, housing types, and room types, indicated a significant relationship. A multivariate analysis demonstrated that total number of conduct incidences per student, student rating of institution's contribution to their development, unmet need, student rating of supportive environment, university housing, perceptions of value and belonging, room congestion, and White racial ethnicity were significant to academic achievement as represented by second-year GPA. Student conduct had a negative effect on second-year GPA, and a supportive environment and perceptions of belonging increased GPA. These findings support that considering engagement and the physical campus environment together, university housing and engagement factors have a positive relationship with academic performance.

Implications

The results of this study indicate that students' individual characteristics, as well as social and environmental factors, play a role in student outcomes. Findings from this study highlight that factors of university housing play an important role in a students' academic success and experiences. The findings indicate that room configuration has a significant impact on student behavior. Implications from this study suggest that returning to the traditional residence hall layout with double room configurations will have a more positive effect on the academic and social positive outcomes of first- and second-year students compared to other building layouts. This is an important factor for

institutional leadership to consider when building new residence halls or renovating existing ones.

The findings also indicate that students living in university affiliated buildings not owned by the institution, perform worse academically compared to students who do not. In terms of residence hall planning, institutional leadership should also take a closer examination of the public-private partnership and lease agreements to make certain that the facilities they are offering are most conducive to student learning and social integration. Public-private partnerships have been an attractive option for some institutions as a way to increase updated facilities as options for students seeking housing. However, there may be differences in how these facilities are maintained, and it is possible that they are not maintained or managed to the same standard as university owned buildings are.

Research has consistently shown that single room types are not conducive to student success and actually contribute to negative feelings of loneliness. Findings have indicated that students living in single rooms perform worse academically when compared to all other room types in university housing. Although having their own bedroom is a standard that many students are familiar with in their home environments, this research demonstrates that single room types should potentially be offered only to upperclass students. Institutions looking to build, update, or re-design their residence hall buildings, need to consider research data in order to make the best decisions when it comes to student success, and not make decisions on popular or current trends. Many campuses do not have the resources to build or renovate new residence halls so they must

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use their current housing inventory. Implications from this study demonstrate that those institutions should examine how their housing selection programs are designed. Using the findings from the study, institutions should prevent first-year students from selecting to live in singles or apartments, and leaving that option for returning students instead. Incoming students and their families do not know which aspects of college life will be favorable to their success and which will become a risk factor for poor performance. It is the responsibility of institutional leadership to make the best and well-informed decisions for students on campus, even if they may not always be the most popular option. Implications from this study suggest that returning to the traditional residence hall layout with double room configurations will have a more significantly more positive effect on the academic and social positive outcomes of students who live there as compared to other building layouts.

<div align="center">Limitations of the Study</div>

There are limitations to this study that should be recognized. This research study was conducted at one large, urban, public, research institution in the Mid-Atlantic region of the United States, using only institutional data which limits generalizability to other institutions. Limitations were identified with the specific data sets, with the way the data was collected, with the COVID-19 Pandemic as a consequential global event, and also with the unique institutional housing characteristics and housing selection processes that could limit generalizability.

There are limitations with the quantitative and qualitative data sets used for the analysis that were recognized. The Student Characteristics and Achievement data set was

composed of records of first- and second-year students enrolled at the institution between the 2014-2019 academic years. The exclusion of third- and fourth-year students from this data omits information on academic achievement and student characteristics that could have potentially provided an interesting analysis and comparison of older and more seasoned students. Although the sample size was large and five academic cohorts were used to decrease the possibility of confounding factors affecting the outcome of the analysis, there is a possibility that the global COVID-19 Pandemic has made a permanent impact on present and future student cohorts which could deem the sample to be less representative of the current and future student body.

