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Comparing the student profile characteristics between traditional residential and commuter students at a public, research-intensive, urban commuter university

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COMPARING THE STUDENT PROFILE CHARACTERISTICS BETWEEN
TRADITIONAL RESIDENTIAL AND COMMUTER STUDENTS
AT A PUBLIC, RESEARCH-INTENSIVE, URBAN
COMMUTER UNIVERSITY

by

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A dissertation submitted in partial fulfillment
of the requirements for the

Doctor of Philosophy in Higher Education Leadership
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THE GRADUATE COLLEGE

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ABSTRACT

Comparing the Student Profile Characteristics Between Traditional Residential and Commuter Students at a Public, Research-Intensive, Urban Commuter University

by

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The residential-versus-commuter student comparison has been contemporaneous in higher education research since Arthur Chickering's classic study in 1974. However, the majority of these empirical comparisons were conducted at residential institutions or used a variety of institutions that were weighted toward residential institutions. Therefore, there is a need for further empirical research comparing traditional residential and commuter students at commuter institutions. This study compared the student profile characteristics, which were categorized as demographic, prematriculation, and matriculation, between traditional residential and commuter students at a public, research-intensive, urban commuter university. Status attainment served as the theoretical framework for this comparative classification study. By using secondary institutional data, the researcher employed a discriminant function analysis to examine how the student profile characteristics were classified between the two student groups.

The results of the study suggest that compared to their residential student peers, commuter students were more likely to be Hispanic and were more likely to be in-state students. Compared to their commuter student peers, residential students were more likely to be African American, possess a higher socioeconomic status, have parents with

a higher level of education, accumulate more grossed units (class credits), and use higher amounts of financial aid in the forms of work study, grants, and loans. There were no differences in prematriculation characteristics, which were defined as high school GPA and standardized tests, between to the two student groups. When comparing the academic success measures within the matriculation characteristics, there were essentially no difference between the residential and commuter students, as GPA, retention, and academic standing did not receive group membership. The only academic success measure that classified between the two groups was cumulative grossed units. Therefore, this study suggested that commuter students at this commuter institution were not disadvantaged in terms of academic success, which diverges from the greater body of previous research.

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CHAPTER 1

OVERVIEW

American higher education was historically established for intellectually and financially privileged Caucasian males (Cohen, 1998). Higher education has significantly evolved since the late 1630s and has opened the doors to millions despite their gender, ethnicity, or social status. Coupled with the increase of access is the development and evolution of diverse forms of postsecondary institutions. Higher education today incorporates several different institutional types that possess distinguishing attributes: two-year or four-year, public or private, research or comprehensive, for-profit or not-for-profit, commuter or residential, and more. One of the more prominent collegiate models that emerged through the country's massification of higher education, especially in the West, is the public urban commuter campus (Cohen, 1998). These institutions, although ever evolving, were originally created to offer student access through convenient locations and relatively low tuition prices (Astin, 1977; Cohen, 1998). Today's public urban commuter campuses are more diverse and complex than ever before.

As national student enrollments continue to become more diverse (Pascarella & Terenzini, 2005), the diversity of students at public commuter institutions increase exponentially. This correlation can most likely be attributed to public urban institutions enrolling more diverse student populations than traditional private and/or rural institutions (e.g., ASHE-ERIC, 2004; El-Khawas, 1996; Jacoby & Garland, 2004). With such dynamics, continual research is needed to examine these complex student characteristics, especially in regards to specific institutional types (Braxton & Hirschy, 2005; Pascarella & Terenzini, 2005). Braxton and Hirschy (2005) provide a simple

recommendation for commuter institutions, “Administrators and individual faculty members should know the characteristics of students enrolled at their college or university” (p. 81). Therefore, an institution’s first step toward finding solutions for student issues, like low retention rates or poor academic performance, should be searching for a comprehensive understanding of its students’ characteristics.

Over the past four decades, higher education researchers have frequently examined and compared student characteristics by separating students into two primary groups – residential and commuter. Arthur Chickering’s (1974) classic work is credited for bringing the residential-versus-commuter comparison into the national spotlight, and many empirical studies have built on his foundational work. Yet, the overwhelming majority of these empirical comparisons have been conducted at residential institutions or have used an unbalanced amount of residential institutions in their longitudinal studies (Dugan, Garland, Jacoby, & Gasiorski, 2008; Weissberg, Owen, Jenkins, & Harburg, 2003). Therefore, there is a need to develop further research that builds upon the residential-versus-commuter student comparison at commuter institutions. For this reason, this study examines and compares the student profile characteristics of traditional residential and commuter students at a public, research-intensive, urban commuter university.

Overview of Residential and Commuter Students

This section provides the general underpinnings for understanding residential and commuter student populations. As inferred by definition, residential and commuter students dissimilarities begin with their living locations. Residential students are commonly defined as students living in institutionally owned or operated facilities on-

campus, and commuter students are conversely defined as students living off-campus in non-institutionally owned or operated housing (Jacoby & Girrell, 1981; Jacoby, 1989). Yet, higher education literature suggests that the two student groups possess inherent differences that stretch beyond their living location. In general, commuter students are a more heterogeneous population who are viewed (although somewhat less as research progresses) as being “disadvantaged” to residential students because they lack the opportunities offered by the residential hall experience (e.g., Astin, 1975, 1977, 1993; Chickering, 1974; Pascarella, Bohr, Desler, & Zusman, 1994).

Commuter students overwhelmingly constitute the majority of today’s student population, representing more than 85% of the nation’s college enrollment when considering all types of institutions (Horn & Nevill, 2006). Across all institutional types, commuter students have a broader age-range and represent a significantly higher portion of minorities (Chickering, 1974; Jacoby, 2000). They reside in diverse living arrangements and arrive on-campus by dissimilar means of transportation (Wilmes & Quade, 1986). Commuters frequently face struggles relating to multiple life roles (e.g., parenting, full-time employment, community roles), have problems finding and integrating into social support systems, and are challenged in developing a sense of belonging to their institution (e.g., ASHE-ERIC, 2004; Keeling, 1999; Tinto, 1975, 1985, 1993; Wilmes & Quade, 1986). Commuter students face unfortunate stigmas pertaining to possessing lower levels of commitment to their education, setting fewer educational goals, being apathetic to campus operations/issues, or engaging less academically (Jacoby, 2000; Jacoby & Garland, 2004; Steward & Rue, 1983).

Residential students are often viewed as students living the traditional, “collegiate way of life” (Schroeder & Mable, 1994, p. 5). Residential students are largely traditionally aged (under the age of 25) with the exception of students living in graduate- or family-themed residential housing. Residential students tend to be enrolled as full-time students and are less likely to work during semesters (especially at off-campus employers). The majority of empirical studies addressing residential students focuses on how their living environment fosters social and academic integration, and provides access to specific resources on-campus.

Background

This section highlights the existing empirical studies that address the residential-to-commuter student comparison. Numerous studies suggest that residential students have considerable advantages over commuter students in terms of academic integration (e.g., interaction with faculty) and social integration (e.g., social systems and peer conversations, on-campus activities) (e.g., Chapman & Pascarella, 1983; Pascarella & Chapman, 1983; Tinto, 1975, 1993). Furthermore, several studies show that residential students are more satisfied with their overall college experience than their commuter peers (e.g., Astin 1975, 1977, 1993; Blimling, 1993; Chickering, 1974).

A substantial amount of early research suggests that residential students make significantly greater gains during college than commuter students on a range of outcomes. These outcomes include persistence through college and degree attainment; cultural and intellectual values; self-esteem; autonomy; independence, and internal locus of control; and use in principled reasoning in judging moral issues (e.g., Anderson, 1981; Astin, 1972, 1973, 1975, 1977, 1982, 1993; Baird, 1969; Chickering, 1974; Chickering &

Kuper, 1971; Chickering, McDowell, & Campagna, 1969; Herndon, 1984; Matteson, 1974; Pace, 1984; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1991; Tinto, 1975, 1993; Rest & Deemer, 1986; Rich & Jollicoeur, 1978; Scott, 1975; Sullivan & Sullivan, 1980; Welty, 1976). However, the majority of these studies were conducted at residential institutions. In addition, although several of these longitudinal studies did incorporate commuter institutions, they lacked clarity that specified residential-to-commuter institutional proportion (only mentioning that the studies incorporated institutions of “all types”). Speculation exists positing that many of these studies were heavily weighted toward students located at residential institutions (Dugan et al., 2008; Weissberg et al., 2003).

Although such a massive body of early research suggests considerable advantages for residential students, a substantial line of subsequent research suggests that there are no significant differences between these two student groups in regards to cognitive growth and other academic success outcomes (e.g., Bowman & Partin, 1993; Giles-Gee, 1989; Pascarella, Bohr, Nora, Zusman, & Inman, 1992; Pascarella, 1985a; Pascarella & Terenzini, 1991, 2005; Wolfe, 1993). These studies are further addressed more in depth in Chapter 2, which reviews the literature.

Theoretical Framework

Although modified and expanded since its introduction in the late 1960s, status attainment theory can generally be explained as a sociological concept that provides a basis for identifying the contributors to an individual’s current status in society. Blau and Duncan’s (1967) foundational model explains that status attainment is affected, both directly and indirectly, by ascribed status (contributors include parental status, income,

and education) and achieved status (contributors include education and prior occupation). Within higher education research, status attainment models have been used as a theoretical framework for examining student choice (e.g., Bateman & Spurill 1996; McDonough 1997; Stage & Hossler, 1989); college attendance (Hossler, Braxton, & Coppersmith, 1989), and persistence in college (Tinto, 1986, 1993).

This study uses status attainment as a theoretical framework for comparing and examining the student profile characteristics of traditional residential and commuter students at a public, research-intensive, urban commuter university. Status attainment provides a basis for identifying the contributors to students' current status at the university. According to Blau and Duncan's (1967) model, status attainment is achieved through ascribed (e.g., demographic) and achieved (e.g., prematriculation [precollege] and matriculation [college]) contributors. For example, the demographic characteristic "parental education level" is viewed as an ascribed contributor, especially considering these characteristics were incorporated verbatim in early status attainment models. Status attainment theory's connection to higher education literature and to this study are more thoroughly addressed in Chapter 2.

