CORRELATES OF THREE YEAR TRANSFER STUDENT RETENTION RATES WITH RACE, GENDER, AGE, CREDIT HOURS, AND PLACE OF RESIDENCE

AT A REGIONAL PUBLIC UNIVERSITY

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Dissertation Prepared for the Degree of

DOCTOR OF EDUCATION

UNIVERSITY OF NORTH TEXAS

December 2011

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This dissertation examined the relationship between the three year academic success of transfer students and the variables of race, gender, age, number of transfer credit hours, and place of residence. The study was conducted at Midwestern State University, a public, regional four-year institution and followed the incoming transfer classes of the fall 2005 (N = 292), 2006 (N = 323), and 2007 (N = 286) semesters. The subjects included in this study were all new transfer students who met the university’s requirement to live on campus.

The dependent variable, three year academic success, was defined as whether or not the student was still persisting or had graduated within three years from the date of initial enrollment. The independent variables were housing status during the first semester after transfer, age at time of transfer, gender, race, and the number of credit hours at the time of transfer.

The first research question aimed to determine if housing status impacted the three year academic success in the population. Chi-square analysis found that there were no significant distributions of the students who lived on-campus and the students who lived off-campus during their first semester after transfer.

The second research question aimed to determine if the variables of age at the time of transfer, credit hours at the time of transfer, gender, race, and campus housing status impacted three year success. Logistic Regression showed that only gender (.003) was significant at α = .05. The Exp(B) value for gender (1.514), showed that females were 1.514 times more likely to
be successful than males when all other variables were controlled. The effect size of .019 indicated that the model only accounted for 1.9% of the variance, indicating that the model may not be a great predictor of student academic success.

The results of this study, conducted at a regional, public, four-year institution, show that transfer students who lived in campus housing during their first semester after transfer did not achieve three year academic success at a significantly different rate than those students who lived off-campus. However, the study did find that females were 1.514 more time likely to be successful than their male counterparts.
ACKNOWLEDGEMENTS

I wish to thank the members of my doctoral committee: Major Professor Dr. John Baier, Minor Professor Dr. Marc Cutright, and Committee Member Dr. Pu-Shih Daniel Chen. Their advice and knowledge has been a true blessing not only during my dissertation process, but throughout my entire doctoral program. They have treated me with great respect and have been very helpful throughout this entire process.

Special thanks to Dr. John Baier for being there for me from my very first day as a student in the doctoral program. Your career counseling, advice, and wisdom have been very much appreciated and I look forward to our discussions in the future.

I would also like to thank the entire Higher Education faculty who I have met and befriended throughout the program. Thank you for your wisdom and for not only being great teachers, but also great mentors and role models.

Additionally, I would like to thank the Office of Institutional Research at Midwestern State University, and specifically Marilyn Deese, for making the data available to me during my research.

Finally, I would like to thank my wife Ashley and my daughter Kylie for understanding all of my late nights and weekends away from the house to complete my dissertation. Thank you for providing me with an outlet and keeping me motivated to complete this journey.
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CHAPTER 1

INTRODUCTION

Student retention is vitally important to the success of every university, and administrators are always looking for ways to increase retention because with increased retention usually come higher graduation rates, enrollments, and increased student academic success.

As part of an institutional study, the Midwestern State University (MWSU) Housing Office conducted an analysis (Mills, 2010) to determine the effect of newly constructed campus housing apartments and its impact on student satisfaction and retention. Included in this study, was the relationship between the new campus apartment housing and transfer student academic success at Midwestern State University. The preliminary results produced inconsistencies with previously published literature pertaining to the relationship between campus housing and student retention rates. Subsequently, this caused a concern for the university, and the need for a more expansive study on the impact of this new campus housing on transfer student academic success.

This dissertation is organized into five chapters. The first chapter focuses on the theoretical framework, purpose of the study, problem for the study, the research questions, and other relevant material related to the study.

The second chapter focuses on the relevant literature. Pertinent prior research on transfer students is cited, theories involving student engagement and involvement are discussed, and relevant literature on student satisfaction is examined. Additionally, the
remaining independent variables of gender, race, age, and number of semester credit hours at the time of transfer were examined to highlight their relevance to the study.

The third chapter focuses on the research methodology for this dissertation. The subjects included in the study, the variables included in the study, and the methods used for research analysis are explained.

The fourth chapter presents the research findings for each of the research questions. Statistical analysis and findings are explained.

The fifth chapter contains a discussion of the findings, conclusions, and implications and recommendations for future research and administrative practice. References and appendices follow Chapter 5.

Theoretical Framework

Over the last 50 years, Astin’s theory of involvement (1994) and Tinto’s theory of student departure, (1993) have guided researchers in assessing the value of university housing with respect to academic student success, student development, and retention rates. Both researchers have shown that in general, students who live on campus will participate in more campus activities, engage more with their peers, and genuinely be more connected with the campus. Traditionally, when students do the aforementioned, they will in turn have higher levels of success, persist at a higher rate, and tend to graduate at a higher rate than those students who do not live on campus.

Also, Tinto’s theory of student departure (1993) postulates most students who attend college go through some level of departure from their previous environment. According to this
theory, the student will need to go through a departure of their previous environment so that they can transition and successfully incorporate into the new college environment. University housing has widely been considered a great place for students to undergo these transitions as the exposure to students in a similar circumstance can allow for students to more easily depart their former environment and transition into the new college environment. Once they experience many of the similar departure steps, the students with assistance from the campus community, can become involved in the campus and incorporate to their new surroundings.

Problem Statement

Currently, Midwestern State University has a residency requirement for those students who do not live in a local zip code, have less than 45 semester credit hours, and are under the age of 21. Since 2003, the university has been building new apartment style housing with the hope of retaining more of their on-campus population by giving them different housing options after their first year of living in a traditional residence hall. The university also built this apartment style housing with the thought of providing an attractive on-campus living option for their transfer students. As of the time of this writing, Midwestern State University had built an equal number of apartment beds when compared to residence hall beds to provide transfer and upper-class students with viable living options throughout their college experience. However, the results of the Mills study (2010) showed that the 2004 transfer class at Midwestern State University who lived on campus did not persist and succeed at the same level as those transfer students who did not live on campus. This is contradictory to the purpose of the new housing and is inconsistent with previously cited published research. Thus,
Midwestern State University wanted to determine whether or not the 2004 transfer student class is just an anomaly, or if more incoming transfer student classes who reside in campus housing are similarly experiencing higher levels of withdrawal than their counterparts who live off campus. Thus there is a need to conduct a larger study of additional transfer student cohort groups to determine whether the new campus housing is actually hurting transfer student academic success and retention, rather than enhancing it.

The current literature regarding student retention and housing is quite expansive for first time freshmen, but it is fairly limited regarding transfer students. No studies were found on transfer student academic success as it relates to place of residence during their first year after their transfer.

Purpose of Study

The purpose of this study was to examine if the correlates of housing status during the first semester of transfer at the senior institution, gender, race, and age at the time of transfer, are associated with three year student persistence and academic success. This was measured by looking at the transfer student retention and graduation rates, and looking to see if these rates statistically differ by gender, race, place of residence, and age at the time of transfer. The academic success rates were determined by looking at a three year period, with success being measured by whether or not the student had graduated or was still enrolled at the end of the three year period from the date of initial enrollment at Midwestern State University.
Research Questions

To fulfill the purpose of this study the following research questions were asked:

1. Is there a statistically significant difference in the overall three year academic success rates for the transfer student cohort groups studied with respect to housing status?

2. Are age, race, housing status, number of transfer credit hours, and gender statistically significant variables for predicting the academic success of the transfer student cohort groups?

Significance of Study

This study is important to the field of higher education because by studying the relationship between transfer student academic success and whether or not university housing plays a role, universities should be able to better adjust their housing programs to increase transfer student retention. It is also important to establish the correlations between place of residence, race, gender, age, and the number of semester credit hours at the time of transfer and the effect on retention rates for transfer students. To date this author has been unable to locate prior research that addresses these questions. By looking at this information, it could be a critical first step toward gaining a better understanding of transfer student academic success at four-year regional public universities.

This study is also important because it will inform the professional literature and the Midwestern State University administration as to whether the impacts of on-campus housing on student retention may be different with regard to transfer students. Much research has been done to understand freshman who live in campus residence halls, and this study will be able to add to that research on the impacts of campus housing as it relates more specifically to
transfer students. For housing and student affairs administrators who base decisions on student retention, this study is very important to show how transfer student academic success can be affected by place of residence at the senior college.

Definition of Terms

For purpose of this study, the following definitions of terms apply.

- **Apartment**: On campus housing consisting of either 2-bedroom/2-bath units or 4-bedroom/2-bath units. These units have washer/dryer and full kitchens.

- **Cohort groups**: Defined as the groups of university transfer students admitted to the university in a given academic fall semester.

- **Graduate**: Refers to someone who has completed all of the requirements for a degree at Midwestern State University.

- **Involvement with peers**: Defined as the extent to which a student reports involvement with student peers, as described by Astin (1993).

- **Minority status**: Defined as whether the student identified as Caucasian or any other racial identity. If Caucasian, the student was considered white or non-minority; if it was any other race in the MWSU student information system, the student was considered minority, or non-white.

- **MWSU**: Defined as Midwestern State University, a public, regional four-year institution located in Wichita Falls, Texas.

- **Non-graduate**: Refers to a student who did not complete all of the requirements for a degree from Midwestern State University.
• **Housing status**: Defined as the students’ place of residence during their first semester as a transfer student. Refers to whether they lived in on-campus housing or if they chose to live off campus.

• **Retention**: Refers to whether or not the student was persisting towards a degree from one semester to the next.

• **Residency requirement**: Midwestern State University has a residency requirement that requires all students who have less than 45 semester credit hours, under 21 years of age, are not-married, and are not from a local zip code to live in university housing until one of the previously listed criteria are met.

• **Satisfaction**: Defined as the extent of happiness with his or her housing arrangement, both in terms of the physical appeal of the facility and the level of satisfaction with social environment.

• **Semester credit hour**: Unit of measure awarded for successful completion or course towards a degree.

• **Success**: Defined as whether the student was still enrolled at MWSU or graduated from MWSU within three calendar years following admission to MWSU as a transfer student.

• **Traditional residence hall**: Defined as the most common housing facility that first-year students are assigned; semi-private rooms with communal bathrooms.

• **Transfer**: The mechanics of credit, course, and curriculum exchange as part of the articulation process. Includes recognition of, and credit for, learning in experiential and applicable contexts (Kintzer, 1997).
Transfer student: For the purpose of this study, it refers to a student who has attended at least one college and earned academic credits prior to enrolling at Midwestern State University. This student would then petition for acceptance and be allowed to have credits earned from a previous institution counted toward a degree at the new institution.