The Student Conduct Violations data set also had limitations, as it was not a conclusive report of the conduct violations recorded among all enrolled students, but rather, only included incidents that occurred in on-campus residence halls. Furthermore, student information and the details of the violations were not recorded consistently from year to year due to the implementation of a new conduct tracking software which affected the way that conduct violations were collected and recorded. The types of violations and sanctions reported by professional and para-professional staff can be subjective, which makes it challenging to rate violations by degree of severity or impact to the community. The sanctions, as a consequence for breaking policies, are also at the judgment of the staff members who are responding or overseeing the case of the violation, and some impose more severe sanctions than others.

There are also several limitations acknowledged with responses to the Student Experience and Housing Survey. The sample is unrepresentative of the student body as

only 239 responses were analyzed, and a number of the surveys were not included in the analysis as they were found to have too many missing responses. Additionally, there are a number of survey response biases that could have occurred with the survey respondents such as: First, non-response bias caused difficulty to obtain a larger number of participants even with the incentive of a chance to win a gift card for participation. Second, response bias which could have caused inaccuracies in response data as students may have provided responses that they think will make them look better or more positive. Third, selection bias recognizes the possibility that the survey only captured people who were invested or interested in the particular topic.

Finally, since not all student recipients received the survey information email within the exact timeframe, it may have had an effect on response rates. Considering that the survey was emailed right after the conclusion of the spring semester in 2021, it is possible that more students would have been inclined to participate in the beginning or the middle of a semester. In relation to the timeframe the survey was sent, it is a possibility that many students had suffered the effects of the COVID-19 Pandemic. Being forced to shift to on-line learning and remote classrooms for a semester or more could have impacted a student's interest and motivation in completing an on-line survey.

During the Student Experience Interviews, participants were asked questions regarding their experience of living on campus and the campus community from the previous year which may not have provided accurate perceptions based on the current experiences the students had in higher education. Once again, there is a possibility that the global effect of the COVID-19 Pandemic, may have impacted perceptions and

attitudes of students and of their experiences with the institution. Conducting the interviews virtually instead of face to face may also have affected the kinds of responses that students gave. Finally, ten out of twelve interview participants were female, which would not be a reflective sample of the student body.

The omission of room change information may have excluded interesting information related to room selection and student preference of buildings and room types. However, room changes are not usually the norm, and depending on the reason of the request, can be discouraged or declined by housing administration staff. The average number of students who complete a room change during the academic year is fairly small in comparison to the residential population. An examination of 236 completed room changes at the institution in the 2021-2022 academic year demonstrated that five percent of students submitted and completed a room change. Considering that the occupancy number (4,334) is lower due to the impact of the COVID-19 Pandemic, the percent of room changes in comparison to usual occupancy would be less than or close to four percent, which is a much more accurate reflection of the frequency that room changes typically occur.

Unique aspects of student housing at this particular institution presented additional confounding variables for the research. It is relevant to address that student housing is extremely limited in proportion to the institution's size. This has an influence on the competitiveness for student housing and causes housing shortages for the majority of the student body, especially for returning and transfers students. Issues such as housing shortages and financial situations can influence a student's choice and ability to live in a

residence hall. At this institution, the cost of residence hall buildings varies greatly, which means that some upgraded buildings with better amenities can be deemed as unaffordable for some students. Depending on the financial situation, a student may opt for more affordable housing and room options instead of newer and more luxurious buildings at higher price points.

The housing selection process at this institution is unique as it does not have an on-campus housing requirement like many other peer institutions do. The housing selection process provides students with many different options of building structures and room configurations. Since the process is self-selected, students choose which building and room type they want to live in and have the ability to select roommates. Additionally, depending on the student's major or interest, certain residence hall buildings house residential learning communities associated with a student's major which may also influence the student's building and room selection. It is important to acknowledge that students who live on campus may differ systematically from those who live off campus and not all students have the opportunity to obtain housing in a residence hall. Students who tend to be more prepared and select a college choice sooner, have higher chances of securing housing in more coveted rooms or buildings that have limited availability.

The limitations of this research study acknowledge the additional factors that should be considered with the topic of student success and on-campus housing. There are many student and institutional characteristics that influence academic performance, behavior, retention, and engagement. There are other confounding variables identified that can impact positively or negatively impact student success. Although on-campus

housing is a strong predictor of positive outcomes based on this research study and extensive previous literature, it is important to recognize that it may not be the only predictor of successful student outcomes.