Student Profile Characteristics

Student profile characteristics provide a descriptive snapshot of the composition of a particular student population (CCSC Report, 1980). In short, student profile characteristics represent the students' background, what the students "look like," and what the students have attained. Braxton and Hirschy (2005) insist that institutional leaders and researchers should know the characteristics of the students enrolled at their college or university. Higher education student profile characteristics can range from a

student's age to a student's preference of meal plan in the dining commons. Student profile characteristics are often categorized into three areas: Demographic, prematriculation, and matriculation (e.g., CCSC Report, 1980; Chickering, 1974; Glynn, Sauer, & Miller, 2003; Hoover, 1991; Terenzini & Pascarella, 1978, 1980).

For this study, demographic characteristics refer to social statistics, such as age, gender, ethnicity, socioeconomic status, parental education level, and residency (in-/out-of-state). Prematriculation characteristics refer to the precollege scoring measures, such as high school grade point average (HSGPA) and precollege achievement test scores: ACT Composite and SAT Math/Verbal. Matriculation characteristics represent student statuses during college, such as cumulative grade point average (GPA), enrollment status (full- or part-time), cumulative grossed units (credits), academic (class) standing, retention, participation in athletics, and financial aid status (grants, scholarships, loans, and work study). These student profile characteristics were determined by 1) significance of these data supported by the literature, and 2) the availability of institutional data.

Purpose of the Study

Using status attainment theory, the purpose of this study is to examine and compare the student profile characteristics (demographic, prematriculation, and matriculation) between commuter and residential students at a public, research-intensive, urban commuter university. The residential-versus-commuter student has been frequently addressed since the 1970s, but the majority of these studies pertain to residential institutions or used a variety of institutions that were weighted more toward residential institutions (Dugan et al., 2008; Weissberg et al., 2003). Thus, there is a need to conduct a comparative study between the two student groups at an urban commuter institution.

Research Questions

This study uses three primary research questions. By design, the research questions are structured toward the particular student profile characteristic (demographic, prematriculation, and matriculation). The research questions uses the term “discriminate,” meaning to differentiate or separate because of the study’s focus on classifying the specific student characteristics into two specific student groups. Listed are the questions that guide this research:

1. What student demographic characteristics (specifically, age, gender, ethnicity, socioeconomic status, parental education level, and residency) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?
2. What student prematriculation characteristics (specifically, high school GPA, and standardized tests: ACT Composite and SAT Math/Verbal) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?
3. What student matriculation characteristics (specifically, cumulative GPA, enrollment status, cumulative grossed units, academic standing, retention, participation in athletics, and financial aid: Grants, scholarships, loans, and work study) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?

These three research questions guide the research design.

Research Design

By using secondary institutional data, this quantitative study examines and compares the student profile characteristics of traditional commuter and residential students at a public, research-intensive, urban commuter university. The two student groups are compared across demographic, prematriculation, and matriculation characteristics. Secondary data were drawn from four different institutional databases that originated from four separate on-campus departments. A standard direct discriminant function analysis (DISCRIM) is used for all three of the study’s research questions.

Discriminant function analysis is a statistical technique that allows the researcher to study the differences (or lack of differences) between two or more groups with respect to examining several variables simultaneously (Klecka, 1985). The purpose of a DISCRIM is to find a linear combination of variables that maximizes the differences between groups (Fisher, 1936). Therefore, DISCRIM is an appropriate procedure because of its statistical sophistication to classify large amounts of variables into distinguished group membership. For this study, the researcher examines the differences between the traditional residential and commuter students with respect to multiple demographic, prematriculation, and matriculation characteristics.

Data Source

The institution of study is a public, research-intensive, urban commuter university located in a large metropolis in the west. The Carnegie Foundation for the Advancement for Teaching classifies the institution of study as a “research intensive university” with “high undergraduate enrollment” (Carnegie Foundation Website, 2010). The institution offers more than 220 undergraduate, masters, and doctorate degrees (Institutional Website, 2009). Despite its relatively young age, being established in the 1950s, the institution has a large overall student enrollment. During the academic year used for this study, the institution recorded a headcount student enrollment of 27,988 students (Fall 2007) and a headcount undergraduate enrollment of 21,962. Despite the institution’s large student population, the on-campus residential facilities only accommodate approximately 2,000 students (Institutional Magazine, 2004; Institutional Website, 2008). Therefore, the overwhelming majority of the student population commutes to campus with less than 15% of the degree-seeking undergraduates living on-campus.

According to the institution's website, the undergraduate enrollment of the institution of study was 21,962 (78.5% of the overall headcount) for the Fall of 2007. Within this undergraduate enrollment, 15,677 (71.4%) were enrolled full-time and 6,285 (28.6%) were enrolled part-time. The majority (15,911 / 72.5%) of these undergraduate students were 24 year of age and under. The gender ratio within this population was 12,204 (55.6%) female to 9,758 (44.4%) male (Institutional Website, 2008). A more detailed representation of the institutional undergraduate enrollment are provided in Chapter 3.

The population for this study was residential and commuter traditional (under the age of 25) undergraduate students. The sample drawn was residential and commuter first-time freshmen enrolled in the 2007-08 academic year. The researcher used secondary institutional data to examine the sample.

Data Collection

All of the student profile characteristics (demographic, prematriculation, and matriculation) were obtained from four institutional databases. Data stewards located in the Office of Academic Assessment, Office of Housing and Residential Life, Office of Institutional Planning and Analysis, and the Financial Aid Office (which shared with the Admissions Office) provided the needed data. The majority of these data were obtained through the Office of Academic Assessment, which used an institutionally developed, multidimensional database referred to as the "student information system."

To obtain these data, the researcher's supervisor sent an official letter requesting the specific data and the researcher followed-up with emails, phone calls, and face-to-face meetings. After receiving clearance from the Institutional Review Board (IRB), the

stewards of these data transmitted the requested institutional data to a designated institutional administrator, who linked the databases by the student identification numbers and recoded these data for anonymity. After receiving these combined data, the researcher transferred it into Predictive Analytical Software (PASW) Version 17 (2009), a computer software program used for statistical analysis.

Limitations

There are several limitations to the study. The student profile characteristics used for this research are limited to the characteristics available in the institutional databases. For instance, the researcher sought to obtain data pertaining to participation in student clubs and organizations because student involvement is a significant characteristic of student success identified in the literature, but the institution did not possess relevant data. However, the institution did possess results from two student surveys (which are presented in Chapter 3) that incorporated aspects of student involvement. In addition, the institution did possess data regarding work study, but did not possess data regarding student employment outside of work study. Furthermore, the categorization of residential students was based on the listing of students who lived in the institutionally owned and operated on-campus residential halls during the Fall (2007) and Spring (2008) semesters. Therefore, there may have been students that changed living location (from on-campus to off-campus, or vice versa) during the 2007-2008 academic year. Other limitations relate to the categorical grouping during the final stages of data consolidation. Delimitation for the study was that it only included traditionally aged, first-time freshmen at a single institution.

Significance of the Study

Despite the significant growth of public, urban commuter campuses, higher education literature has yet to paint a clear picture of the students at these institutions. Urban commuter institutional researchers and practitioners must typically draw on research, theory, and practice from an amalgam of other types of institutions because the research on urban commuter campuses is relatively underdeveloped (ASHE-ERIC, 2004). Thus, the primary purpose of this study is to provide empirical research geared toward gaining a better understanding of traditional students, both residential and commuter, at a public urban commuter university. This understanding is strengthened by comparing the two student groups, as displayed by the foundational research (e.g., Chickering, 1974).

Before addressing issues relating to student success or other student measures, it is essential for researchers to possess a deep understanding of the student profile characteristics at their institution (Braxton & Hirschy, 2005). Hoover (1991) explains, "...collecting demographic variables (e.g., race, age, and gender) will strengthen many research designs. Demographic variables allow the investigator to examine different patterns among subgroups and perform stratified analysis of data" (p. 77). In addition, Tharp (1998) explains that data contained in student enrollment records, which are largely demographic and prematriculation characteristics, are "often underutilized as a tool in dropout intervention" (p. 279). These demographic and prematriculation characteristics need to be linked to the matriculation characteristics, which display the student's current status. Therefore, these student profile characteristics will address the

“what” question, thus laying the foundation for linear steps toward addressing any identified student issues.

Definition of Terms

This section provides definitions of key terms that serve as the operational function the research process. The following definitions are used for this study:

- *Traditional students:* Although definitions of greatly vary, this study defines traditional students as non-returning students under the age of 25 enrolled in undergraduate classes (Stewart & Rue, 1983).
- *Residential students:* Students living in university owned or operated residential housing located on-campus (Jacoby & Girrell, 1981; Jacoby, 1989).
- *Commuter students:* All students who do not live in institutionally owned or operated housing on-campus (Jacoby & Girrell, 1981; Jacoby, 1989). This definition of commuter students has been adopted by the National Clearinghouse for Commuter Programs (NCCP) and the Council for the Advancement of Standards in Higher Education (CAS).
- *Commuter institution:* This term broadly refers to a college campus with an enrollment that is primarily comprised of students who live off-campus (Jacoby & Girrell, 1981). More specifically, fewer than 25% of degree-seeking undergraduates live on-campus at commuter institutions (Carnegie Classification, 2010).
- *Urban Commuter Campus:* This term refers to a commuter institution that is located inside a city (Tinto, 1993).

- *Student profile characteristics*: A descriptive snapshot of the composition of a particular student population (CCSC Report, 1980). The student profile characteristics used for this study were categorized as demographic, prematriculation, and matriculation variables (e.g., CCSC Report, 1980; Hoover, 1991; Terenzini & Pascarella, 1978, 1980).
- *Demographic characteristics*: Characteristics addressing social statistics, such as age, gender, race/ethnicity, socioeconomic status, parental education level, and residency (e.g., Chickering, 1974; Hoover, 1991).
- *Prematriculation characteristics*: Characteristics referring to the precollege scoring measures, such as high school grade point average (HSGPA) and precollege achievement test scores (ACT Composite and SAT Math/Verbal) (Glynn, Sauer, & Miller, 2003)
- *Matriculation characteristics*: Characteristics representing student statuses during college, such as grade point average (GPA), enrollment status (full- or part-time), cumulative grossed units/credits, retention, academic (class) standing, and financial aid status (e.g., CCSC Report, 1980; Glynn, Sauer, & Miller, 2003, Terenzini & Pascarella, 1978, 1980).