Delimitations and Limitations of Study

Delimitations

1. This study was conducted at Midwestern State University, which is a regional, public, master’s level institution. No other colleges or universities were studied.

2. This study was limited to those students who were listed as transfer students at MWSU at the time the data was collected.

3. This study only considered whether the transfer students lived in campus housing during their first semester of enrollment at Midwestern State University, which may not be adequate, and could affect the interpretation of the results.

4. This study was conducted by the current Director of Housing at Midwestern State University. However, this researcher was not the Director of Housing during the time periods of this study.

Limitations

1. The ability to generalize the results of this study, conducted at Midwestern State University, is limited to peer institutions with many of the same demographics. Midwestern State University, a school of approximately 6,400 students has about 1,350 living on campus, with 682 living in traditional style residence halls, and 668 residing in apartment style buildings.

2. Due to housing demand, there are a limited number of transfer students who get to live in university housing. While most are accommodated, without a notable sample size, the ability to generalize the results could be compromised.

3. Not all students at Midwestern State University have the ability to fully choose their housing facility. While most transfer students end up with accommodations in the apartments, not all of the housing requests can be granted due to lack of space.
Therefore, there will be transfer students assigned to a more traditional residence hall environment and with students of a different academic experience.

4. The university has a residency requirement that requires students not from a local zip code, under the age of 21 or have less than 45 semester credit hours to live in campus housing.

5. The data used for this study is previously collected data.

6. The GPA for incoming transfer students was not available for this analysis. This information was not kept by the university before the conversion to a new computer operating system in the fall of 2008.
CHAPTER 2

REVIEW OF THE LITERATURE

This chapter summarizes the theoretical literature on student engagement, student retention, and student academic success in higher education. Further, a detailed summary on the applied research studies which have attempted to measure the impact of campus housing on these college goals is presented.

This chapter begins with an historical overview of the research that addresses the importance of campus residence halls on student development. Next, the chapter focuses on student satisfaction with university residence halls and how it has traditionally been measured. Third, measures used to increase retention that are specific to residence halls are summarized. Finally, the issue of transfer students transferring to senior institutions, and more specifically, the relationship between student engagement and community college students who transfer to four year institutions is examined. Special emphasis is placed upon the relevant variables included in this study.

Historical Overview of Campus Housing

The American education system, including residence halls, can be traced back to the European systems of the 12th century. However, in the beginning stages of the American system, the model was recognized as *in loco parentis*, where the faculty was responsible for both teaching and for discipline, and living/managing the residence halls. As the system evolved and separate people were hired to assist with student affairs, these professionals
became responsible for things outside of the classroom, thus separating them from the academic division of the college.

Campus housing and its effect on student development has been an area that has produced a large amount of research. Researchers such as Astin (1994), Chickering (1975), and Tinto (1994), are just a few of the major theorists who have studied university housing as it relates to student academic success, retention, and engagement in the learning experience. The benefit of students living on campus has been documented in several of their works. From Chickering’s student development theory (1969) and Astin’s theory of involvement (1994), to the effect of housing arrangements, to the effect of custodial and maintenance services (Li et al., 2007), university housing has been continuously shown to have a significant positive impact on student retention, development, and level of engagement of first time in college students when compared to students who do not live on campus.

Advantages of Residence Hall Living

Much has been written about the positive benefits of living in campus housing while a student pursues an undergraduate degree. Alexander Astin (1985) once said that “simply by eating, sleeping, and spending their waking hours on the college campus, residential students have a better chance than do commuter students of developing a strong identification attachment to undergraduate life” (p. 523). Astin’s theory of involvement is very straightforward, as it mainly deals with the fact that involvement is a simple function of behavior. Just by simply getting involved, students exhibit behavior that will link them to their peers and will naturally involve them more in the environment than if they neglected to get
involved. It was his interpretation that students who live on campus will naturally begin to succumb to the institutions ideals because they are constantly surrounded and reminded of the goals of the university. They will also be around peers who will also be taking part in these activities.

Vincent Tinto has written about the advantages of living in campus housing and has developed several theories to explain this effect. One such theory is his Model of college student departure. In this theory, Tinto concludes that students need to integrate into both the formal and informal systems of the university to prevent departure. He defines the formal systems as the academic environment and the informal system as the relationship between peers and faculty/staff (Tinto, 1993). In this theory, Tinto advocates that there are both internal and external factors that influence a student’s decision to depart an institution. Internal factors, such as those that include the academic and social functions of the institution, can impact a student’s decision to depart the institution. These internal factors are also accompanied by external factors such as family and the need to hold a job while going to school. When combined, these factors will have a significant impact on a student’s ability to integrate and transition to the university, or in their decision to ultimately depart the institution.

Furthermore, research conducted by Christie and Dinham (1991) studied the factors contributing to social integration of first year students at a public research university. They found students who live on campus reported having more opportunities to get involved. Living on campus helped students have more peer interaction, were able to make friends more easily, and had more access to more campus events. Meanwhile, off-campus students reported just
the opposite. They found it harder to meet friends outside of class and did not attend, nor have as much knowledge of campus events, as students who lived on campus.

The study postulates why campus housing leads to higher levels of retention. They state that as students become more intertwined with the university, the chances they have to get involved and integrate with the university’s goals are enhanced.

Astin’s Theory of Involvement

Much research has also been done on the topic of student retention over the past forty years. This focus has primarily been on housing’s role in freshman retention, but might be applicable to transfer students as well. The basis of Astin’s theory of involvement is that student learning increases the more they are involved in both the academic and social aspects of the collegiate experience. An involved student is one who devotes considerable energy to academics, spends much time on campus, participates actively in student organizations and activities, and interacts often with faculty (Astin, 1984, p.292).

There are five main points that summarize Astin’s theory of involvement. The first is that involvement signifies an investment of psychological and physical energy in the education experience. The second point is that a level of involvement exists along a line where the student invests a range of energy at different times, or that different students will invest varying amounts of energy towards the same experience. The third point is that involvement consists of both physical and psychological energy that is measurable in quantitative amounts of time and qualitatively by examining the quality of their effort. The fourth point is that student outcomes are directly related to their involvement. Finally, the fifth point is that the
value of higher education programs is dependent upon the ability to get students to get involved (p.298).

Astin’s I-E-O (input-environment-output) model is important when considering strategies of student retention. In this model, a student’s input (I), the characteristics a student has when entering college, combined with the environment (E), the factors in college that affect the student experience (policies, programs, academics, peers and organizational structure) influence the outcome (O) of that experience (Astin, 1994). When combined with the institution’s size, residential experience, faculty, administration, personnel and friends, can have a tremendous impact on the retention of a student (Chickering, 1969). Referring to Astin’s Theory of Involvement (1984), students are most successful when they are involved in the process and invest their energy in the relationships and activities related to the campus. Astin concludes that when a student lacks involvement, it contributes to a lack of involvement.

By getting involved, the students have the opportunity to intertwine the in-class experience with the out-of-class experience for greater understanding. This is also postulated by Marcia Baxter Magolda when she wrote “connecting to students lived experience means using it as a foundation from which they can explore knowledge and determine what to believe” (Magolda, 1992, p. 13). Whether it is through a relationship with a faculty member outside of the classroom, or through a social event occurring in the residence hall, theories of involvement postulate that this should help lead students to increased participation and engagement in the college experience. By doing so in the residence halls, students should become more engaged with the environment and thus should be more involved and have a
deeper connection to the university. This is possible when residence life aligns policies and procedures with missions that are in line with enhancing the out-of-class experience.

Astin (1994) further writes that the most effective way of positive involvement comes from the academics and faculty and student peers. He continues this thought by saying that students who do not get involved in campus life run a much higher risk of attrition based upon the negative impact on student outcomes. It is this interaction with peers that helps a student by providing positive involvement, and conversely, there is a negative impact for non-involvement with campus life and/or peers.

Many current university student affairs administrators apply Astin’s IEO model in their desire to increase student retention, success, and development. They further believe that residence hall living is a link that can connect out-of-class experiences with in-class activities, and therefore frequently require, or a as a minimum, encourage on campus residence for as many students as possible. Residence life programs often base their first year experience programs upon the theory of involvement. Residence life staffs actively encourage participation and involvement in university events and programs as a way to bolster student engagement and strengthen ties to the university community. Freshmen residential communities are also designed to accommodate this theory. By designing facilities that encourage student involvement and student communication, residence life programs hope to capitalize on the fact that involvement will lead to greater success and retention at the university.

Tinto’s Separation Model

Student retention is a critical topic because the students who begin college but fail to
complete cost the institution resources, disrupts the ability for the institution to meet institutional objectives, and affects the student’s ability to have their social, emotional, and educational needs met (Mangold, Bean, Adams, Schwab & Lynch, 2002). According to a study completed by Elkins, Braxton, and James (2000), Tinto’s separation model (1987) takes an important look at the influences on first-semester students. In this model, Tinto advocates that the process of student persistence can have three phases: separation, transition, and incorporation (Figure 1). By encouraging students to separate themselves from their previous external factors, institutions try to capitalize on transitioning students to the university environment. Once the student has departed from his/her negative external factors and has began the transition into the university environment, the odds of getting him/her to incorporate into a successful environment increase. However, any student who is unable to negotiate the process of integrating into the intellectual and/or social fabric of the institution will not be successful (Boyle, 1989).

Of the three stages in Tinto’s model, Elkins, Braxton, and James (2000) focused on the separation stage for students in their first-semester. According to the authors, students enter college with various characteristics and different levels of commitment to the institution. It is a combination of these characteristics and the level of institutional commitment that help pass the student through the separation stage and on to the next. The separation, which takes place at the beginning of the academic and social environments at the institution, is considered the “first stage of passage into the college career and may require some personal transformation and possibly rejection of the norms of past communities” (Elkins, Braxton, and James, 2000 p. 253).
It becomes even more difficult when the past communities do not place a large importance on college attendance. If there is little support from family members and other members of the community, then the risk of early departure from college increases. According to Tinto (1987, 1993) students who rebuff the values and lack of interest in college participation from their previous community improve the chances of persisting from their first year of college to the next. Elkins et al. (2000) concluded that student entry characteristics and the initial level of commitment to the institution impact the students’ ability to reject their opinions and attitudes of their previous communities and help choose to remain enrolled at their current institution.