<div align="center">Recommendations for Future Research</div>

The recommendation is to conduct research that examines how the specific physical environment of residence halls contributes to student belonging and better outcomes. A further examination of these physical spaces will allow for better and more informed decision making when it comes to student housing. More current research data would help inform practitioners how to best support areas of social support, peer relationships, and opportunities for building community when making decisions related to residence hall renovation or new student housing projects. It is recommended that future research focus on the identifying differences of students residing in buildings that are university affiliated as opposed to university owned, as they have shown to have a significant impact on the student's academic and social experience. It would be beneficial to examine additional architectural building factors for future research, including number of floors a building has, lounges, bathrooms, and types of communal spaces it offers. This could provide additional information into the differences of student performance on different floors and in various building structures.

Finally, it is recommended to obtain information of student conduct data for all students enrolled at the institution to provide a more comprehensive picture of behavioral differences between students who live on campus and those who live off-campus. It would be beneficial to examine student conduct violations through a less negative lens, as interventions in student conduct can be a sign of integration to the campus community as well as investment in the student's behavior from staff in the campus community.

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APPENDIX A

SURVEY QUESTIONS

Experience and Housing Survey

I am a doctoral student collecting data for my dissertation and would greatly appreciate it if you would take 15 minutes to complete this survey.

1. Which is your gender?
   - o Male
   - o Female
   - o Other
   - o Prefer not to say

2. In what year were you born?

3. Which is your primary race/ethnicity?
   - o African American
   - o Hispanic
   - o White
   - o Asian American
   - o Other

4. In which school/college are you currently in?
   - o Boyer
   - o CST
   - o Public Health/ Social Work
   - o Education
   - o Tyler
   - o Fox/Business
   - o Fox/Tourism, Hospitality, Sport Mgt
   - o Klein/Communication
   - o Other

5. When was your first semester at Temple?
   - o Spring 2020
   - o Fall 2019
   - o Spring 2019
   - o Fall 2018
   - o Spring 2018
   - o Fall 2017
   - o Spring 2017

- Fall 2016
- Spring 2016
- Fall 2015
- Spring 2015
- Fall 2014
- Other

6. From which of the following do you receive help to fund your studies? Select all that apply
- Grant or scholarship (include Pell grant)
- Federal student loan
- Private loan
- Family contribution
- Your own savings and Job
- Other (Please explain)

7. Please explain other funding sources.

8. Where did you live during your first semester at TU? If more than one place, please respond with your first place.
- Temple residence hall
- Off campus student accommodation
- Living with parents or guardians.
- Living partner/spouse
- Other

9. If you changed residences, when (e.g., first few weeks, mid-semester? between semesters?, etc.) and why?

10. If you changed, where did you move to? Please be explicit. If it was to another Temple residence hall, which building and room?

11. Which category best represents your cumulative GPA at the end of your first year at Temple?
- 3.34 - 4.0
- 2.67 - 3.33
- 2.34 - 2.66
- 1.67 - 2.33
- 1 .66 and below

12. Where do you currently live?
   o TU residence hall
   o Apartment within 15-minute walk to campus
   o Commute from home
   o Other

13. What residence hall and room?

14. Which category best represents your cumulative GPA at the end of your last semester you attended Temple? If you are currently enrolled, enter your GPA at the end of the last completed semester.
   o 3.34 - 4.0
   o 2.67 - 3.33
   o 2.34 - 2.66
   o 1.67 - 2.33
   o 1 .66 and below

15-21. We are interested in which activities you participated in during your first year at Temple in an average week. Check all that apply.