Furthermore, Chapter 3 provides a more detailed explanation of how these definitions were utilized for this study.

Summary

Although the residential-versus-commuter student comparison has been contemporaneous in higher education research since Chickering's longitudinal study in 1974, there is still a need to examine this comparison at a public, research-intensive,

urban commuter university. This study accordingly examines and compares these two student groups using multiple student profile characteristics, which are categorized as demographic, prematriculation, and matriculation characteristics. These categories connect directly with the theoretical framework – status attainment theory. By using secondary institutional data, the researcher employed discriminant function analysis to examine how the student profile characteristics were classified (or discriminated) among the two groups, traditional residential and commuter students. As this chapter offers a brief overview of the literature, theoretical framework, method, and data source, the following chapter provides an in-depth analysis and presentation of the existing literature relevant to the study.

CHAPTER 2

LITERATURE REVIEW

The purpose of this chapter is to provide a review of the literature relevant to this comparative study, placing an emphasis on literature addressing students at urban commuter institutions. This chapter begins with the historical underpinnings of the literature, addressing institutional types, the nature of urban commuter institutions, commuter students, residential students, and the dynamics of residential housing. The chapter then transitions into empirical work, starting with seminal longitudinal studies and ending with studies specific to student profile characteristics.

The commuter-versus-residential student comparison has been addressed since the 1970s. However, the majority of these empirical comparisons have been conducted at residential institutions or used a variety of institutions that were weighted more toward residential institutions (Dugan et al., 2008; Weissberg et al., 2003). Therefore, there is a need for further research on students attending commuter campuses. According to Jacoby (1989), there is an ever-present call to increase the understanding of the complex and diverse nature of commuter students. In addition, to adequately address imperative student issues (e.g., student attrition), institutional employees must possess a comprehensive understanding of the student profile characteristics of their ever-changing student population (Braxton & Hirschy, 2005). For these reasons, this study compares and examines student profile characteristics of traditional (specifically, ages 17-24 enrolled in undergraduate classes) residential and commuter students at a public, research-intensive, urban commuter university.

Public Urban Commuter Institutions

Institutional Types

The original American colonial colleges of the 17th century emerged from England's Oxford and Cambridge institutional model (Schroeder & Mable, 1994). Since these early homogenous colleges, American higher education institutions have greatly evolved and continue to evolve. Berger and Lyon (2005) explain, "The number and types of campuses that comprise a loosely coupled system of higher education in America has changed over time as well, resulting in a diversified contemporary collection of campuses that is composed of more than 3,600 institutions" (p. 3). Today's American higher education institutions are indeed complicated systems possessing diverse characteristics with significant implications. An excellent tool for understanding and examining current higher education models is using a consistent institutional taxonomy. Astin (1993) explains that postsecondary institutions have traditionally been classified along the two dimensions of type and control. The level of highest degree offered is used to determine the type (two-year or four-year, college or university) and the control usually refers to the primary source of control or governance (public, private religious, or private nonsectarian) (Astin, 1993). Since being established in 1970, The Carnegie Classification of Institutions of Higher Education has been the most recognized framework for classifying or grouping higher education institutions in the United States. Researchers in higher education have used this framework "both as a way to represent and control for institutional differences, and also in the design of research studies to ensure adequate representation of sampled institutions, students, or faculty" (Carnegie Foundation Website, 2010).

Over the past three decades, the Carnegie Foundation has greatly expanded the layers of classifications beyond “type and control” to provided new lenses of viewing and understanding institutions. In addition, more layers of classifications provide researchers more options to refine their research. In 2005, the Carnegie Foundation replaced the single classification system with a set of multiple, parallel classifications. These classifications, including categories, are based on three fundamental questions: “What is taught (Undergraduate and Graduate Instructional Program classifications), who are the students (Enrollment Profile and Undergraduate Profile), and what is the setting (Size & Setting)” (Carnegie Foundation Website, 2010). These six categories, along with the original two categories (“type” or “level,” and “control”), constitute multiple institutional profiles. These basic Carnegie classification characteristics are utilized throughout this review to specify the institution(s) used in this research study.

Number of commuter institutions. The Carnegie classification recognizes 4,633 four-year higher education institutions (both for-profit and not-for-profit). Out of the 4,633 institutions, 788 (17%) institutions are four-year primarily non-residential (commuter) universities. The four-year commuter institutions (788) categorized by size are as follows: Large, four-year (135), Medium, four-year (175), Small, four-year (200), and Very Small, four-year (273) (Carnegie Foundation Website, 2010). The institutional size is one of many commuter institutional characteristics.

Characteristics of Commuter Institutions

Today’s urban commuter campuses are more diverse and complex than ever before. While some commuter institutions do not provide any housing facilities, many four-year institutions include residential components (Roe Clark, 2006). In general, a

commuter campus refers to an institution with an enrollment primarily comprised of nonresidential students (Jacoby & Girrell, 1981). This common definition does not commit to a specific percentage of the residential/commuter population ratio. The Carnegie foundation sets slightly different percentages depending on the institutional characteristics. For large four-year institutions, nonresidential (or commuter) campuses have less than 25 % of “degree-seeking undergraduates live on campus (includes exclusively distance education institutions)” (Carnegie Foundation Website, 2010).

Public commuter institutions provide relatively lower tuition and other student costs compared to characteristically comparable private institutions (Astin, 1977, 1993b). In addition, public commuter institutions also tend to be more accessible for minority students and therefore have a more diverse student body than their peer private institutions (Jacoby, 2000). Urban commuter campuses are often landlocked in a city that was not essentially built around the institution, unlike many campus locations in “college towns.” In addition, some commuter campuses sprawl across hundreds of acres of land in or near suburban areas (Roe Clark, 2006).

Due to their limited or non-existent residential population, commuter campuses possess a different social environment for their students. ASHE-ERIC Higher Education Report (2004) explains, “In contrast to residential institutions, commuter colleges and universities lack well-defined and structured social communities for students to establish membership” (p. 35). Commuter students tend to spend very limited time on campus at urban commuter institutions. Their time is typically contributed towards attending class and pertains to other issues needed to meet degree attainment (Tinto, 1975). ASHE-ERIC (2004) concludes, “Thus, the hurried nature of their [students] campus [urban, commuter]

experiences reflects well-worn paths between the parking lot and the classrooms” (p. 45). Less time spent on-campus typically translates into less of a connection with the campus.

Commuter Students

Although multiple definitions of commuter students exist, the National Clearinghouse for Commuter Programs (NCCP) and the Council for the Advancement of Standards in Higher Education (CAS) provide the most commonly used and most practical definition of a commuter student: Any student not living in institutionally owned or operated housing on-campus (Jacoby & Girrell, 1981; Jacoby, 1989). This broad definition encompasses a heterogeneous population that is much more diverse than a typical residential population. Unlike residential students, commuter students can be found at practically every institutional type in higher education; they “may represent a small percentage of students at a private, residential liberal arts college or the entire population of a community college or urban institution” (Jacoby, 2000, p. 5). Commuter students overwhelmingly make up the majority of college students today, representing more than 85% of student population in the United States across all institutional types. Commuter student enrollment has since increased and current trends suggest that the commuter student proportions will continue to grow and become more diverse (Horn & Nevill, 2006; Jacoby & Garland, 2004).

Commuter Student Characteristics

Although diversity measures for commuter students are far from limited, perhaps the most recognized areas are age, ethnicity, enrollment status (part- or full-time), living arrangement, and non-academic obligations (e.g., family commitments, employment). Across all institutional types, commuter students tend to have a broader age-range than

students who live in residential halls (Chickering, 1974; Jacoby, 2000). When examining enrollment data including all institutional types, more than 44% of all undergraduates are 24 years old or older (National Center for Education Statistics, 2002) and almost all of these nontraditional aged students are commuters (Jacoby & Garland, 2004). Unlike residential students who almost exclusively enroll full-time, commuter students are both full-time and part-time students. Although enrollment varies among institution types, part-time students – who are practically all commuters – comprise approximately 40% of the nation’s undergraduate enrollment (Jacoby, 2000).

Commuter students tend to be more ethnically diverse, as they represent a significantly higher portion of minorities in higher education than residential students (Jacoby, 2000). Current trends suggest that commuter students, as well as the U.S. student population at large, will continue to “become more diverse as the numbers of part-time, adult, and minority students continue gaining access to higher education” (Jacoby, 2000, p. 5). Pascarella and Terenzini (2005) noted that student-based research conducted in the 1990s has (or should have) shifted its strong bias “toward ‘traditional’ White undergraduates, ages 18 to 22, who attended four-year institutions full-time, lived on-campus, did not work, and had few, if any, family responsibilities” (p. 2) to represent the growing diversity of the national student body.

Understanding the Subgroups of Commuter Students

Although commuters are extremely diverse, little is known about the differences that exist within their population, as the majority of existing literature treats commuter students as a homogenous population (Baum, 2005; Jacoby, & Garland, 2004; Dugan et al., 2008; Kodama, 2002; Roe Clark, 2006). Andreas and Kubik (1980) explain, “Rather

than envisioning one group, 'the student body,' it is much more nearly accurate to think of commuting students as a large, independent body of individuals, each one with a set of expectations and needs" (p. 3). Since commuter students are so diverse, an effective tool for understanding and researching commuter students is to recognize the subgroups within the population. Stewart and Rue (1983) identify three characteristics as being most significant characteristics when distinguishing subgroups of the commuter population. All three of these characteristics possess noteworthy implications that extend beyond the characteristic itself: dependent/independent, traditional/nontraditional, and part/full-time.