Once the student is capable of navigating through the separation stage, they move to the next stage of transition and incorporation. These following stages will ultimately be the ones that influence the decision by a student to depart the institution (Tinto, 1993). Since Tinto links student intentions with individual goals and that when the goal of college completion is emphasized, the student will have a greater chance of persisting. Tinto goes on to note that research has shown that the lack of contact with other members of the institution is the single most important predictor of departure (Tinto, 1993). When the students’ actions and intentions match the goals set forth with the dimensions of the university, persistence is generally improved.

Elkins, Braxton and James (2000) found that while the first step of separation can be particularly difficult, those students need to reject their past communities in order to successfully persist from year to year. Often, the support from parents and others in the previous community can give these students the extra incentive to separate from the past and
become successful. Elkins et al. (2000) also note that it is important to understand how important the rejection of attitudes from a previous community are to being able to help the students separate themselves and get more in line with the institutional objectives, which often helps lead to a higher level of persistence. It has been found that the more satisfying the student experience is, the better is the chance the student will persist at the institution (Astin, 1993).

Residence life organizations also frequently try to incorporate aspects of Tinto’s theory of departure into their models. Many residence life programs encourage students to integrate into new social groups and external communities in the hopes of helping the students depart their former external environments and integrate into their new environment. This helps students successfully navigate through the various levels of Tinto’s theory of departure.

Transfer Students

Since transfer students are the focus of this study, it is prudent to define the term transfer student. For the purpose of this study, the term transfer student refers to a student who has attended at least one college and earned academic credits prior to enrolling at another. While it is possible there could be several different technical definitions of a transfer student, it is important to note that transfers can originate from both the community college setting and university setting. Both types of transfer students are included in this study.

Transfer students who begin in community colleges have historically had lower baccalaureate graduation rates than their counterparts. The chances of a student even entering a four year institution after beginning in a community college are less than 50%, and
even if they do transfer, there is less than a 50% chance that they will graduate (Best & Ghering, 1993). Another study by Pincus and Decamp (1989) goes on to say that while 75% of students who enter community colleges indicate that their goal is to obtain a bachelor’s degree, only 15-25% ever transfer, and then only another 10-15% actually complete their baccalaureate degree.

**Semester Credit Hours**

Best and Ghering (1993) hypothesized in their work that 60 credit hours would be one of the major points that influenced success with students who transferred to a four year institution. Those students who had completed 60 or more hours would be better able to adjust and cope with the requirements at the 4 year institution. In contrast, those students who transferred in with less than 60 hours would be less able to handle the environment, and would have lower GPAs and graduation rates than their peers who had 60 hours upon transfer. They also hypothesized they would have higher dismissal rates than their counterparts.

Their research did find that students who had 60 hours had significantly higher mean GPAs than their counterparts with less than 60 hours. They also found that the students who transferred in with 60 hours had higher GPA rates than those who transferred in with fewer hours. Finally, they found that students who transferred in 60 hours were dismissed at a much lower rate than those students who transferred in less than 60 hours. Best and Ghering (1993) conclude that their study supports the assumption that students who transfer after completing two full years of academic work at a community college will find more academic success.

Historically, transfer students who began their academic career at a two-year institution have not fared as well as students who began their career at a senior level institution. The
reasons for this phenomenon vary, but some of the more common characteristics are that they historically tend to be less academically prepared. Community colleges have an open door admission policy that allows less academically prepared students the opportunity to take classes, regardless of their past academic record. Also, students of a lower socio-economic status choose to attend community colleges because of the lower cost and the ability to stay close to home, which can help defer the cost of housing (Glass & Bunn, 1998).

Transfer Shock

Other previous studies have looked for variables that affect transfer student academic success. Glass & Harrington (2002) looked for possible causes of the lack of academic success that community college transfer students have at the 4 year institution. One conclusion that they reached dealt with transfer shock. They label transfer shock as the “decline in GPA of the community college transfer student after transfer to a 4 year institution, particularly in the first year” (p. 417). These authors summarized that transfer shock can leave students feeling inadequate about their ability to do senior level institution coursework. This in turn, can lead to departure from the institution.

Another valuable study that examined several variables including transfer shock was a study completed by Solomon (2001). This study examined the success of 561 transfer students from a Virginia Community College to a four year institution over a five year period. This study compared the transfer students against the students who began their career at the first year institution during the same time period.
In this study, the author found that there were no statistically significant differences in GPA between those students in their final semester at the community college and their first semester at the senior institution. This led to inconclusive data as to the role transfer shock played in their experience. This study also found there were no statistically significant differences in the GPA of the transfer students and the students who began their career at the institution at the time of graduation. Furthermore, this study found that age and race only accounted for small variations in the academic success of the transfer students. However, the author did find that there was a significant difference in the academic performance of women, as they outperformed the men in this study.

Satisfaction

Housing administrators are constantly searching for ways to improve student satisfaction with their residence hall experience in hopes that it will improve residential and university retention. Several studies have examined the reasons for student satisfaction with residence. Foubert, Tepper, and Morrison (1998) claim, “research has demonstrated that physical environments and social factors can have a substantial impact on students’ satisfaction with their residence hall experiences. Physical features of a residence hall, such as architectural design, space, amenities, and location on campus have been shown to impact students’ satisfaction with their hall” (p. 41).

Also, studies have been done documenting the impact custodial and maintenance services (Li et al., 2007) have on retention. In their study, Li et al. surveyed student opinions and discuss the importance of the relationship between overall satisfaction with the residence hall
experience and student’s satisfaction with various custodial, maintenance, and residence life services. While there were significant findings when it came to satisfaction with maintenance and custodial issues, the overriding data showed that the interpersonal environment was more important than just cleanliness and maintenance factors.

Foubert et al. (1998) also show that factors such as residence hall staff, peers in the facility and roommates are all factors that relate to the social aspect of housing. In Pascarella and Terenzini’s (1991) research synthesis, they conclude that living on campus has a significant positive relationship with psychosocial and attitudinal measures, as well as increases the likelihood of persistence to graduation. They also did another study in 2005 to affirm that living on campus was shown to have a positive relationship on student’s interpersonal skills.

Person Environment Theory is also important to understanding first-year students and their satisfaction with on-campus housing. Strange and Banning (2001) discuss how both the physical factors and the social factors are important to satisfaction. The physical factors include having an attractive architecture and design, including but not limited to noise, lighting, room size, and technological services. While these are important, they also discuss the importance of the social factors, mainly support from the housing staff and peers in the residence hall.

Research studies have found that students who live on campus and participate in first year programs generally have higher persistence and graduation rates than their peers who do not participate (Fidler & Moore, 1996).

It has also been shown that resident students are much more likely to be involved with co-curricular activities and to use campus facilities than commuter students. Since student involvement outside of the classroom has been linked to persistence, retention, and social
integration within the institution (Tinto, 1993); satisfaction with the living arrangement can play a vital part in student satisfaction. Therefore, students who are satisfied with their housing choices should have a better chance of persisting to graduation.

Student Engagement

The theory of student engagement is another topic that has been discussed very thoroughly throughout the literature and also impacts the residence hall experience. Pascarella et al. (1994) concludes that resident students are significantly more likely to be involved with co-curricular activities and to use campus facilities than their non-resident counterparts. While student engagement is the main intended outcome, often it is the institutions’ policies and practices that determine student engagement. The policies and practices should not be limited to just the size and mission of the institution. While it has been assumed in the past that attending small private colleges will lead to increased engagement, this is not always the case (Hu & Kuh, 2002). However, Pike et al. (2003) published a study that shows that once background characteristics were taken into effect, the differences in the Carnegie classification disappeared. Instead, there was more emphasis placed on the attention, and the specific programs, that encourage and impact student engagement.

Age

The student’s age at the time of transfer can also be a significant predictor of transfer student academic success, retention, and engagement. Traditionally, students who attended post secondary education did so immediately upon completion of high school. These
“traditional” students are typically defined as students at, or close to, the age of 18 who have financial support and were able to attend college full-time. By comparison, “non-traditional” students are referred to as students who do not fit the typical mold of being 18 years old, recently graduating from high school, and attending a college or university immediately after high school. These students are typically older and may be attending college for the first time after being in the workforce or starting a family.

According to Terenzini, Cabrera, and Bernal (1994), lower income students are more likely to have delays in their attendance in college based upon the need to earn money for their college expenses before enrolling. Their research also showed that regardless of the reason, the students who delayed attending college directly after high school had a more difficult time in persisting and completing their degree program than the traditional students who enrolled in post-secondary education directly after high school.

A study by Cleveland-Innes (1994) looked to examine the ways that traditional and non-traditional students differ. This study showed that the main differences in the groups were that the traditional students had an easier time fitting into the social environment of campus life while the non-traditional students reported a stronger sense of goal commitment. This was theorized to be in response to the different life experiences that each of these groups had faced.

Cleveland-Innes (1994) also found that the commitment level among the non-traditional students was a very significant factor in determining academic success. If the student reported a strong sense of commitment to education, they often had higher persistence and graduation rates than their peers who reported lower levels of commitment.
This is consistent with the findings of other researchers such as Adelman (1999). This study showed that even after controlling for variables such as socio-economic status, race/ethnicity, and gender; those students who attended more than one institution and did not return back to their original institution reported lower graduation rates than those students who did return back to their original institution to obtain their bachelor’s degree.

Racial and Ethnic Considerations

Race and ethnicity can also impact student academic success, retention, and engagement. Astin (1996) studied educational attainment and persistence based on institutional size and race. This research showed that when holding all other variables constant, institutional size did have an effect on educational attainment, but it was very small. However, when he looked at size and race, he and his colleagues (Astin, Tsui, & Avalos, 1996) found that size was significant among some racial groups. Their study found that White and Mexican American students were impacted by institutional size, but not with any other groups (as cited in Pascarella & Terenzini, 2005, p. 386).

According to Chang (2001), the campus climate, racial makeup, and diversity of programming can impact persistence and degree completion. Furthermore, perceptions of racial issues such as discrimination can have a negative impact on persistence (Cabrera, Nora, Terenzini, Pascarella, and Hagedorn, 1999). However, this perception was generally more prevalent in minority students than non-minority students.

According to a survey conducted by the National Center for Education Statistics (2002), in the year 2000, 29.3% of all students enrolled in two-year colleges were designated as
minority students. During that same time period, only 24.2% of the total students enrolled in four year institutions were designated as minority.

In a study completed by Hirose (1994), the author found that while there may not be much difference in the curriculum of community colleges that mainly serve non-minority students vs. community colleges that serve mostly minority students, there is a significant difference in the transfer rates. Her research shows that students who attended predominantly non-minority community colleges transferred at a much higher rate than those who attended an institution that primarily serves minority students.