	None	1-5 hrs	6-10 hrs	11-15 hrs	More than 16 hrs
Athletics and fitness (both formal and informal)	o 1	o 2	o 3	o 4	o 5
Fraternity or sorority activities.	o 1	o 2	o 3	o 4	o 5
Club within my major.	o 1	o 2	o 3	o 4	o 5
Service learning project or volunteering.	o 1	o 2	o 3	o 4	o 5
Classes, assignments, studying.	o 1	o 2	o 3	o 4	o 5
Paid job.	o 1	o 2	o 3	o 4	o 5
Socializing with friends.	o 1	o 2	o 3	o 4	o 5

22. On a scale of 1 (poor) to l0 (excellent), how would you rate the quality of academic advice you have received at Temple?

23. On a scale of l (poor) to l0 (excellent), how would you rate your entire educational experience at Temple?

24-27. During your first year at Temple, how often have you

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	Never	Once or twice a month	Weekly	Daily
Consulted career services?	○ 1	○ 2	○ 3	○ 4
Held a lead position in a university group or club?	○ 1	○ 2	○ 3	○ 4
Attended an art exhibition, play, dance, music, theatre or other performance?	○ 1	○ 2	○ 3	○ 4
Improved your knowledge and skills to contribute to your employability?	○ 1	○ 2	○ 3	○ 4

28-35. During your first year at Temple how often have you done the following?

	Never	Sometimes	Often	Very often
Talked about your career plans with a professor or an advisor?	○ 1	○ 2	○ 3	○ 4
Used academic support services?	○ 1	○ 2	○ 3	○ 4
Used university support services for personal problems?	○ 1	○ 2	○ 3	○ 4
Come to class having completed readings and assignments?	○ 1	○ 2	○ 3	○ 4
Engaged in online discussion groups?	○ 1	○ 2	○ 3	○ 4
Worked with other students on course projects or assignments?	○ 1	○ 2	○ 3	○ 4
Worked with a professor on activities outside of class (committees, clubs, research)?	○ 1	○ 2	○ 3	○ 4
interacted with students from different economic, social, or ethnic backgrounds?	○ 1	○ 2	○ 3	○ 4

36-40. Now we would like your perceptions of the Temple environment. To what extent does Temple emphasize

	Never	Sometimes	Often	Very often
Spending significant amounts of time studying and on academic work?	o 1	o 2	o 3	o 4
Providing the support you need to help you succeed academically?	o 1	o 2	o 3	o 4
Encouraging contact among students from different economic, social, and ethnic backgrounds?	o 1	o 2	o 3	o 4
Attending campus events and activities?	o 1	o 2	o 3	o 4
Providing opportunities to be involved socially?	o 1	o 2	o 3	o 4

41-43. Please evaluate

	Poor	Fair	Good	Excellent
Overall how would you rate the quality of academic advice that you have received at Temple?	o 1	o 2	o 3	o 4
How would you rate your entire educational experience at Temple?	o 1	o 2	o 3	o 4
How would you rate your overall experience with the campus community?	o 1	o 2	o 3	o 4

44-49. Please evaluate the following statements.

	Not at all	Somewhat	Quite a lot	Very much
To what extent do you feel like part of the community at Temple?	o 1	o 2	o 3	o 4
To what extent do you feel valued by Temple?	o 1	o 2	o 3	o 4
To what extent do you feel comfortable being yourself at Temple?	o 1	o 2	o 3	o 4
Are other students friendly and supportive?	o 1	o 2	o 3	o 4

Are faculty helpful when you have asked for help?	o 1	o 2	o 3	o 4
Are administrative personnel and staff helpful when you have asked for help?	o 1	o 2	o 3	o 4

50-55. To what extent has your experience at Temple contributed to your knowledge, skills, and personal development in the following

	Not at all	Somewhat	Quite a lot	Very much
Acquiring job-related or work-related knowledge and skills?	o 1	o 2	o 3	o 4
Working effectively with others?	o 1	o 2	o 3	o 4
Solving complex, real-world problems?	o 1	o 2	o 3	o 4
Contributing to the welfare of the community?	o 1	o 2	o 3	o 4
Tried to understand better how an issue looks from someone else's point of view?	o 1	o 2	o 3	o 4
Included diverse perspectives in class discussions or written assignments?	o 1	o 2	o 3	o 4