The first characteristic is that of student dependence versus independence, which addresses where the commuter student lives and with whom he/she lives. A dependent student lives at home with parents or other parental surrogates. An independent student lives away from his/her parental figures at an apartment, house, or other quarters by themselves or with roommates. The next demographic characteristic is whether the student is traditionally aged (under the age of 25) or is nontraditionally aged (25 or older) (Stewart & Rue, 1983). The final variable is whether the students are part- or full-time. The interactions of these three important characteristics present eight distinct types of undergraduate students. These eight types are provided below with descriptors of commuter students that may align categories (Stewart & Rue, 1983, pp. 5-6):

- (1) Dependent, traditional full-time: A new freshman who lives at home because of financial constraints, or because on-campus housing is limited
- (2) Dependent, nontraditional full-time: A recently divorced woman with children who has returned to her parents' home while in school
- (3) Dependent, nontraditional part-time: A veteran who lives at home and works

(4) Dependent, traditional part-time: A 19-year old who lives at home and works

(5) Independent, traditional, full-time: An international student who attends school full-time supported by her government

(6) Independent, nontraditional, full-time: An older student who has returned to school on a full-time basis after work

(7) Independent, nontraditional part-time: An adult student with a full-time job and family, who is taking one course a semester for personal development

(8) Independent, traditional, part-time: A student living in her own apartment, who works to support herself and goes to school part-time

These descriptors illustrate Steward and Rue's (1983) taxonomy to better understand the commuter student population. In addition, residential students almost always represent the (5) independent, traditional, and full-time category (Stewart & Rue). Additional areas that could be included in Steward and Rue's taxonomy are race/ethnicity, gender, commuting distance, job level, type of employment (Jacoby, 1989; Wilmes & Quade, 1986), and other profile descriptors. In addition, literature that is more recent refers to traditional students as students falling between the ages of 17 to 24 *and* are enrolled in undergraduate classes. Therefore, students under the age of twenty-five enrolled in graduate classes are considered nontraditional.

Commuter Students and Multiple Identities and Roles

Compared to residential students, commuter students tend to possess more identities and non-academic roles. Commuter students are more likely to hold a job while attending college than residential students (e.g., Chickering, 1974; Harrington, 1972; Pascarella & Terenzini, 1991, 2005; Schuchman, 1974). Jacoby and Garland (2004) found that commuter students are “more likely to work, to work more hours, and to work

off campus than residential students” (p. 63). Keeling (1999) describes commuter students as “reinvented students,” recognizing that being “a student is only one identity for people who are employees, wage workers, opinion leaders or followers, artists, friends, children...parents, partners, or spouses” (p. 4). In fact, many commuter students more closely identify with these (non-student) life roles than being a college student (Keeling, 1999). Furthermore, early literature does recognize that commuter students have interests that compete with their studies, thus creating a “divided lifestyle” (e.g., Chickering, 1974; Hardwick & Kazlo, 1973; Harrington, 1972; Schuchman, 1974; Stewart & Rue, 1983; Ward & Kurz, 1969). Such a “divided lifestyle” with “multiple identities” often translates into a hectic lifestyle with little spare time.

Commuter Student Stigmas

Today’s commuter students are often haunted by unfortunate generalizations, myths, misperceptions, and stereotypes. The most common stigmas are that commuter students are less committed to their education, have fewer educational goals, and are apathetic or simply disinterested in campus life (Jacoby, 2000; Jacoby & Garland, 2004). These stigmas stem from outdated perspectives and the dominant residential history and tradition deeply engrained in American higher education institutions (Jacoby & Garland, 2004). Originally, traditional aged students who lived with their parental surrogates were admitted under a different set of standards with provisional or conditional status and were not considered full members of the campus community (Jacoby, 2000; Stewart & Rue, 1983). These commuter students were referred to as “townies” or simply “day students” (Stewart & Rue, 1983). Many current faculty, administrators, and staff were residential students during their undergraduate experiences. Stewart (1983) explains that these

institutional leaders often perpetuate this residential image “long after a shift to a predominantly commuter student population has taken place” (p. 1). In addition, the convenience of studying residential students and the presence of inaccurate assumptions that most students live on-campus have led commuter students to be called the overlooked or neglected majority (e.g., Baum, 2005; Dugan et al., 2008; EFL, 1977; Jacoby, 1989; Slade & Jarmul, 1975).

Furthermore, many higher education administrators and staff may fail to realize the diverse living arrangements of commuter students. Some professionals tend to view commuters as students living at home who are closely monitored by their parents or married adults working a full-time job and raising children (Jacoby, 2000; Stewart & Rue, 1983). Commuter students who break the mold of these two stereotypes, such as single traditional aged students living in apartments with roommates, could possibly be overlooked. There are, without a doubt, commuter students who embody the two traditional views of commuter students. Yet, the critical point is that higher education researchers and practitioners should not *assume* that these stereotypes represent all or the majority of the commuter population (Jacoby, 2000).

The most obvious constant for commuters is that they commute to campus, regardless of the type of institution they attend or their particular living location. For this reason, commuters often view campus as a place to visit, sometimes for a very short period of time (Jacoby, 2000; Likins, 1986). One of commuter students’ most common concerns affecting their academic progress relates to their transportation to-and-from campus, as they often face poor weather conditions, congested traffic, high fuel costs, continual vehicle maintenance repair, difficulty finding transportation, and so forth

(Jacoby, 2000; Wilmes & Quade, 1986). In addition, commuting consumes time, which is a scarce resource for many commuter students (Jacoby, 2000). The further a student lives from campus, the more likely the student is to face an increase in commuting challenges. Consequently, the diverse living arrangements and transportation dynamics of commuter students create concerns that are uncommon to students living in residential halls.

Residential Students

Literature most often defines residential students based on their living environment, in contrast to commuter students, who are more often defined by characteristics and demographics. Living and learning environments have been incorporated into American higher education since its inception (Schroeder & Mable, 1994), as faculty members “sought to develop the total person, not merely the mind” (Upcraft, 1982, p. 1). Dormitories were known as the “collegiate way of life,” designed to bring faculty and students together for scholastic and moral mentoring (Brubacher & Rudy, 1968; Schroeder & Mable, 1994, p.5). During the late nineteenth century, residential patterns adopted the concept of *in loco parentis*, a strict disciplinary philosophy revolving around the institution having greater (or ‘parental’) control over its students (Cohen, 1998). This control was enforced by the faculty, and sometimes by proactive presidents, until the mid-twentieth century when faculty interests and values changed. During this time, faculty stopped overseeing the aspects of student life and student affairs positions began to emerge (Schroeder & Mable, 1994).

In the late 1960s, higher education institutions and their residential operations would eventually abandon the notion of *in loco parentis* as student activism demanded more freedom on-campus (Schroeder & Mable, 1994). Students were now seen as “legal

adults” who were responsible for their actions and the institution no longer focused on student control (Schroeder & Mable, 1994). During this time, a “student development” perspective emerged, which was articulated by the Tomorrow’s Higher Education (THE) Project in 1968. This report provided outlines for student learning environments that sought to maximize the integration of cognitive development and self-discovery (specifically, the process of learning about oneself) by placing an emphasis on the out-of-class experiences (American College Personnel Association, 1975; Schroeder & Mable, 1994). The notion of incorporating non-intellective dimensions of human development, which is often referred to as educating the “whole student,” has been prominent in residential hall literature over the past four decades (e.g., Brown, 1972; Chickering, 1969; Committee on the Student in Higher Education, 1968; Coons, 1971; Feldman & Newcomb, 1969; Long & Long, 1970; Pascarella, Terenzini & Blimling, 1994; Schroeder & Mable, 1994; Upcraft, 1982). An example of this concept’s prominence in higher education today is that the leading organization in student affairs, National Association of Student Personnel Administrators (NASPA), lists one of its top practices as fostering “commitment of student affairs to educating the whole student and integrating student life and learning” (NAPSA Website, 2010, p.x).

Great debate, and at times friction, has existed between the notion of academic and student affairs collaborating to develop the “whole student.” Terenzini and Pascarella (1994) explain, “the academic and student affairs functions of most institutions have been running essentially on parallel but separate tracks; academic affairs tends to students’ cognitive development while student affairs tends to their affective growth” (p. 32). Although today’s residence hall objectives vary among institutions, the common

sentiment is that their objectives should “flow naturally” from the institution’s mission and vision (Schroeder & Mable, 1994, p. 14). Schroeder and Mable provide a list of objective elements typical of a modern residential hall program committed to student learning. These elements focus on the following:

1. Promoting growth and development of students as whole persons with coherent views of knowledge, life, integrity, and intellectual and social perspectives
2. Constructing a residence hall curriculum that teaches students responsibility, altruism, aspiration, persistence, empathy, ethics, and leadership – along with the fluency in answering the questions, “Who am I?” and “What will I be?”
3. Emphasizing skills that challenge a student’s ability to use knowledge in work and leisure: critical thinking and interpersonal skills, as well as technical skills; teamwork abilities; flexibility; and creative, cognitive, and caring attitudes
4. Creating environments that celebrate diversity by bringing students together in a community where differences are respected, but where there is a common goal to promote learning. (Schroeder & Mable, 1994, p. 14)

These objectives are targeted toward traditional aged students, which greatly represent the residential hall population. Some campuses offer residential halls and/or programs for graduate students and their objectives tend to focus more on academic and intellectual skills rather than areas pertaining to self-discovery.

Some institutions address these objectives by implementing living-learning communities (LLCs) in the residential halls. Although LLCs vary across institutions, the main purpose is to present students with a more academically and culturally rich setting resulting in a more educational environment than the average residential hall floor (Pascarella & Terenzini, 2005). In *Student Success in College: Creating Conditions that Matter* (2005), Kuh, Kinzie, Schuh, Whitt, and Associates note the success of the LLCs at Miami University, where every residential hall is a living-learning community. These

LLCs are themed (e.g., “Celebrate the Arts” and “Leadership, Excellence, and Community”) and are linked to learning courses that increase peer and faculty involvement for the students.