Pascarella and Terenzini (2005) conclude in their research synthesis that students who begin their postsecondary education at a community college run a much higher risk of never obtaining a baccalaureate degree than the students who begin at a traditional four-year institution. However, they did find that if the student actually does transfer to a senior institution, students who began at a two year institution succeeded at a very similar rate to those who began at a four year institution.

There have been other studies conducted to determine if there is a link between race and obtaining a bachelors degree. Laanan (1999) conducted a study to examine how minority and non-minority students differed in their college experiences. The author wanted to determine if there were differences in the involvement, general perceptions, and the academic and social adjustment process. The author concluded that the non-minority students in the study had higher GPAs at both the community college and the senior institution than their minority counterparts. However, minority students did spend more time on campus than their non-minority peers. Furthermore, minority students admitted to feeling overwhelmed at the
senior institution because they were at a larger university with bigger classes and had a more difficult time making friends. By comparison, the non-minority students felt more comfortable approaching their professors for assistance with class projects and reported having an easier time adjusting to the social environment of the senior institution.

Gender

There is previous literature to show that a student’s gender is also important to persistence and attainment. There have been several studies that examine the relationship gender plays in a student’s academic success, many of which look at institutional makeup and size.

The National Center for Education (2002) statistics show that in the year 2000, women earned more degrees than men. During this time period, women earned 340,212 associate’s degrees and 707,508 bachelor’s degrees, compared to their male counterparts who earned 224,721 associate’s degrees and 530,367 bachelor’s degrees.

Women have also seen a much higher increase in enrollment than their male counterparts. The National Center of Educational statistics indicates that in the year 2000, women accounted for 56% of all undergraduate enrollments. This has lead to a higher number of women obtaining higher baccalaureate degrees. Future predictions show that female enrollment will continue to rise, leading to significantly higher enrollments in postsecondary education than their male counterparts.

Previous studies have indicated that women who attend coeducational institutions are exposed to more obstacles to academic success than their counterparts who attend single
gender institutions (Miller-Bernal, 1993). This is pointed out by the fact that women’s studies programs at coeducational institutions have less support than at traditional all women colleges. At the coeducational institutions, the programs have a tendency to have fewer women professors and a generally less supportive climate than their counterparts at an all women’s college (Miller-Bernal, 2000). However, according to Pascarella & Terinzini’s research synthesis (2005), most research seems to indicate that there is modest, if any, educational benefit for students who chose a women’s college over a coeducational institution.

Institutional size was also found to be a factor when it comes to predicting success by gender. According to a study done by Wolf-Wendel, Baker, and Morphew (2000) studies that focused on institutional size and women were found to be a negative but significant factor, but not as significant as institutional gender. In their study, they also point out that female community college transfer students who exemplify certain characteristics such as having a full academic background are much more likely to make a successful transition from a community college to a university.

Midwestern State University Transfer Student vs. Housing Choice Study

The Midwestern State University Office of Housing and Residence Life conducted a study during the 2009-2010 school year to assess the effectiveness of their new housing on incoming transfer students (Mills, 2010). The university opened the first single student, assigned by the bed, apartment complex on-campus in August 2003. This project was immediately successful, as it was full during its first year of operation. Due to the fact that this housing facility was immediately full, this did not solve the housing shortage problems on
In order to again address this housing shortage, the university conducted another feasibility analysis to examine the demand of campus housing. The subsequent feasibility study again indicated that there was a void in the campus housing system, and more campus apartments were needed. The university then built and opened a second complex in August 2009.

To meet this need, the university developed and built a total of 612 apartment beds on campus with the hopes of retaining upper-class students in campus housing and to have another housing option for incoming transfer students. Before this apartment housing was built, the university just had traditional residence hall spaces that they used for housing all students. Under these circumstances, it was very possible and likely that transfer students would be assigned to traditional housing that possibly placed them with freshman.

This thinking and market analysis led the department to build new housing with hopes of retaining more students and to assist incoming transfer student success. This was somewhat true, as both complexes were full in their first semester of being open. The university was successful in its mission of retaining more students and providing an option for transfer students, but it still did not alleviate the overall housing shortage.

However, the 2010 study showed that the incoming transfer class of 2004 who lived in Midwestern State University campus housing during their first semester actually graduated at a lower rate than their counterparts who lived off-campus during their first semester. However, because this study was limited to the entering 2004 transfer student cohort and race and gender were not controlled, the validity of the findings might be suspect. Also, the results were
found to be incongruent with the previously published literature on the impacts of campus housing on student success and retention.

By comparison, the freshman students who were enrolled at Midwestern State University during this same time span were also compared in this study. In both the overall graduation rate and in the semester to semester enrollment, the students who lived in campus housing persisted at a higher rate than the students who did not live in campus housing. The higher persistence/graduation rates for freshman are in line with what previous literature has indicated; that living in campus housing should positively impact student success. This further demonstrated that there was a problem with the transfer student success, and was worthy of additional analysis.

Summary

There is a significant amount of literature that examines the relationship between non-academic variables and student academic success, retention, and engagement. There has also been a significant amount of literature showcasing the benefits of living in campus housing. Finally, there are a number of studies that have looked at transfer student academic success at four-year institutions.

However, this researcher could find no published research that attempts to isolate the decision of transfer students to reside in campus housing at their senior institution, while controlling for race, gender, age at the time of transfer, and the number of semester credit hours at the time of transfer and how it relates to student success. This is a relevant topic as higher costs for postsecondary education have led to more students beginning their college
experience at a community college. When fewer students begin their postsecondary education at an institution that is not the institution in which they will graduate, there is a paradigm shift as to the role of the traditional student departure theory. Now more students will be transferring to their senior institution, creating a new set of issues as it relates to their development. Therefore, to now examine the impact campus housing has on transfer student academic success and retention is the purpose of this study.
CHAPTER 3

METHODOLOGY

The purpose of this study was to analyze and study three cohort groups of transfer students at Midwestern State University and determine whether or not there was a statistically significant difference between those students who resided in campus housing and those who did not, with respect to academic success and retention rates over a three year period. The study concentrated on those students who transferred from another university and entered Midwestern State University during the fall 2005, 2006, and 2007 semesters. Tests were run to determine if there were statistically significant relationships between housing status, age at the time of transfer, race, and the number of credit hours at the time of transfer, gender, and student academic success.

Subjects

The sample chosen for this study was the new transfer students who were admitted to Midwestern State University during the fall 2005, 2006, and 2007 semesters. This data set included students who were new transfer students to the university, under the age of 21, transferred in with less than 45 semester credit hours from another college or university, and did not have a permanent address in the city in which Midwestern State University is located.

The entering transfer classes of 2005, 2006, and 2007 were studied to help identify any trends and compare the three groups for academic success by race, gender, age, number of semester credit hours at the time of transfer, and place of residence. By comparing these three cohort groups, it should become clear whether the 2004 data found in the Mills (2010) study
was an anomaly, or whether Midwestern State University housing options have not enhanced transfer student academic success as had been anticipated.

The population for this study included three cohort groups, which were comprised of the new transfer students for the fall 2005, 2006, and 2007 semesters who met the university’s requirements for living on campus. Any students, who had achieved less than 45 semester credit hours, were under the age of 21, not married, and not from a local zip code are required under the university’s requirements for living on campus to live on campus. Due to lack of available space, the university could not fully enforce their housing requirement, thus leading to students who met the requirements to live on campus having the option to either live on-campus or choose to live off-campus. The total sample for all three cohort groups was $N = 901$ students, with 55% living off campus and 45% living on campus.

*Table 1*

*Total Population*

<table>
<thead>
<tr>
<th></th>
<th>On Campus</th>
<th>Off Campus</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2005</td>
<td>108</td>
<td>184</td>
<td>292</td>
</tr>
<tr>
<td>Fall 2006</td>
<td>166</td>
<td>157</td>
<td>323</td>
</tr>
<tr>
<td>Fall 2007</td>
<td>131</td>
<td>155</td>
<td>286</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>405</strong></td>
<td><strong>496</strong></td>
<td><strong>901</strong></td>
</tr>
</tbody>
</table>

Each specific cohort group was also studied individually to determine if the distributions of the groups differ from one another, thus telling the researcher if the students’ housing status may have significantly affected their academic success rate.
Research Design

The data set for this study came from data previously collected by the Midwestern State University Office of Institutional Research and consisted of data collected upon admission to the university. These data consisted of all students who were identified as transfer students during the initial time period and met the criteria of the university’s residency policy. The data tracks them through their time at the university. This quantitative data did not reveal any identifiable information but was broken out based on the student’s decision to either live in or not live in university housing during their first semester at Midwestern State University.

Dependent Variable

The dependent variable for this study was measured by three year academic success. The purpose of this study was to determine whether or not housing status and other predictor variables made a difference on the persistence and graduation of transfer students. Therefore, the dependent variable was measured by whether or not the students were academically successful within three years from the date of their initial enrollment at Midwestern State University. This was calculated by determining whether or not the student had graduated or was still enrolled after three years from the date of their initial enrollment. If the student had graduated or was still enrolled, they were determined to be successful. Conversely, if they had not graduated and were no longer enrolled, they were determined to be not successful.

At the time of this analysis, a three year success period was chosen in order to provide a fair comparison. In order to compare the 2005, 2006 and 2007 cohort groups for the same period of time, the three year period of success was chosen. This would allow the 2005 cohort
group to be tracked through the 2007-2008 school year, the 2006 cohort group to be tracked through the 2008-2009 school year, and the 2007 cohort group to be tracked through the 2009-2010 school year.

Independent Variables

The independent variables for this study were race, gender, the student’s place of residence, age, and number of transferred credit hours. Some of the independent variables were dichotomous variables while others were categorical. The variables of race, gender and place of residence were dichotomous variables, and the variables of age and number of transferred credit hours were categorical. For the purpose of this study, all variables were tested at $\alpha=.05$.

For gender, it was either male or female. As evidenced by Miller-Bernal (1993) and others found in previous literature, gender is important to study due to its effect on retention and success. For this study, male students were given the code of 0, and female students were given the code of 1.

Table 2

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>354</td>
<td>39.3</td>
<td>39.3</td>
<td>39.3</td>
</tr>
<tr>
<td>Female</td>
<td>547</td>
<td>60.7</td>
<td>60.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>901</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

For the variable of race, the only two classifications were minority or non-minority white. Due to the small sample size of some of the individual races and the designations used
by the Midwestern State University student information system, it was necessary to make race a dichotomous variable, with the designation of White and non-White groups serving as the two groups. As evidenced by Astin, Tsui, & Avalos (1996) and others, racial status is important to study due to its effect on retention and success. For this study, non-minority white students were given a coding of 0, while non-white minority students were given the code of 1.