56. Have you ever seriously considered leaving Temple?
   o Yes
   o No

57. Please check all that apply.
   o Poor academic support
   o Boredom - lost interest
   o Commuting problems
   o Home/family responsibilities
   o Financial difficulties
   o Health - stress issues
   o Other opportunities
   o Uncomfortable social situation

58. Do you have any suggestions as to how Temple could improve the academic environment?

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59. Would you be willing to do a short interview? We hope so.
   o Yes
   o No

60. Please enter your email address to be entered in the $50 raffle. We need a way to contact winners!

APPENDIX B

SURVEY EMAIL TO STUDENTS

Experience Survey

Hello!

My name is Patricia Kowalski and I am currently a doctoral student in the Higher Education program at Temple University. I am writing to request your participation in a brief survey that will be used in my research study. My research focuses on understanding undergraduate students' engagement and experiences at the university.

Your participation is completely voluntary. If you choose to participate in the survey, you will be entered into a raffle for a chance win $50.00. All of your responses will be kept confidential and anonymous. If you are interested in volunteering for a short interview about the topic, you will be given the option to include your name and TU email address at the end of the survey. By completing this survey, you agree to be part of the study. Please respond by June 10, 2021 in order to be entered in the raffle.

The survey will take about 10-15 minutes or less to complete. Please click the "start survey" link below to go to the survey.

START SURVEY

Thank you!

APPENDIX C

INTERVIEW EMAIL TO STUDENTS

Hi!

You have indicated on my Student Experience Survey that you would be willing to have a brief conversation. I'd like to schedule a time in the next 3-4 weeks to chat with you regarding your experiences at Temple University. Our chat will be conducted through Zoom at a date and time that is convenient for you. I plan for our conversation to be between 20-40 minutes depending on your responses and how much information you would like to share with me.

For my dissertation research, I am focusing on the importance of a student's social and academic life on campus. I value your thoughts and opinions and hope to improve the Temple experience for students. Please let me know which days and times you are available to chat by clicking **here.**

Additionally, I will be pulling the $50.00 raffle by June 12th, 2021 and will contact the winner by next week!

Thank you!

Patty

APPENDIX D

VIRTUAL INTERVIEW QUESTIONS

Introduction: "Hello! Thank you for agreeing to schedule a time to chat with me. The purpose of our conversation is to gain a better understanding of your experience at Temple University both academically and socially. I will only be audio recording your responses for the purpose of transcribing them for my dissertation, your name and TU email will not be revealed. Please know that you are able to stop the interview at any point or skip specific questions that you would not like to answer."

General Information Questions

1. Name?

2. TU email?

3. What is your class year? How many credits have you completed?

4. Are you a transfer?

5. Why did you choose Temple?

Academic

6. How would you describe your overall experiences with faculty, professors or teaching staff? How about inside the classroom? How about outside of the classroom?

7. Describe if and how you feel appreciated here as a member of the academic community?

8. Can you describe your interactions with office staff? Have they been helpful when you sought them out with questions or a concern? Why or why not? What could they have done to be more helpful?

9. How would you describe your experiences and interactions with other students? Were there opportunities for you to engage with your peers inside the classroom? How about outside the classroom?

10. What aspects of campus have been helpful in supporting your academic goals?

11. Comparing your first year with your second year, how was it different academically?

Social

12. What ways can the University build more community among students? Do you feel like you can be yourself at this institution?

13. Do you feel like you are a valued part of the campus community? How can the institution make you feel appreciated?

14. What aspects of campus life where most helpful in providing opportunities to socialize with others?

15. Comparing your first year with your second year, how was it different socially?

16. Where did you live during your first year at Temple? How would your experience have been different if your place of residence was different during your first year? Is there anything that you would have changed?

17. How has the Coronavirus pandemic impacted your overall experience at this institution? Academically? Socially? Has the Coronavirus pandemic impacted your choice of residence for this academic year?

18. Is there anything else that you would like to add that I may not have asked?