Positive Aspects of Living On-Campus

This section provides a brief overview of the advantages of on-campus living, as several foundational studies address this topic. Numerous studies suggest that residential students have considerable advantages over commuter students pertaining to student success and development in college (e.g., Astin, 1975, 1977, 1993; Chickering, 1974; Pascarella & Terenzini, 1991; Tinto, 1993). Many of these studies incorporate commuter institutions, but do not specify the residential/commuter institution proportion (only mentioning that the studies incorporated institutions of “all types”). Speculation exists that these studies were heavily weighted toward residential institutions (Dugan et al., 2008; Weissberg et al., 2003). The main advantages to living on-campus revolve around the more attainable opportunities for academic integration (e.g., interaction with faculty) and social integration (e.g., social systems and peer conversations, on-campus activities) (e.g., Chapman & Pascarella, 1983; Pascarella & Chapman, 1983; Tinto, 1975). Other studies (Pascarella & Terenzini, 1991; Tinto, 1993) suggest that, controlling for other predictors, students living in residential halls have considerably higher persistence and graduation rates than students who lack the overall residential experience. Furthermore, several studies show that residential students are more satisfied with their overall college experience than their commuter peers (e.g., Astin 1975, 1977, 1993; Blimling, 1993; Chickering, 1974). Many residential halls include living-learning communities (LLCs), and several studies suggest that LLCs positively contribute to students’ social integration

and academic success, especially for underrepresented ethnic students (e.g., Edwards & McKelfresh, 2002; Hummel, 1997; Kuh et al., 2005; Pike, 1999).

Residential halls also provide students with an environment with potential to encourage openness to diversity because of their extensive opportunities to interact with diverse students and staff, as well as the opportunities to be exposed to multicultural issues through structure programs (Hughes, 1994). Although the strengths of the effects of the residential experience widely vary (Pascarella et al., 1994), studies suggest that students who live on-campus are more likely to develop openness to diversity and increase their tolerance than their commuter peers (e.g., Astin, 1977, 1993b; Blimling, 1993; Chickering, 1975; Pascarella & Terenzini, 1991; Pascarella, Terenzini & Blimling, 1994).

Countless characteristics separate commuter and residential students. For residential students, college and home are synonymous; but for commuter students, college and home are separate and dissimilar environments. As the previous sections provide descriptors of commuter and residential students and their living environments, the following section addresses seminal empirical research that compares these two student groups.

Seminal Studies Comparing Residential and Commuter Students

As Sir Isaac Newton paraphrased an ancient Latin metaphor, “If I have seen further it is only by standing on the shoulders of giants” (transcribed by Maury & Paris, 1992), this section explores the seminal works of the authors whose shoulders we stand upon. For decades, this research has served as a foundation for subsequent contributing researchers. Although there are many relevant foundational works, this section addresses

the research that primarily addresses the residential and commuter student comparison regarding areas of academic success and their common profile characteristics.

Many higher education researchers credit Arthur Chickering's (1974) work, *Commuting versus Resident Students*, for bringing the residential/commuter student comparison into the national spotlight (Matson, 1975; Pascarella, 1984; Upcraft, 1982). Chickering's classic work used data collected from first-time enrolled, full-time freshmen from 270 public and private, two- and four-year institutions. Chickering conducted two major analyses: "A [stepwise] multiple regression analysis, which examined the attitudes and behaviors of 5,351 students selected randomly from 38,000 students who responded to a follow-up questionnaire at the end of their freshman year; and reanalysis of responses to a survey, of the next freshman class, which was completed by 169,190 freshmen" (1974, p. 45). In general, Chickering found significant differences between residential and commuter students pertaining to 1) college-entry characteristics, 2) the overall student experience, and 3) educational consequences. Chickering was so comfortable with his findings, which imply considerable advantages for students living on campus, he portrays the perspective that "the residents are the haves and the commuters, the have nots [sic]" (Chickering, 1974, p. 49).

The college-entry characteristics data, derived from the aggregated sample of 169,190 entering freshmen, suggests significant differences between residential and commuter students. Chickering (1974) found that the parental background characteristics were significantly lower for commuter students in terms of income and educational background (e.g., highest degree earned). For precollege student characteristics, the study indicated that residential students had higher GPAs than commuter students, as half as

many commuters (9% compared to 18% of residential students) graduated with an average of A+, A, or A-. More residential students ranked in the top 10% of their class and had fewer in the bottom-half ranking. In addition, more than twice as many residential students won National Merit Scholarships than commuter students (Chickering, 1974). Chickering also found that more commuter students (61%) applied only to the college they were attending than residential students (38%); accordingly, more residential students frequently applied to two or more other colleges (41% versus 20%). The study further indicated profound differences between the precollege extracurricular activities (e.g., student clubs and organizations, athletics, honors society), as residential students had substantially higher marks on twelve of the thirteen survey items (Chickering, 1974).

When controlling for institutional type and examining public four-year institutions, however, Chickering reported findings that differed from those using the aggregate sample. Chickering (1974) reported,

In these institutions parents' educational background, occupation, and income are similar for residents and commuters. But, contrary to the usual pattern, commuters have...higher grade point averages in high school and more of the academic honors and recognition that accompany superior academic performance. Residents report more extracurricular achievements than commuters do. However, the degree plans and long-run objectives...are similar. (pp. 50-51)

Chickering notes that these findings are significant because of the large amount of students public four-year institutions serve.

Unlike the college-entry characteristics, Chickering found the same difference between residential and commuter students pertaining to the student college experience across all nine institution types. Under the *college experience* label, Chickering (1974)

addressed the differences in “experiences, activities, and future plans” of residential and commuter students (p. 54). Chickering used a random sample of 5,351 students selected from the 26,806 students who completed both the initial survey and the end of their freshmen year, follow-up survey. The students from the sample were distributed among living locations: Seventy-eight percent lived in the residential halls, 22.4% lived at home with their parents, and only 3.7% lived in another off-campus location (e.g., house, apartment, or room). These data suggest that residential students are more likely to be involved in Greek-letter organizations, participate in intramural athletics, engage in various non-campus oriented social activities (e.g., demonstrations, parties, pastimes), and are more likely to be a guest at a faculty member’s home. In addition, the study suggests that residential students are more frequently financially supported by their parents and repayable loans, while commuters were more likely to finance their education from personal savings or employment earnings (Chickering, 1974).

Chickering (1974) followed up with a study encompassing the total 26,806 students, who filled out a pre- and post-questionnaire containing about 150 items. The survey categorized the scoring of students by those living at home, in private off-campus housing, and in the residential halls. Chickering found that students living in private off-campus housing are much more similar to students living with their parents than students living in the dormitories (Chickering, 1974). Furthermore, students who lived at home scored lower than residential students in almost every extracurricular activity. The findings also suggest that commuter students living at home have the least interaction with faculty members, receive the least tutoring, study the least with other students, and least frequently discuss politics or religion.

For the third segment – the *educational consequences*, Chickering examines the individual change during their first year, using the pre- and post-questionnaire that received 26,806 respondents, and four-year educational outcomes, using data from an American Council on Education (ACE) longitudinal survey. Data from Chickering’s pre/post survey indicated that commuters, both living at home and at private off-campus facilities, less frequently planned to return to college or attend college the next year full-time. In addition, these data showed that students living with their parents were overall less satisfied with their college experience. Furthermore, both commuter groups had less faculty interaction in and out of the classroom and less activities with other students than residential students (Chickering, 1974).

Chickering (1974) found disadvantaged attributes of the commuter students who specifically lived at home during their first year in college. Chickering reported that compared to the residential students, commuter students who lived with their parents marked themselves lower “on a variety of abilities and desirable personal characteristics” and were “less committed to a diverse array of long range goals” (p. 68). Although Chickering paints a dreary picture for this student group, he found that commuters that lived off-campus presented more of a “mixed picture” (p. 69). Nonetheless, all commuter students reported lower overall satisfaction than residential students did.

When examining the four-year patterns from the ACE survey, Chickering concluded that the educational outcomes were similar to the patterns he found in his studies. Chickering found that commuter students, particularly the students who lived at home through the majority of their four years in college, scored the worst on the vast majority of the categories. Chickering (1974) concluded, “Perhaps the most striking

about these diverse studies is the consistency of the results. Whatever the institution, whatever the group, whatever the data, whatever the methods of analyses, the findings are the same” (p. 84). Chickering further explains, “Commuters and residents begin their college careers with an unequal start which strongly favors the residents. The gap between them grows” (1974, p. 85). Chickering summarizes the residential students’ advantages as having more access to diverse people and experiences and more resources for discovery.

Chickering’s piece was groundbreaking as he “opened the door on an aspect of postsecondary education which has been too long neglected in the literature of postsecondary education” (Matson, 1975, p. 735). However, it is important to understand the notable limitations of the study and recognize the historical circumstances during its inception. The reader must first understand that the national commuter population in the early 1970s was extremely small compared to today’s standards. Although it would have proven useful, Chickering opted not to provide the reader data that displayed national residential and commuter enrollments. Although Chickering categorizes the diverse sampled institutions into nine types, he unfortunately did not specify which institutions possessed predominantly residential or commuter enrollments, although these are inherent characteristics for some campuses (e.g., community colleges). In addition, Dugan et al.(2008) subtly claim that Chickering’s study was conducted at “primarily residential institutions” (p. 285).

A chief motive for Chickering to write the book, as suggested by Alexander Astin’s Forward, was to make a case for the importance of residential housing. During the early 1970s, the federal government and many state governments were decreasing

funding for residential campuses (Chickering, 1974, p. ix). Throughout the book, Chickering consistently reaffirmed his simplified argument – which was supported by his studies – that students commuting to campus are “handicapped” compared to their peers living in the residential halls. However, Chickering did not address the complexity of commuter students and the reasons why they do not live on-campus. For many students, commuting is the only option for obtaining a postsecondary degree, whether due to family, employment, or various financial obligations. Although Chickering did suggest increasing institutional services for commuters, he fails to recognize that many commuter problems could be contributed to the traditional American higher education model, which was essentially built around a residential student population (Jacoby & Garland, 2004).