Table 3

Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not a minority - White</td>
<td>674</td>
<td>74.8</td>
<td>74.8</td>
<td>74.8</td>
</tr>
<tr>
<td>Minority Student</td>
<td>227</td>
<td>25.2</td>
<td>25.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>901</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 4

Ethnic Background (as indicated in Student Information System)

<table>
<thead>
<tr>
<th>Cohort Group</th>
<th>Ethnic Background</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White, Non-Hispanic</td>
</tr>
<tr>
<td>2005</td>
<td>212</td>
</tr>
<tr>
<td>2006</td>
<td>239</td>
</tr>
<tr>
<td>2007</td>
<td>223</td>
</tr>
<tr>
<td>Total</td>
<td>674</td>
</tr>
</tbody>
</table>

The independent variable for place of residence was figured on whether or not the student lived on campus during his/her first semester after transfer. For this study, students who spent their first semester as a transfer living in off-campus housing were given the code of
0, while the students who spent their first semester as a transfer student living in campus housing were given a code of 1. As evidenced by the work of Astin and others, campus housing status has been shown to be an important variable when measuring student academic success.

Table 5

*Campus Housing Status*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off campus housing</td>
<td>496</td>
<td>55.0</td>
<td>55.0</td>
<td>55.0</td>
</tr>
<tr>
<td>On campus housing</td>
<td>405</td>
<td>45.0</td>
<td>45.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>901</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 6

*Age at Time of Transfer*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 - 15 years</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>16 years</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>17 years</td>
<td>12</td>
<td>1.3</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>18 years</td>
<td>347</td>
<td>38.5</td>
<td>38.5</td>
<td>40.1</td>
</tr>
<tr>
<td>19 years</td>
<td>342</td>
<td>38.0</td>
<td>38.0</td>
<td>78.0</td>
</tr>
<tr>
<td>20 years</td>
<td>129</td>
<td>14.3</td>
<td>14.3</td>
<td>92.3</td>
</tr>
<tr>
<td>21 years</td>
<td>69</td>
<td>7.7</td>
<td>7.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>901</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The independent variable of age was measured as the age of the student at the time of transfer. There were seven naturally occurring classifications, so those were kept as the seven classifications of age. The students who were of age 13-15 were given the value of 13, the students who were 16 years of age were given the value of 16, the students who were 17 years
of age were given the value of 17, the students who were 18 years of age were given the value of 18, the students who were 19 years of age were given the value of 19, the students who were 20 years of age were given the value of 20, and the students who were 21 years of age were given the value of 21.

The final independent variable was transfer credit hours. This variable signifies the number of credit hours the student had achieved prior to the time he or she transferred to Midwestern State University. This continuous variable was categorized into six categories. Students with less than 9 transfer hours were given a code of 1, students with 9 to 15 transfer credit hours were given a code of 2, students with 16 to 24 transfer credit hours were given a code of 3, students with 25 to 30 transfer credit hours were given a code of 4, students with 31 to 39 transfer credit hours were given a code of 5, and students with 40-45 transfer credit hours were given a code of 6.

Table 7

*Credit Hours at Time of Transfer*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>h &lt; 9</td>
<td>301</td>
<td>33.4</td>
<td>33.4</td>
<td>33.4</td>
</tr>
<tr>
<td>9 &lt;= h &lt;= 15</td>
<td>246</td>
<td>27.3</td>
<td>27.3</td>
<td>60.7</td>
</tr>
<tr>
<td>16 &lt;= h &lt;= 24</td>
<td>134</td>
<td>14.9</td>
<td>14.9</td>
<td>75.6</td>
</tr>
<tr>
<td>25 &lt;= h &lt;= 30</td>
<td>96</td>
<td>10.7</td>
<td>10.7</td>
<td>86.2</td>
</tr>
<tr>
<td>31 &lt;= h &lt;= 39</td>
<td>94</td>
<td>10.4</td>
<td>10.4</td>
<td>96.7</td>
</tr>
<tr>
<td>40 &lt;= h &lt;= 45</td>
<td>30</td>
<td>3.3</td>
<td>3.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>901</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Procedures for the Analysis of the Data

The data for the five predictor variables were downloaded into the Statistical Program for the Social Sciences (SPSS) for Windows. This type of statistical software provides a variety of both descriptive and inferential statistical techniques that can be used for educational research. Since the purpose of this study was to indicate the validity of transfer student academic success based upon different predictor variables of transfer student academic success, chi-square analysis and logistic regression were chosen as the statistical procedures.

For this study, each predictor variable was added to the regression model to determine its contribution to the variables that have already been included. This type of analysis is designed to determine the best combination of predictor variables for this study. Once the results were tabulated, they are presented in both graphical and descriptive format.

Research Question 1 asks, is there a statistically significant difference in the overall three year academic success rates for the transfer student cohort groups studied with respect to housing status? To answer this question, each cohort group was analyzed to determine the statistical significance of each entering transfer class. After that, the entire population was examined to determine the statistical significance. Chi-square analysis was chosen as the best method to answer research question one due to the type of data being used. Since this research question asks about the success of housing residents vs. non-residents, the data is dichotomous, with a score of “1” assigned to the students who were academically successful; meaning they either graduated or persisted within three years after the date of their initial enrollment, and a “0” for the students who were not academically successful. Also, since the independent variable is housing status, that data was also dichotomous, with a score of “1”
assigned to the students who lived on campus and a “0” for the students who resided off campus during their first semester.

Chi-square analysis was chosen because both variables are dichotomous. Since the dependent variable (three year academic success rate) is measured by either “yes” or “no,” and the independent variable is assigned a value of either “lived on campus” or “lived off campus,” these dichotomous variables are measured using chi-square analysis. Chi-square statistics are used to investigate whether the distributions of categorical variables differ from one another and compare the tallies or counts of categorical responses between two or more independent groups. Chi-square analysis also allows for the examination of differences between the cohort groups and the population.

Research Question 2 asks, are age, race, housing status, number of transfer credit hours, and gender statistically significant predictors of academic success for the transfer student cohort groups? To answer this question, logistic regression was used to determine the statistical significance of race, gender, housing status, age, and number of transfer credit hours was used to determine three year student success. Student academic success was measured by whether students persisted from semester to semester or graduated within three years from the date of their initial enrollment at Midwestern State University. Depending on the results of research question one; it was determined whether the entire population could be studied as a whole or if the individual cohort groups should be studied individually. If research question one showed that there is no statistically significant difference between each cohort group, then logistic regression would be used on the entire population.
The dependent variable of three year student academic success is a dichotomous variable with the answer being either “yes” or “no.” The independent variables studied were categorical variables. Therefore, logistic regression should be used as this statistical method analyzes the odds probability of the dependent variable occurring as the values of the independent variables change. Logistic regression is very robust, and does not require the independent variable to be normally distributed, or have equal variance in each group, and it does not assume a linear relationship between the independent variable and the dependent variable. Logistic regression also allows the researcher to predict the probability of the nominal variable. This is beneficial in this study, as the study aims to see the influence and probability of three year transfer student success, based on several independent variables.
CHAPTER 4

FINDINGS

The main purpose of this study was to examine the role housing status played in the three year academic success of transfer students at a public, regional four-year institution. By determining if living in campus affiliated housing after the first semester of transfer impacted the student’s three year success, Midwestern State University gains valuable information about the significance of housing status and should be able to administratively program to offset any deficiencies. After the individual cohort groups and total population were studied to determine if campus housing was a significant predictor of success, several other independent variables were also tested. Gender, age, number of semester credit hours at the time of transfer, and race were also tested to determine if they were significant predictors of academic success.

The population for this study consisted of all transfer students for the fall 2005, 2006 and 2007 semesters who met the university’s residency requirement. The students included in this study were all transfer students who were new to Midwestern State University during the fall semester of the year in which they began attendance. Furthermore, all of these students met the university’s requirement to live in campus housing; meaning that they had less than 45 semester credit hours, were under the age of 21, and were from a non-Wichita Falls zip code. The total population \((N = 901)\) was comprised of the fall 2005 class \((n = 292)\), the fall 2006 class \((n = 323)\), and the fall 2007 class \((n = 286)\).

The dependent variable, three year academic success, was defined as whether or not the student was still persisting or had graduated within three years of initial enrollment. The independent variables consisted of housing status, age, minority status, and credit hours.
transferred in. The population was studied both as a whole and as individual cohorts to
determine if housing status during the first semester of transfer was a significant predictor of
academic success. After that, the variables of race, age, gender, and the number of transfer
credit hours were studied for significance.

Research Question 1: Housing Status

Chi-square analysis was conducted to evaluate if there were statistically significant
differences between first semester housing status and three year academic success for both the
individual cohort groups, as well as the entire population. It was necessary to use chi-square
analysis since both the independent variable and dependent variable were dichotomous
variables. Students who lived in campus housing were given a value of “yes” or “no” with a
numerical value of 1 or 0 assigned for each student. Three year student academic success was
also given a value of “yes” or “no” with a numerical value of 1 or 0 assigned for each student.

Fall 2005 Cohort Group

Each cohort group was studied using chi-square analysis to determine the level of
significance that living in campus housing during the first semester of transfer at the senior
institution had on the three year success rate. The first group studied was the fall 2005 cohort.
The fall 2005 cohort group consisted of 292 students who had less than 45 semester credit
hours, were under the age of 21, and did not have a local address from a Wichita Falls zip code
at the time of initial enrollment. Of those 292, 184 resided in off-campus housing, while 108
resided in university affiliated campus housing.
As shown in Table 8, 77 (41.8%) of the 184 students who lived off campus had not graduated or were no longer enrolled after three years of the date of initial enrollment, while 107 (58.2%) of the 184 students who lived off campus were successful, or had graduated from the institution or were still enrolled after three years. Conversely, 52 (48.1%) of the 108 students who lived on campus during their first semester had not graduated or were no longer still enrolled after three years of the date of the initial enrollment, while 56 (51.9%) of the 108 students who lived on campus were successful, or had graduated from the institution or were still enrolled after three years.

After performing the chi-square analysis for the fall 2005 cohort group, it was determined that living in campus housing during the first semester of transfer at the senior institution was not significant at $\alpha=.05$, as indicated by the chi-square value of .295. Since chi-square analysis measures if the distributions of the cohort groups differ from one another, the analysis indicates that living on campus did not differ significantly from living off campus when predicting three year academic success rates.

<table>
<thead>
<tr>
<th></th>
<th>.00 Off campus housing</th>
<th>1.00 On campus housing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00 Not successful 3 years</td>
<td>77</td>
<td>52</td>
<td>129</td>
</tr>
<tr>
<td>1.00 Successful 3 years</td>
<td>107</td>
<td>56</td>
<td>163</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>108</td>
<td>292</td>
</tr>
</tbody>
</table>

**Table 8**

*Fall 2005 Cohort Success Campus Cross Tabulation*
Fall 2006 Cohort Group

The second group studied was the fall 2006 cohort. The fall 2006 cohort group consisted of 323 students who had less than 45 semester credit hours, were under the age of 21, and did not have a local address from a Wichita Falls zip code at the time of initial enrollment. Of those 323, 157 resided in off-campus housing, while 166 resided in university affiliated campus housing.

Table 9

*Fall 2006 Cohort Success Campus Cross Tabulation*

<table>
<thead>
<tr>
<th></th>
<th>.00 Off campus housing</th>
<th>1.00 On campus housing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00 Not successful 3 years</td>
<td>57</td>
<td>71</td>
<td>128</td>
</tr>
<tr>
<td>1.00 Successful 3 years</td>
<td>100</td>
<td>95</td>
<td>195</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>166</td>
<td>323</td>
</tr>
</tbody>
</table>

As shown in Table 9, 57 (36.3%) of the 157 students who lived off campus had not graduated or were no longer enrolled at Midwestern State University after three years of the date of the initial enrollment, while 100 (63.7%) of the 157 students who lived off campus were successful, or had graduated from the institution or were still enrolled after three years.

Conversely, 71 (42.8%) of the 166 students who lived on campus during their first semester had not graduated or were no longer enrolled at Midwestern State University after three years of the date of the initial enrollment, while 95 (57.2%) of the 166 students who lived on campus were successful, or had graduated from the institution or were still enrolled after three years.

After performing the chi-square analysis for the fall 2006 cohort group, it was determined that living in campus housing during the first semester of transfer at the senior
institution was not significant at $\alpha=.05$, as indicated by the chi-square value of .235. Since the distributions of the cohort groups were not different from one another, the analysis indicates that living on campus did not differ significantly from living off campus when influencing three year success rates.

**Fall 2007 Cohort Group**

The third group studied was the fall 2007 cohort. The fall 2007 cohort group consisted of 286 students who had less than 45 semester credit hours, were under the age of 21, and did not have a local address from a Wichita Falls zip code at the time of initial enrollment. Of those 286, 155 resided in off-campus housing, while 131 resided in university affiliated campus housing.

**Table 10**

**Fall 2007 Cohort Success Campus Cross Tabulation**

<table>
<thead>
<tr>
<th></th>
<th>.00 Off campus housing</th>
<th>1.00 On campus housing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00 Not successful 3 years</td>
<td>55</td>
<td>43</td>
<td>98</td>
</tr>
<tr>
<td>1.00 Successful 3 years</td>
<td>100</td>
<td>88</td>
<td>188</td>
</tr>
<tr>
<td>Total</td>
<td>155</td>
<td>131</td>
<td>286</td>
</tr>
</tbody>
</table>

As shown in Table 10, 55 (35.5%) of the 155 students who lived off campus had not graduated or were no longer enrolled after three years of the date of the initial enrollment, while 100 (64.5%) of the 155 students who lived off campus were successful, or had graduated from the institution or were still enrolled after three years. Conversely, 43 (32.8%) of the 131 students who lived on campus during their first semester had not graduated or were no longer
enrolled after three years of the date of the initial enrollment, while 88 (67.2%) of the 131 students who lived on campus were successful, or had graduated from the institution or were still enrolled after three years.

After performing the chi-square analysis for the fall 2007 cohort group, it was determined that living in campus housing during the first semester of transfer at the senior institution was not significant at $\alpha=.05$, as indicated by the chi-square value of .637. Since the distributions of the cohort groups were not different from one another, the analysis indicates that living on campus did not differ significantly from living off campus when influencing three year academic success rates.

**Total Population**

The final group studied was the total population, or all three cohort groups combined. The entire population consisted of 901 students who had less than 45 semester credit hours, were under the age of 21, and did not have a local address from a Wichita Falls zip code at the time of initial enrollment. Of those 901, 496 resided in off-campus housing, while 405 resided in university affiliated campus housing.

**Table 11**

<table>
<thead>
<tr>
<th></th>
<th>.00 Off campus housing</th>
<th>1.00 On campus housing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00 Not successful 3 years</td>
<td>189</td>
<td>166</td>
<td>355</td>
</tr>
<tr>
<td>1.00 Successful 3 years</td>
<td>307</td>
<td>239</td>
<td>546</td>
</tr>
<tr>
<td>Total</td>
<td>496</td>
<td>405</td>
<td>901</td>
</tr>
</tbody>
</table>
As shown in Table 11, 189 (38.1%) of the 496 students who lived off campus had not graduated or were no longer enrolled after three years of the date of the initial enrollment, while 307 (61.9%) of the 496 students who lived off campus were successful, or had graduated from the institution or were still enrolled after three years. Conversely, 166 (41%) of the 405 students who lived on campus during their first semester had not graduated or were no longer enrolled after three years of the date of the initial enrollment, while 239 (59%) of the 405 students who lived on campus were successful, or had graduated from the institution or were still enrolled after three years.

After performing the chi-square analysis for the entire population, it was determined that living in campus housing during the first semester of transfer at the senior institution was not significant at $\alpha=.05$, as indicated by the chi-square value of .378. Since chi-square analysis measures if the distributions differ from one another, the analysis indicates that living on campus did not differ significantly from living off campus when influencing three year academic success rates.

The chi-square analysis indicated that there were no statistically significant differences for any of the individual cohort groups in regard to the impact that campus housing status had upon predicting the three year academic success of transfer students. Since none of the individual cohort groups were significant, and the total population as a whole was not significant, the remainder of the analysis did not study the individual cohort groups. All of the remaining independent variables were tested on the entire population, rather than the individual cohort groups.
Research Question 2: Race, Gender, Age, and Transfer Hours

Logistic regression was used to determine the statistical significance of the independent variables in predicting the three year academic success of the transfer student cohort groups. Since the chi-square analysis in research question one indicated that by itself, campus housing was not a significant predictor of academic success in any of the individual cohort groups, the total population was studied \((N = 901)\) in this research question as a whole and not analyzed by each specific cohort group. Logistic regression was used because the dependent variable was dichotomous, and we are predicting that dichotomous variable with other variables. This regression analysis tested the significance of each individual variable in predicting student success, or how much of the variance in academic success the individual variables account.

The logistic regression was performed on the entire population of three transfer student cohort groups. As evidenced by Table 12, the case processing summary in SPSS indicates that the entire population is included in the analysis and there are no missing cases. The classification table indicates the percentage of successful cases in the population, which is 546 out of 901, or 60.6%.

Table 12

Classification Table

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not successful 3 years</td>
<td>Successful 3 years</td>
</tr>
<tr>
<td>Not successful 3 years</td>
<td>0</td>
<td>355</td>
</tr>
<tr>
<td>Successful 3 years</td>
<td>0</td>
<td>546</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Constant is included in the model. The cut value is .500.
The Wald test, used in logistic regression, is analogous to the t test and has a value of .000 as indicated in Table 13. This indicates that the constant, by itself, shows that the model is able to significantly improve the prediction of three year student academic success.

Table 13

**Wald Test**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.431</td>
<td>.068</td>
<td>39.870</td>
<td>1</td>
<td>.000</td>
<td>1.538</td>
</tr>
</tbody>
</table>

The omnibus test of model coefficients table (Table 14), contains the model chi-square value of 13.017 which is the difference between the constant only model and the full model. In this case, because the significance value of .023 is less than .05, it indicates that the independent variables improve prediction of academic success in the outcome.

Table 14

**Omnibus Tests of Model Coefficients**

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step</td>
<td>13.017</td>
<td>5</td>
<td>.023</td>
</tr>
<tr>
<td>Model</td>
<td>13.017</td>
<td>5</td>
<td>.023</td>
</tr>
</tbody>
</table>

Nagelkerke $R^2$ is preferred over the Cox and Snell $R^2$ because it can achieve a maximum value of 1, while the Cox and Snell cannot. In Table 15, the Nagelkerke $R^2$ value of .019 tells us that the model accounts for only 1.9% of the variance, which indicates that the model does not predict the academic success rate well.
Table 15

Model Summary

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1195.236&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.014</td>
<td>.019</td>
</tr>
</tbody>
</table>

Table 16

Hosmer and Lemeshow Test

<table>
<thead>
<tr>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.715</td>
<td>8</td>
<td>.462</td>
</tr>
</tbody>
</table>

Table 17

Contingency Table for Hosmer and Lemeshow Test

<table>
<thead>
<tr>
<th></th>
<th>Not successful 3 years</th>
<th>Successful 3 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Expected</td>
<td>Observed</td>
</tr>
<tr>
<td>1</td>
<td>45</td>
<td>42.389</td>
<td>39</td>
</tr>
<tr>
<td>2</td>
<td>43</td>
<td>42.787</td>
<td>49</td>
</tr>
<tr>
<td>3</td>
<td>46</td>
<td>40.749</td>
<td>47</td>
</tr>
<tr>
<td>4</td>
<td>34</td>
<td>39.598</td>
<td>62</td>
</tr>
<tr>
<td>5</td>
<td>32</td>
<td>35.523</td>
<td>58</td>
</tr>
<tr>
<td>6</td>
<td>27</td>
<td>33.749</td>
<td>63</td>
</tr>
<tr>
<td>7</td>
<td>39</td>
<td>36.945</td>
<td>63</td>
</tr>
<tr>
<td>8</td>
<td>30</td>
<td>32.010</td>
<td>62</td>
</tr>
<tr>
<td>9</td>
<td>28</td>
<td>24.669</td>
<td>47</td>
</tr>
<tr>
<td>10</td>
<td>31</td>
<td>26.581</td>
<td>56</td>
</tr>
</tbody>
</table>

The Hosmer and Lemeshow test in Table 16 give us a chi-square value of 7.715 with a significance of .462. This non-significant chi-square tells us that the predicted probabilities
match the observed probabilities. This is the desired outcome, because the goal is to have a non-significant $p$ value that indicates the ability to derive predictors that will accurately predict actual probabilities. In this case, the goodness of fit statistic is 7.715, distributed and tested as a chi-square value, and is associated with a $p$ value of .462, which indicates an acceptable match between predicted and observed probabilities.

The classification table (Table 18) indicates how well the model classifies cases into the categories of successful or not successful. The overall predictive accuracy is 61%. The model seems to predict academic success (96.3%) much better than non academic success (6.8%). Earlier, without considering any of the independent variables, the likelihood of a correct prediction was 60.6%. This is a very small difference (0.4%) after the variables were added to the equation.