Astin’s Foundational Research

Chickering’s (1974) groundbreaking piece was followed by Alexander Astin’s (1975) *Preventing Students from Dropping Out*, which addresses college impact. The primary research question for this study was “How does college affect students?” Astin’s findings suggest that college has a dissimilar impact on students living on-campus and those living off-campus. In line with Chickering (1974), Astin (1975) presents a picture of commuter students being disadvantaged, “the benefits of dormitory residents are clear... [students] chances of finishing college are improved if they leave home and live in a college dormitory” (p. 92). Astin analyzed data from Cooperative Institutional Research Program (CIRP), which were collected annually from 1968 to 1972 with over 240,000 students from a “representative national sample” of 358 two- and four-year institutions (p. 3). Astin also used follow-up surveys after the students’ fourth year in

college. Astin collected and examined information pertaining to student characteristics, predictions, and outcomes.

Perhaps Astin's (1975) most significant finding pertaining to the comparison of residential and commuter students is as follows: "Although the magnitude of this impact varies somewhat from one type of institution to another, living in a dormitory instead of most alternative residences as a freshman appears to decrease the student's dropout chances by approximately 10 percent" (p. 91). For public four-year institutions, Astin found that males have a 10% decreased chance of dropping out and females have a 6% decreased chance of dropping out when living in the residential halls compared to living at home their freshman year. Compared to living in a private off-campus location, living in residential halls can decrease male's chances of dropping out by 5% and female's chances of dropping out by 11% at public four-year institutions. Astin concluded, through several demonstrations, that students of both sexes who lived on-campus had increased persistence rates.

In addition, Astin examined the benefits based on institutional type, primarily to see if the residential hall living experience was compromised by whether the institution required freshmen to live on-campus or not. Astin (1975) sorted the four-year institutions into three groups: Institutions with less than 10% of freshmen were residential (commuter institution), institutions from a 10% to 90% range of freshmen were residential, and institutions that more than 90% of the freshmen were residential. Astin found that the expected and actual dropout rates for males and females were comparable across the three types of institutions. Thus, he concluded that the impact of campus residence is uniform across four-year institutional type.

Astin's next book, *Four Critical Years* (1977), would become the single most frequently cited work in higher education literature (Budd, 1990). In this follow-up study addressing college impact, Astin utilized data from CIRP involving over 225,000 students from 1961 to 1974 at over 300 higher education institutions of all types. Astin also used several follow-up surveys to different entering classes. Astin (1977) places more emphasis on the use of longitudinal data and covered a wider range of cognitive outcomes. Astin's study mirrored his 1975 study, by concluding, "By far the most important environmental characteristic associated with the college persistence is living in the dormitory during the freshmen year" (p. 109). After controlling for entering characteristics and other environmental measures, living in the residential halls adds about 12% to students' chances of completing their degree (Astin, 1977).

The lists of benefits for living on-campus continue in Astin (1977), while reporting no significant benefits for commuting to campus. Astin summarizes, "Perhaps the most significant impacts of living on campus versus commuting are on achievement and career development" (1975, p. 220). Astin's findings suggest that residential students are more likely to achieve in extracurricular areas, more likely to aspire to pursue a graduate or professional degree, and more likely to implement career plans in business. He found that men living in residential halls were more likely to earn higher grades. Astin (1977) also found that residential students were more likely to interact with faculty, and more likely to become involved in student government, Greek letter organizations, athletics, and various leadership opportunities. Moreover, residential students expressed much more satisfaction than commuter students did pertaining to their overall undergraduate experience (Astin, 1977).

In a brief indirect recommendation, Astin (1977) challenges commuter institutions to use “ingenuity and resourcefulness” because he believes they possibly could “devise ways to *simulate* the residential experience so students would spend more time on campus and interact more with faculty and fellow students” (p. 133). Astin proceeded to cite his findings of the strong association between involvement and persistence, which suggests that more involvement for commuter students might have a positive effect on their persistence. Astin’s thoughts reflect Chickering’s (1974), who implied that increasing institutional services that are abundant in the residential experience for commuter services could prove beneficial for the commuting population.

In *What Matters in College?* (1993), Astin provides a new study with additional variables to provide a better understanding of how undergraduate students are affected by their college experience (p. xi). Astin used CIRP data from a 1985 entering class and administered a follow-up survey in 1989-1990, which included over 200 variables measuring “a wide range of cognitive and affective student outcomes, affording the opportunity to examine how the college experience affects more than eighty different measures of attitudes, values, behavior, learning, achievement, career development, and satisfaction” (p. 4). The findings in Astin (1993) are similar to his findings in 1975 and 1977; suggesting that commuting is negatively correlated with bachelor degree attainment, enrollment in graduate or professional school, growth in leadership abilities and interpersonal skills, participation in extracurricular activities and student interaction, and self-ratings of overall satisfaction and emotional health.

In the final chapter, *Implications for Educational Theory and Practice*, Astin (1993) provides concluding thoughts on commuting:

There are also certain identifiable practices that seem to have *negative* impacts on students' cognitive and affective development practices: watching television, taking multiple-choice exams, working full-time, working off campus, and commuting. Discouraging or minimizing such activities will not only enhance learning but also reduce the dropout rate. Once again, all of these findings reinforce the critical role of student "involvement" in the college experience (p. 424)

Astin would later state that his findings showed that "the student's general educational development is retarded or impeded" when a student commutes to campus (p. 426). Once again, the sentiment among these seminal works is commuting is a practice, not a necessity. Thus, higher education leaders should encourage students not to commute. Yet, commuting is a necessity for many students, traditional and nontraditional age, as it is their only means of pursuing a non-online degree. In addition, even though Chickering (1974) used various types of colleges and universities, the majority of the institutions of study were weighted toward residential institutions (Dugan et al., 2008; Weisberg et al., 2003). Nevertheless, the notion that commuter students should pursue higher levels of involvement to improve their general educational development still holds merit in current studies (Pascarella & Terenzini, 2005).

A substantial amount of early research suggests that residential students are not only more involved (academically and socially) than their commuter peers, but they also make significantly greater gains during college on a range of outcomes. These outcomes include persistence through college and degree attainment; cultural and intellectual values; self-esteem; autonomy; independence, and internal locus of control; and use in principled reasoning in judging moral issues (e.g., Anderson, 1981; Astin, 1972, 1973, 1975, 1977, 1982, 1993; Baird, 1969; Chickering, 1974; Chickering & Kuper, 1971; Chickering, McDowell, & Campagna, 1969; Herndon, 1984; Matteson, 1974; Pace, 1984;

Pascarella & Chapman, 1983; Pascarella & Terenzini, 1991; Rest & Deemer, 1986; Rich & Jollicoeur, 1978; Scott, 1975; Sullivan & Sullivan, 1980; Welty, 1976). These differences in gains persist even when controlling for demographic characteristics, prematriculation (or precollege) characteristics, and matriculation characteristics (Pascarella et al., 1992). Although such a massive body of literature suggests such differences, a substantial line of subsequent research suggests that there are no significant differences between these two student groups in regards to cognitive growth and other academic success outcomes (e.g., Bowman & Partin, 1993; Giles-Gee, 1989; Pascarella et al., 1992; Pascarella, 1985a; Pascarella & Terenzini, 1991, 2005; Wolfe, 1993). Most of these studies are further discussed in the subsequent sections.

Student Profile Characteristics

Student profile characteristics simply represent the students' background, what the students "look like" and what the students have attained. In higher education, student profile characteristics can range from a student's age to a student's yearly rate of library books checked out. Braxton and Hirschy (2005) insist, "Administrators and individual faculty members should know the characteristics of students enrolled at their college or university" (p. 81). Students' background and profile characteristics are an integral part of research pertaining to student issues (retention or persistence, attrition, dropout or "stop-out," cognitive and affective development, academic success, and other student success areas) and this chapter accordingly draws from an amalgam of literature addressing these areas. Student profile characteristics are often categorized into three areas: Demographic, prematriculation, and matriculation. These areas are based on their similarities, the data available for the study, and use of these categories (or categories

with comparable terminology) in other higher education studies (e.g., CCSC Report, 1980; Chickering, 1974; Glynn, Sauer, & Miller, 2003; Hoover, 1991; Terenzini & Pascarella, 1978, 1980). Throughout this section, these characteristics will overlap other studies and sections.

Demographic Characteristics

Although definitions and types of demographic variables may vary, many studies utilize the following background variables: Ethnicity, age, gender, socioeconomic status, parental education level, and residency. According to Hoover (1991), “collecting demographic variables (e.g., race, age, and gender) will strengthen many research designs. Demographic variables allow the investigator to examine different patterns among subgroups and perform stratified analysis of data” (p. 77). In addition, several studies suggest that background characteristics play a more influential role on student retention than integrative factors at urban commuter institutions (e.g., Pascarella & Chapman, 1983; Pascarella, Duby, & Iverson, 1983; Pascarella, Duby, Miller, & Rasher, 1981). Demographic characteristics partly represent what Astin refers to as “inputs,” which are “characteristics of the student at the time of entry to the institution” (1993, p. 7).

Ethnicity

Race and ethnic origin are one of the most commonly used demographic characteristics within the student success literature, ranging from foundational studies (e.g., Astin, 1975; 1977; Bean, 1981) to more recent studies that use ethnicity as a more significant characteristic (e.g., Arredondo & Knight, 2005; Nora, Barlow & Crisp, 2005; Pascarella & Terenzini, 2005; Peltier, Laden, & Matranga, 1999; Reason, 2003). Studies

suggest that ethnic minority students are less likely to choose to attend college (e.g., Freeman, 1997; Hossler & Stage, 1992; Ortiz, 1986). The racial and ethnic composition of undergraduate students has dramatically shifted over the last three decades (Pascarella & Terenzini, 2005). Perhaps the most dramatic shift occurred between 1984 and 1994 when the enrollment of non-Caucasian undergraduate students rose 61% compared to a mere 5.1% increase in their Caucasian student peers during the same period (Pascarella & Terenzini, 1998). Trends regarding enrollment increases among racial and ethnic minorities postsecondary education are expected to continue to increase (e.g., Keller, 2001; Woodard, Love, & Komives, 2000).