Table 18
*Classification Table*

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not successful 3 years</td>
<td>24</td>
<td>331</td>
</tr>
<tr>
<td>Successful 3 years</td>
<td>20</td>
<td>526</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The variables in the equation table (Table 19) indicate the $b$ coefficients and the standard errors. A coefficient close to 0 suggests that there is no change due to the predictor variable. The significance column indicates the $p$ value for testing whether or not a predictor is significantly associated with success exclusive of any others. The Exp(B) column provides the odds ratio.
Table 19

Variables in the Equation

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% C.I. for EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Campus</td>
<td>-.192</td>
<td>.141</td>
<td>1.846</td>
<td>1</td>
<td>.174</td>
<td>.826</td>
<td>.626</td>
</tr>
<tr>
<td>Gender</td>
<td>.415</td>
<td>.141</td>
<td>8.606</td>
<td>1</td>
<td>.003</td>
<td>1.514</td>
<td>1.148</td>
</tr>
<tr>
<td>Race</td>
<td>.018</td>
<td>.161</td>
<td>.013</td>
<td>1</td>
<td>.909</td>
<td>1.019</td>
<td>.742</td>
</tr>
<tr>
<td>Hours</td>
<td>.066</td>
<td>.053</td>
<td>1.539</td>
<td>1</td>
<td>.215</td>
<td>1.068</td>
<td>.963</td>
</tr>
<tr>
<td>Age</td>
<td>-.140</td>
<td>.083</td>
<td>2.861</td>
<td>1</td>
<td>.091</td>
<td>.870</td>
<td>.739</td>
</tr>
<tr>
<td>Constant</td>
<td>2.743</td>
<td>1.516</td>
<td>3.273</td>
<td>1</td>
<td>.070</td>
<td>15.527</td>
<td></td>
</tr>
</tbody>
</table>

According to this model, gender is a statistically significant predictor of three year academic success. Females (coded as 1), are 1.514 times more likely to be successful than males when all other variables are controlled. The remainder of the variables, race, place of residence, age, or number of semester credit hours at the time of transfer, were not found to be statistically significant predictors of three year academic success.

Summary

This chapter presented the analysis of the data stated for the two research questions in chapter 1. The first research question tested for significant differences between three year academic success and whether or not the student lived in campus housing during their first semester after transfer for the fall 2005, 2006, and 2007 cohort groups, and then the total population. After performing the chi-square analysis, it was found that living in campus housing during the first semester after transfer was not a significant predictor of academic success for any of the individual cohort groups or for the total population.
The second research question desired to determine the statistical significance of each of
the independent variables on predicting three year academic success. After performing logistic
regression analysis, it was found that of the independent variables of race, gender, place of
residence, age, and number of transfer credit hours, only gender was a statistically significant
predictor of three year academic success. Along with gender being statistically significant, it
further explained that females were more likely than males to either still be enrolled or have
graduated within three years of the date of initial enrollment at the senior institution. A
discussion of these findings is presented in chapter 5 along with implications for the findings
and suggestions for future research.
CHAPTER 5

SUMMARY, CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

Restatement of Problem and Purpose of Research

The impact of university housing on student success is a topic that has warranted much research and is paramount to the mission of many colleges and universities. University housing provides opportunities for students to interact with their peers and to be exposed to opportunities that coexist with the mission of the university. As shown through Astin’s Theory of Involvement (1994), students who live on campus participate in more campus activities, engage more with their peers, and are genuinely more connected to the campus than their peers who live off-campus. These activities, in turn, have shown to be positively correlated with higher levels of persistence and graduation.

The purpose of this study was to determine the level of significance that living in campus housing during their first year of transfer at the senior institution had on the three year academic success of transfer students. The three year academic success was measured by whether or not the student was still enrolled or had graduated after three years at the senior institution. If the student was still enrolled or graduated, they were considered academically successful. If the student had not graduated or was no longer enrolled after three years, they were classified as unsuccessful.

This knowledge will be valuable as it will inform both the professional literature and university administrators about the impact that campus housing may have on transfer students’ academic success. Some of the theoretical framework that applied to this study; Astin’s Theory of Involvement (1994) and Tinto’s Theory of Student Departure (1993), indicate criteria that are
important to student success and are important functions of university housing. While these theories have been primarily applied to freshman students and their housing affiliation, this study uses those theories to examine the role university housing had on transfer students at a public regional university in the southwest.

For this study, three cohort groups made up of new transfer students to Midwestern State University in the fall 2005, 2006, and 2007 academic years, comprised the population. To be included in this study, the transfer student must have met the university’s requirements to live on campus but not necessarily must have done so. Those requirements were: less than 21 years of age, had accumulated less than 45 semester credit hours at the time of transfer, and did not have a local address from a Wichita Falls zip code.

Each of the cohort groups was tracked for three continuous years, and the dependent variable was three year academic success. If the students were still enrolled at the university, or had graduated, they were deemed as academically successful. If they were no longer enrolled in the university at the end of three years and had not graduated, they were deemed as unsuccessful. There were a total of 901 students included in this study, 292 in the fall 2005 cohort group, 323 in the fall 2006 cohort group, and 286 in the fall 2007 cohort group.

There were several different independent variables that were tested for significance. Place of residence, or for this study defined as whether or not the student lived in campus affiliated housing during their first semester of transfer, was one of the variables tested. According to Astin (1994) and Tinto (1993), integration and involvement are important factors in student retention. Campus housing has been shown to positively impact retention and was therefore an important variable to study when attempting to predict student academic success.
Other independent variables studied in this analysis included age, minority status, gender, and credit hours at the time of transfer. Previous literature had determined that each of these variables were worthy of study. Age was shown to be an important variable as evidenced in Elkins, Braxton, and James (2000), and Tinto (1993). Gender was shown to be an important variable based upon previous work done by Miller-Bernal (1993), Magolda (1992) and Astin, Tsui, and Avalos (1996). Transfer credit hours were also deemed to be a variable worth examining based upon Kisker (2007) and Hirose (1994). Finally, racial status was shown to be an important variable based upon the work of Chang (2001), Astin et al. (1996), and Cabrera, Nora, Terenzini, Pascarella, and Hagedorn (1999). However, in this study only gender of the transfer student was found to be a statistically significant predictor of student academic success.

Conclusions and Discussion

This study aimed to study the academic success of transfer students and the effect that certain independent variables had on that three year success rate. Conclusions and discussion pertaining to each specific research question are presented below based upon the findings in Chapter 4.

Research Question 1: Is there a statistically significant difference in the overall three year academic success rates for the transfer student cohort groups studied with respect to housing status?

The first research question aimed to determine if housing status impacted the three
year academic success of each of the three cohort groups. After determining the number of transfer students who met the Midwestern State University residency requirements during their first semester of transfer, each cohort group was broken down into two categories: those who lived in campus affiliated housing during their first semester of transfer and those who did not. Each cohort group was then followed for a three year period from the date of their first semester. If they were successful: had either graduated or were still enrolled, they were given a categorical rating of “1,” and if they were not successful: had not graduated and were no longer enrolled after three years they were given a categorical rating of “0.” Therefore, the data included the number who lived on or off campus and the number who were successful after three years for each cohort group and therefore, the total population of 901 students.

The chi-square analysis indicated that there were no significant differences in distributions of the students who lived off campus and the students who live on-campus in any of the individual cohort groups. That data indicated that the group of transfer students who lived on campus did not differ significantly from the group of transfer students who lived off campus as it relates to their three year academic success rates. This is in contrast to what both Astin (1994) and Tinto (1993) based their theories upon. They concluded that the involvement of living in campus housing and the ability of campus housing to help students go through the stages of separation would be beneficial to helping students persist. However, this study found that the transfer students who lived in campus housing during their first semester of transfer at Midwestern State University were no more statistically successful than their peers who lived off campus during their first semester.

There are several factors that could explain this phenomenon. First, the population that
was examined in this study only consisted of transfer students. In Christie and Dinham (1991), they found that freshmen students who lived in campus housing indicated that they were exposed to more opportunities to become involved and thus reported more connection to the university. In theory, this principle should be the same for the population in this study. However, transfer students may be more accustomed to college life and the exposure to campus events may not be as significant for the transfer student population as it is the freshmen student population. Astin (1994) also found that students who live on-campus have more opportunities to get involved and interact with their peers. Again, this study was based upon a freshman population and therefore may differ than that of this specific transfer population. This theory is based upon residence hall environments where community development is a major point of emphasis. Older students and transfer students are traditionally assigned to more private accommodations such as the campus apartments. These types of living environments do not enhance the same level of community development and are quite similar to what can be found in the off-campus market. It is important to note that the majority of the literature focused on freshman students and the interaction that university housing plays on their development. This study only examined transfer students.

Tinto’s Theory of Student Departure (1987) focused on the stages that all college students must go through. In his model, students must go through the phases of separation, transition, and incorporation. Braxton, Elkins, and James (2000) applied Tinto’s Theory of Departure to a group of first semester students and noticed that all students must go through some form of departure before they can move on to the stage of transition and incorporation. In this study, it is a different population that is being compared. This study examined transfer
students, who may have already undergone different levels of separation and incorporation at their previous institution. It should be considered that several of these transfer students may have experienced this transformation at their previous institution and that by the time they transferred to Midwestern State University, it was much easier for them to integrate into their new surroundings. Prior to their enrollment at the senior institution, transfer students have had some level of experience at a previous college or university. Since they have already experienced the college environment prior to enrolling at the senior institution, it is reasonable to envision a situation where the transfer student has gone through some level of Tinto’s Departure theory, making them less susceptible to the first time negative experiences of the college environment. Furthermore, with housing accommodations for transfer students generally being more private than freshmen arrangements, the structure is not in place to build the same level of residence hall community that freshmen students receive in a more traditional residence hall environment.

In previous studies and throughout the literature, university housing has been shown to play a significant role in the development and academic success of freshmen students. However, there is little evidence in the literature about the impact university housing has upon transfer students at their senior institution. Through chi-square analysis, this study found that living in campus housing during the first semester of transfer at the senior institution was not significant at $\alpha=.05$, as indicated by the chi-square value of $0.378$. While these results are an important start, it should be noted that this is a single-institution study and should be replicated at other institutions before more definitive conclusions are drawn.
Research Question 2: Are age, race, housing status, number of transfer credit hours, and gender statistically significant variables for predicting the academic success of the transfer student cohort groups?

The second research question aimed to determine if the variables of age at time of transfer, number of semester credit hours at the time of transfer, gender, minority status and campus housing status impacted the three year academic success rate of the same population of transfer students. Since the chi-square analysis did not indicate any difference in the distributions of the individual cohort groups, the entire population was studied as one.