Among the students enrolled in college, persistence and graduation rates are not consistent among different racial and ethnic groups (Nora, Barlow, & Crisp, 2005). Astin (1997), Murtaugh, Burns, & Schuster, (1999) and Peltier et al. (1999) found that Asian American and/or Caucasian students were most likely to be retained and the other racial groups were less likely to be retained. According to the National Center for Educational Statistics (NCES) (2010), the 6-year bachelor's degree completion rate by ethnicity is approximately 67% for Asians/Pacific Islanders, 60% for Caucasians, 48% for Hispanics, 42% for African Americans and 40% Native Americans/Native Alaskans at four-year institutions. In addition to the variations among institutional types, studies suggest that the campus context (e.g., predominantly White institutions [PWI]) can differentially influence student retention (e.g., Allen, 1992; Feagin, Vera, & Imani, 1996, Fischer, 2007; Gloria, Robinson-Kurpius, Hamilton, & Wilson, 1999; Nora & Cabrera, 1996; Smedley, Meyers, & Harrell, 1993; Steele, 1997, 1998; Steele & Aronson, 1995, 1998).

Age

Residential students tend to be younger than commuter students because nontraditionally aged students are less likely to live in residential halls. In consideration of age, studies generally suggest that younger students are more likely to complete their degree than more mature students (e.g., Martin & Karmel, 2002; Martin, Maclachlan & Karmel, 2001; Urban, Jones, Smith, Evans, Maclachlan, & Karmel, 1999). However, the majority of current studies suggest that the relation between age and persistence is greatly contingent upon additional contributing variables; therefore, “little current research is available connecting age to persistence” (Peltier et al., 1999, p. 364). On the other hand, in a study conducted on a commuter campus, Johnson (1989) reported that traditionally aged and nontraditionally aged students had the same risk factors for dropping out of college. In addition, Douzenis (1990) found no significant differences between college persisters and non-persisters when considering age.

Experiencing first-time college entrance at an older age is more common for males. Sax (2008) explains, “Today, approximately one in three men enter a four-year college for the first time at age nineteen or older, compared to only one in four women” (p. 15). In general, the higher education student composition continues to grow older (e.g., Keller, 2001; Murdock & Nazrul Hoque, 1999).

Gender

Gender differences regarding student success. Although researchers still face uncertainty with the relationship between gender and student success at urban public institutions, studies display patterns suggesting that a higher percentage of females complete their degrees than their male counterparts (e.g., Pascarella et al., 1983; Astin,

Korn, & Green, 1987; Morgaman et al., 2002; Murtha, Blumberg, O'Dell, & Crook, 1989). In a single institution study at an urban commuter university, Wolfe (1993) found that females had significantly higher GPAs than males, regardless of their residential status. Although the primary purpose of the study was to compare the academic success factors across commuters and residential students, the secondary purpose was to compare gender groups. The study was conducted at a four-year, public commuter institution with an enrollment of 20,308 students. To calculate gender differences, Wolfe (1993) used a one-way analysis of variance (ANOVA). The results indicated a significant difference in academic success between genders, as females had a significantly higher GPA than males regardless of their residential status or participation in the institutions' first-year integration program.

Research results pertaining to the influence of gender on student retention have also been mixed. A few studies have found that gender was significantly related to whether a student was retained within the institution (e.g., Astin, 1975; Astin, Korn, & Green, 1987; Christensen, 1990; Tinto, 1987). Early studies show that that gender was predictive of persistence and a higher proportion of male students persisted in college (e.g., Astin, 1972; Cope, 1971; Spady, 1970; Tinto, 1975). More recent studies also show that gender was predictive of persistence; but contrarily, these studies suggest that females are more likely to persist than males (Astin, 1993; Daily & Breegle, 1989; Galicki & McEwen, 1989; Lewallen, 1993; Peltier et al., 1999; York, Bollar, & Schoob, 1999). Yet, Reason (2001) conducted a retention study using a large data set from ACT, Inc. and reported that gender was not found significant. In addition, Moores and Klas (1989) and Walton (1992) found that gender was not significantly related to students'

decisions to drop out or stay in college. In terms of college completion, female students received 58% percent of all bachelor degrees in 2004, a percentage that closely mimics the female enrollment in higher education (NCES Table 247, 2004).

Gender differences regarding enrollment. Since the early 1980s, the gender gap in higher education has reversed from favoring males to favoring females. According to the National Center for Educational Statistics (NCES Table 193, 2007), college undergraduate enrollment consists of 55% female and 45% male at public four-year degree-granting institutions. When examining the enrollment characteristics of all students (full- and part-time/all levels) at public four-year degree-granting institutions, the 2007 enrollment was 57.2% female and 42.8% male (NCES Table 188, 2007). These percentages show a significant change since the 1970, which consisted of 41.2% female and 58.8% females at public four-year degree-granting institutions (NCES Table 188, 2007). Furthermore, the total amount of females enrolled at public four-year degree-granting institutions almost tripled from 1970 to 2007, increasing from 3,537,245 to 10,432,214. On the other hand, the total enrollment at males at public four-year degree-granting institutions only increased from 5,043,642 (in 1970) to 7,815,914 (in 2007) (NCES Table 188, 2007). Much like the increase in ethnic minority enrollment (as highlighted in Pascarella & Terenzini, 2005), the increase in female enrollment marks the new enrollment population and shows no signs of slowing down (Buchmann & Thomas, 2006).

Socioeconomic Status

Many researchers consider students from low socioeconomic (SES) backgrounds to be the most disadvantaged groups of students entering college (Cabrera, Burkum, & La

Nasa, 2005). Studies show that low SES students' parents or parental surrogates are less knowledgeable about how to plan and pay for college (e.g., Flint, 1992, 1993; King, 1996). By the end of the twelfth grade, high school seniors from low SES backgrounds are less likely to have planned for and be academically prepared for college (e.g., Adelman, 1999; Cabrera & La Nasa, 2000, 2001; Camblin, 2003; Terenzini, Cabrera, & Bernal, 2001). This lack of planning is often attributed to the notion that low SES students are more likely to be the first-generation students and/or have family and social circles that lack knowledge about higher education in general (e.g., Coleman, 1988; Dika & Sing, 2002; Engle & Tinto, 2008; Flint, 1992, 1993; King, 1995; McDonough, 1997; Pascarella, Wolniak, Pierson, & Terenzini, 2003; Vargas, 2004).

If students from low SES backgrounds do reach college, their readiness levels are inferior to their more economically privileged peers and are more likely to enroll in public institutions, especially community colleges (e.g., Kim, 2004; McPherson & Shapiro, 1998). During college, low SES students face financial struggles and are more likely to live and work off-campus (Engle & Tinto, 2002). Several longitudinal studies suggest that the likelihood of completing a degree is lower for students from lower SES backgrounds than for their middle- and upper-income counterparts (e.g., U.S. Government Accounting Office Report, 1995; Nunez & Carroll, 1998; Urban et al., 1999).

Parental Education Level

The majority of literature addressing parental education level focuses on first-generation students, which are often defined as students whose parents have no postsecondary experience and their highest degree level is a high school diploma or less

(e.g., Billson & Terry, 1982; Nunez & Carroll, 1998; Nunez & Cuccaro-Alamin, 1998; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Studies consistently indicate that compared to students whose parents are college graduates, first-generation students are less likely to enroll in postsecondary institutions (e.g., Nunez & Carroll, 1998; Horn & Nunez; Choy, 2001; Terenzini et al., 1996), persist in four-year institutions and obtain a bachelor's degree by five years (e.g., Attinasi, 1989; Berkner, Horn, & Clune, 2000; Billson & Terry, 1982; Choy, 2000; Horn, 1998; Nunez & Cuccaro-Alamin, 1998; Richardson & Skinner, 1992; Warburton, Bugarin, & Nunez, 2001). Based on data from a national longitudinal study (using NCES statistics), 34% of students entering four-year institutions in 1995-1996 were first-generation students. In addition, first-generation predominantly enroll in two-year institutions and are more likely to enroll in public four-year institutions than private four-year institutions (Nunez & Cuccaro-Alamin, 1998; Saenz, Hurtado, Barrerra, Wolf, & Yeung, 2007).

A disproportionate number of first-generation students come from low socioeconomic backgrounds, are Hispanic or other underrepresented minority, are not born in the United States, and come from households where English is not the primary language spoken (e.g., Choy, 2001; Warburton et al., 2001). In 1998, Nunez and Cuccaro-Alamin compared first-generation students to their non-first generation counterparts using data from a federal postsecondary longitudinal study with a survey sample of 10,800 college graduates. Using Data Analysis System (DAS) software, Nunez and Cuccaro-Alamin employed multiple Student's t-tests to compare the difference between means and multiple linear regression models for adjustment of the means to control for background variation. The authors found that first-generation students are

more likely to commute to campus (84% compared to 60%), enroll part-time (30% compared to 13%), not be in bachelor degree-seeking programs (88% compared to 43%), delay entering postsecondary education (46% compared to 19%), work full-time while enrolled in college (33% compared to 24%), and receive aid (in general) (51% versus 42%), grants (42% versus 35%) and loans (22% versus 18%). (Nunez & Cuccaro-Alamin, 1998). Lundberg, Schreiner, Hovaguimian, and Miller (2007) also found that first-generation students, especially those from low SES backgrounds, are more likely to be commuter students.

Studies suggest that the likelihood of enrolling in higher education is strongly related to parental education level even when other factors are taken into consideration (e.g., Nunez & Carroll, 1998; Horn & Nunez; Choy, 2001; Terenzini et al., 1996). Using data from a national longitudinal study (NCES), Horn and Nunez (2000) found that among the 1992 high school graduates 59% percent of students whose parents had no college degree enrolled in some type of postsecondary education within two years of high school graduation. However, the college enrollment for students whose parents had some college experience increased to 75% and an astounding 93% among students whose parents held at least a bachelor's degree (Horn & Nunez, 2000). By calculating for Student's t statistic, Horn and Nunez found that that family income, parental involvement, educational expectations, academic preparation, and peer influence also independently affected high school graduates' likelihood of enrolling in a 4-year institution. Even when controlling for these variables, however, parental education level remained significant (Horn & Nunez, 2000).