Since the dependent variable of success was a dichotomous variable and the independent variables were also either dichotomous or categorical, logistic regression was chosen as the preferred method of analysis. This regression analysis tested the significance of each independent variable in predicting the three year academic success of transfer students. It also explained how much of the variance in success the individual variables accounted for.

When just analyzing the number of successful (546) and non-successful (355) transfer students in the population (N=901), the percentage of successful cases was 60.6%. After all of the independent variables were added to the equation, the overall predictive accuracy of model was 61%, which is a very small difference after the variables were added to the equation.

The variables in the equation were all tested for their significance in predicting the impact on academic success. Of all the independent variables, only gender (.003) was found to be significant at \( \alpha=.05 \). The \( \text{Exp}(B) \) value in the analysis, (1.514) for gender, provided the odds ratio, which is one of the more important factors in logistic regression. That value indicates that females were 1.514 times more likely to be successful than males when all other variables were controlled. None of the remaining independent variables of housing status, minority
status, transfer hours, or age were found to be significant predictors of three year transfer student academic success.

The finding in this study of gender being a significant factor is consistent with the findings of Wolf-Wendel, Baker, and Morphew (2000). In their study, they found that when studying the entire population, studies that focused on institutional size and women were found to be a negative, but significant factor. However, when they studied female community college transfer students who transferred with positive academic characteristics, they found that those female students were more likely to make a successful transition to their senior institution. Based upon this finding and the fact that this study only examined transfer students, it is reasonable to understand why these findings were significant.

These findings are also consistent with the findings of the study completed by Solomon (2001). In that analysis, the author found that of students who transferred from a community college to a senior institution and students who began their career at the senior institution, women significantly outperformed the men. This is consistent with the findings of this study. In this study, women were much more likely to outperform their male counterparts as evidenced by the odds ratio found in this logistic regression analysis.

The majority of the students who transferred would not be able to transfer to the senior institution without displaying some positive academic traits. However, an area that cannot be traced specifically in this study but should be looked at in future studies is the focus of residence life programs and the overall success rates of the individual genders at this specific institution. Gender success may favor females in this study based upon factors at this specific institution that are more favorable to females.
It is interesting to note that this study found that the age at the time of transfer and the number of credit hours transferred were found to be non-significant. For this study, the age of the transfer student and number of transfer credit hours at the time of transfer was used.

As it relates to the number of completed credit hours at the time of transfer, the variable was found to be insignificant at $\alpha=.05$ with a $p$-value of .251. This contradicts what was found to be significant in Best and Ghering’s (1993) analysis. Best and Ghering found that as students achieve more credit hours prior to transfer, the more likely that student is to persist. However, their analysis indicated that 60 credit hours was the significant determining factor in whether the student would have success at the senior institution.

This study, based upon the host institution’s residency requirement, only examined those transfer students who had less than 45 credit hours at the time of transfer. This study found that using transfer credit hours as a predictor of transfer student academic success at the senior institution was not significant based on including only those students who had less than 45 semester credit hours. These results could be explained by Best and Ghering’s hypothesis that those who transferred in less than 60 semester credit hours would not be able to handle the environment and would have higher dismissal rates than their counterparts. It is possible that this study found credit hours to be insignificant because it never reached the threshold of 60 credit hours. It may indicate that students who transfer with less than 45 semester credit hours have not reached the point where matriculation to the college environment has been fully achieved.

This study also examined the level of impact that age at the time of transfer had upon predicting the success at the senior institution. According to the results of this study, age at the
time of transfer was not a significant predictor of three year success. This is inconsistent with the findings of Terenzini, Cabrera, and Bernal (2001) who found that delays in enrolling in postsecondary education will have a significant but negative impact on the success of students.

However, this study only examined students who were under the university’s residency requirement at the time of transfer. By definition of the university’s residency requirement, this study only examined those students who were less than 21 years of age at the time of transfer. This does not typically fall into the classification given by Cleveland-Innes (1994) as traditional vs. non-traditional students. This may explain why this variable did not turn out to be significant. If this variable included all transfer students, not just those that are required to live in university housing, age very well could have been a significant predictor of transfer student success. However, because all of these students were less than 21 years of age at the time of transfer, it is conceivable that many of these students did not experience having a difficult time socially integrating into college life that older, non-traditional students may experience.

The effect size, which is indicated in logistic regression by the Nagelkerke $R^2$, had a value of .019. This value tells us that the model only accounts for 1.9% of the variance, indicating that the model may not be a great predictor of student academic success.

Implications for Practice

The results of this study should assist the Midwestern State University administration and faculty about factors that influence transfer student success. Not only are the findings similar in some areas to those found in previous literature, but they also reflect common
practice on whether transfer students decide to live in campus housing. However, this study also indicates that there are some areas within this particular population of study that differ from what is found in the literature. While this study only examined the students who met the university’s residency requirement at the time of transfer, it is very practical that it would be these types of students who would need to decide whether to live in campus housing or make arrangements to live off-campus. Transfer students often will have the option to live on-campus or off-campus when making their housing arrangements for the upcoming year, and this study is important to giving them a good understanding of the advantages of living in campus housing as a transfer student.

This study is significant as the information it provides to housing staff and transfer students is important as it relates to transfer student academic success. As the number of transfer students continues to grow, universities and their advisors, faculty, and staff need to continue to develop an understanding of the characteristics that affect the success rate of transfer students. The results of this study may provide new insight as to potential ways to alter housing assignment policy based upon the findings in this study. These results may show that there is not a one size fits all method for the housing assignment of those transfer students who live in campus housing.

University housing staffs who manage the residence life aspect could also benefit from these findings. Since the analysis indicated that living in campus housing was not a significant predictor of transfer student academic success, housing staff may be able to look at programs and events that target transfer students who live in housing. This may provide additional opportunities for housing professional staff to address issues specifically relating to transfer
students, thus providing assistance in areas that are of concern for transfer students. By identifying these areas that are important to transfer students, housing staffs may be able to program on specific areas that can increase transfer student success. These results may also provide the host institution with useful information about the fact that just because a student has prior experience at another college or university, they may not have fully gone through the stages of separation found in Tinto’s model and may be continuing that process at the new institution.

This study indicates that many of the categorical variables used to study transfer student success are consistent with previous literature. While there have been previous studies that examine the relationship between campus housing status and success for freshman students, this study informs the literature of the effects on transfer students and their housing status during their first semester at the senior institution. Much attention has been paid to the freshman year experience, but by examining the factors that lead to transfer student success, universities may be able to offer more effective programming directed towards transfer students.

This study also indicates that there is a possible disconnect between the positive effects of campus housing shown in previous literature, and the actual results of this study. While gender was a statistically significant predictor of transfer student academic success, whether or not the student lived in campus housing was not significant. This contradicts previous literature and the stated positive characteristics of living on campus.

This study tells us whether or not specific variables predict three year transfer student academic success. However, why the results turned out the way they did was not determined.
Focus groups should be conducted to determine why or why not certain variables did or did not have an impact on transfer student academic success. Housing policy at the time of the study required all students who were under the age of 21, had less than 45 semester credit hours, and did not live in a local zip code to reside in campus housing. Due to lack of availability, all students who met the criteria to live on campus may not have been able to live on campus. However, the ones that did were more than likely assigned to a garden style apartment complex that had exterior entrances and lack of institutional control. Furthermore, students who could not be accommodated in that apartment complex may have been assigned to traditional residence halls that normally housed freshmen students.

Neither of these options provided the ideal setting for transfer student academic success. Garden style apartment complexes are not conducive to the residential life model, as students have access to their apartments without the need for socialization and may or may not have frequent interaction with their RA. Additionally, students who were assigned to traditional freshman housing may not have felt a connection to their residential community. Residence life programming and experiences designed for freshmen students may have had a significantly different impact on transfer students.

In August 2008, Midwestern State University opened its second single student apartment complex. This facility was designed with the residential life model in mind, and the building was designed with controlled access points, interior hallways, and common space more in line with a traditional residence hall. It would be beneficial to continue to study this topic after the transfer student cohort groups who lived in the new facility could be compared.
Determining if building architecture impacts transfer student academic success could be valuable information for practice.

The data did indicate that student gender did impact student success, while other variables were not significant. While some weak significance was indicated, the relationship was not strong, and indicates that further research should be conducted in these areas.

Recommendations for Future Research

This study was limited to data at one institution and only looks at academic success for a three year period of time. Also, there were certain characteristics that permitted only certain independent variables to be considered. The following are recommendations for future research:

1. Future researchers may consider including data from more than one institution to determine if this study can be further generalized. This single institutional study may provide different results when conducted at other universities or across multiple universities.

2. This study should be repeated at an institution where transfer student G.P.A. is an available variable to be included in the analysis. This analysis was not able to examine if transfer student G.P.A. was significant because the data were not available prior to 2008. Previously published literature has indicated that student G.P.A is a significant variable in predicting academic success for transfer students. It is also recommended that all university Institutional Research offices try and keep records of this information upon entrance to the university.

3. This study was only able to look at racial identification as either white or non-white due to sample sizes. Previous literature has indicated that race can be a significant predictor in determining the level of academic success that transfer students have. Future research with a larger sample size could focus on determining if individual races impacts transfer student success.

4. This study only included those students who met the university’s residency requirement at the time of transfer. Due to housing capacity, this university had a 45 hour residency requirement and therefore did not allow the study to reach the
threshold of 60 transfer credit hours. Previous literature has indicated that 60 transfer credit hours is a significant predictor of transfer student academic success. It may be beneficial to replicate this study using students who had achieved 60 transfer credit hours before transferring to Midwestern State University.

5. This study should be replicated using the transfer students who met the same criteria during the Fall 2008, Fall 2009, and Fall 2010 cohort groups. Since the second apartment complex was constructed using more of a traditional residence hall design, this would allow for comparison, and conclusions could be drawn based upon the different type of architecture. This may indicate whether or not building design might play a factor in the role of campus housing on transfer student academic success.

According to the results from this study, which was conducted at a regional, public, 4-year institution, transfer students who lived in campus housing during their first semester of transfer did not achieve three year academic success at a significantly different rate than those who chose to live off-campus. However, this study did find that gender was a significant predictor of three year transfer student academic success, and that females were 1.514 times more likely to be successful than males. Although this study did indicate that no other variable was statistically significant, the relationship was weak.

After examining the findings, it is still beneficial for university administrators to look for ways to assist transfer students with programs to aid in their success. Transfer students will continue to be an important segment of the university population and by looking for variables that predict success, transfer students may increase their opportunities to be successful and obtain a college degree.
REFERENCES