In addition to the previous studies, other studies suggest that parental postsecondary education and parental encouragement to attend college are strongly associated with students' intentions to enroll in postsecondary education (e.g., Carpenter & Fleishman, 1987; Gaier & Watts, 1969; Hossler & Stage, 1992; Sewell & Shah, 1978; Stage & Hossler, 1989). In relation to college student persistence, several studies suggest that parents' postsecondary educational levels and incomes are strongly related to academic success in college and indirectly related to persistence to a college degree (e.g., Astin, 1975; Anderson, 1987; Braxton, Sullivan, & Johnson, 1997; Chapman & Pascarella, 1983; McDonough, 1997; Pascarella, Smart, & Ethington, 1986; Pavel, 1991; Stage, 1989; Tinto, 1987; Williamson & Creamer, 1988).

However, a few studies at commuter campuses contradict the studies that suggest considerable disadvantages for non-first generation students after they enter college. In 2004, ASHE-ERIC Higher Education Report concluded, "As parents' educational level increases, the likelihood of student departure from a commuter college or university also increases" (p. 40). Braxton and Hirschy (2005) drew the same conclusion and like ASHE-ERIC (2004), they reference Hagedorn, Maxwell, and Haptom (2001-2002) and Halpin (1990). Yet, using these studies as a foundation for such conclusion that engulfs commuter colleges *and* universities could easily be considered presumptuous. Both of these works are single-institutional studies with relatively small samples (202 and 381) at two-year public community colleges. In addition, the Hagedorn, Maxwell, and Haptom (2001-2002) sample only consisted of African-American males. Therefore, more research is needed to test the notion that the higher the parental degree the more likely a student is

to depart from commuter college or university. Further, there is a possibility that some of the students sampled were departing to attend another institution.

Some studies link the notion that parental education experience negatively affects student retention to “residentiality” (ASHE-ERIC, 2004; Laden, Milem, & Crowson, 2000). Rooted in sociological theory (Newcomb, 1943), residentiality is a student’s physical and social isolation from his/her precollege life and the acceptance of a new and contrasting lifestyle during college (ASHE-ERIC, 2004; Kamens, 1977). Residentiality encompasses living in the residential halls and being engulfed in rich social communities (e.g., student clubs, Greek letter organizations, secret societies, social cliques) that are deeply engrained in many residential campuses. During their upbringing, some students accumulate specific residentiality images of college primarily from their parents who attended a residential campus. Two studies suggest that when these students attend commuter institutions and their student experiences do not mirror their residentiality perception of college, the students are more likely to leave the institution (Laden, Milem, & Crow, 2000; Nora, Attainsai, & Matonak, 1990). Despite these studies, the greater body of previous research suggests that students from families with higher education experience possess advantages over first-generation students.

Prematriculation Characteristics

Although definitions vary among studies, prematriculation characteristics refer to precollege scholastic measures at the time of entry. Tinto (1975) referred to prematriculation characteristics as “precollege schooling.” The precollege variables used in this study are high school grade point average (HSGP) and achievement test scores - Scholastic Aptitude Test (SAT) and American College Testing (ACT).

High school grade point averages (GPAs) and standardized tests taken before college entry serve as important characteristics because of their significance relating to predicting student success. A substantial body of literature suggests that HSGPA and standardized tests (ACT or SAT) scores are strong predictors of how academically successful students will be in college (e.g., Astin, Korn, & Green, 1987; Fleming, 2002; Kim, 2002; Moffat, 1993; Ramist, Lewis, & McCamley-Jenkins, 1993; Tross, Harper, Osher, & Kneidinger, 2000; Waugh, Micceri, & Takalkar, 1994; Wolfe & Johnson, 1995; Zheng, Saunders, Shelley, & Whalen, 2002). Several studies suggest that high school grade point average is a better predictor of student academic success than standardized test scores (e.g., Geiser & Santelices, 2007; Hoffman, 2002; Hoffman & Lowitzki, 2005; Munro, 1981; Zheng et al., 2002). Further, several studies suggest that high school grade point average is a better predictor of student academic success in college than any other single factor (e.g., Astin & Oseguera, 2005; Camara & Echternacht, 2000; Fleming, 2002; Fleming & Garcia, 1998; Geiser & Santelices, 2007; Hoffman, 2002; Munro, 1981; Tross et al., 2000; Zheng et al., 2002).

However, a few studies suggest that high school academic achievement has very little influence on student academic success in college (e.g., Nora & Cabrera, 1996; Cabrera & Nora, 1994; Cabrera, Nora, & Castaneda, 1993). DuBrock (1999) presented dissimilar findings that suggest that HSGPA had a significant effect on student persistence into the second and third year of college. For standardized test as a predictor, Ishitani and DesJardins (2002-2003) found that students with high SAT scores (highest quartile) had lower risks of attrition relative to students with lower scores (bottom three quartiles).

The comparison of HSGPA and standardized test scores between commuter and residential is rarely presented as a primary focus in higher education research. This most likely can be attributed to traditional residential requirements. Until the last few decades, many students were denied access to living in residential facilities because of their admission requirements (ex: high school GPAs) (Chickering, 1974). Today, students are virtually never denied access to institutional residential halls based solely on their high school GPA or standardized test scores, with exception to a residential hall or floor that is reserved for honors students or other groups chosen by their academic credentials.

Matriculation Characteristics

Matriculation characteristics primarily refer to indicators of academic attainment and academic success. Higher education professionals have traditionally been deeply interested in measureable academic success and academic attainment outcomes (Pascarella & Terenzini, 2005). This section covers the existing literature that addresses matriculation characteristics, and the majority of the literature selected is relevant to the commuter-versus-residential comparison at urban commuter four-year institutions.

Matriculation characteristics often include GPA, enrollment status (part- or full-time enrollment), grossed units, academic (class) standing, retention, participation in athletics, and financial aid (Four levels: Grants, scholarships, loans, and work study). Many of these works incorporate cognitive development as a measure of academic success. However, these studies unfortunately are unable to address cognitive development or any other development measure because they require pre- and post-tests measures.

Although Chickering (1974) and Astin (1975, 1977, 1993) portray commuting as a being disadvantaged from almost every measurable aspect relevant to higher education, several studies (e.g., Bowman & Partin, 1993; Fleming, 1984; Pascarella, 1985; Wolfe, 1993) suggest that there are no significant differences between commuter and residential students in regards to academic success outcomes. In 1985, Pascarella continued his sequential works of “Reassessing the effects of living on-campus versus commuting to college” but narrowed the focus to “explain the influence of on-campus living on intellectual and interpersonal self-concept” (p. 293). Pascarella used a multiple-phased, complex model considering numerous student entering characteristics, institutional characteristics, the location of the student’s residence, and academic and social integration. The sample consisted of 9,448 students who completed an initial (in 1975) and post survey (in 1977) from 100 institutions, including commuter institutions. However, it is important to note that the student sample lacked diversity, consisting primarily of Caucasians and only included full-time students. Pascarella and Terinzini (2005) would later acknowledge the faults of such lack of diversity and accordingly designed their recent studies to reflect the diverse student body.

Pascarella’s (1985) findings were striking in the 1980s. After using a six-item instrument addressing academic interests, academic satisfaction, and academic success, Pascarella concluded that academic integration was not affected by where the students lived. Pascarella’s study also suggests that living on-campus had no direct effects on students’ overall satisfaction, educational aspirations, persistence, and progress to degree. The only areas that living on-campus had a direct impact on was social integration (specifically, interaction with peers and faculty). Moreover, Pascarella’s findings varied

from the Chickering and Astin's findings that suggested great separation between the "have and have not" (residential and commuter students).

In 1993, Pascarella, Bohr, Nora, Zusman, Inman, and Desler continued the conversation with their report, "Cognitive Impacts of Living on Campus versus Commuting to College," and found results that were unfavorable to commuters. The authors collected data from 210 (40 lived on campus and 170 lived off campus) incoming freshman at a large, Research I, urban commuter institution in Chicago, IL. The institution enrolled approximately 25,000 students, around 16,000 of which were undergraduates, and only 1,000 students lived in residential halls. The authors used a "pretest-posttest quasi-experimental design in which comparison groups (residents versus commuters) were statistically equated on salient...precollege variables" (p. 7). The research design measured "relative group change or gain" in reading comprehension, mathematic skills, and critically thinking through the Collegiate Assessment of Academic Proficiency (CAAP) test.

Pascarella, Bohr, Nora, Zusman, and Inman (1992) found that the resident sample at this urban commuter campus made a significant difference ($p < .01$, covariance analysis) in gains in the critical thinking measure than their commuter students peers. However, the authors found that the "differences between resident and commuter reading and mathematic gains were small and nonsignificant" (p. 10). With the differences in critical thinking testing significant and the reading and mathematic skills testing non-significant, the authors concluded that their findings suggest "the possibility that residential living may be most influential in fostering cognitive growth in areas that are not closely linked to specific course or curricular experience" (p. 12). The authors go on to discuss the

study's implications for student affairs professionals. They conclude that the residential experience has great potential for influencing student learning and cognitive growth and professionals should find ways to "reach" commuters with similar experiences.

College Grade Point Average

The majority of the literature suggests that student residence (on- or off-campus) is not, in and of itself, an accurate predictor of student grade point average (GPA). Blimling (1989, republished 1999) is perhaps the most comprehensive study of the relationship between student residence and grade point average (Bowman & Partin, 1993). Blimling used a complex meta-analysis to integrate and summarize empirical research from 1966 to 1987. Blimling selected twenty-one studies for the meta-analysis that addressed "the influence of life in a college residence hall on the academic performance of undergraduate college students in the United States" and reported a statistic from which an effect size could be computed (1989, p. 298). Blimling used grade point average as his instrument of measure. At his initial examination, Blimling reported that one could conclude from the twenty-one studies that students living in residential halls perform better academically than those living at home. However, Blimling further examined the relationship controlling for differences in the students' past academic performance. After further examination, Blimling reported that his initial assertion was inaccurate. Blimling reported that there was no evidence that living in residential halls had an academic influence over living at home.

To further examine the relationship addressed by Blimling (1989), Bowman and Partin (1993) explored the differences between commuter students and residential students' GPAs and ACT scores. Bowman and Partin collected data from a stratified

random sampling of the freshman enrollment at a small institution (enrollment approximately 4,000 at the main campus) in the south. Unfortunately, the authors did not specify whether the institution was primarily commuter or not. The results of a t-test showed that there was no statistically significant difference in GPAs between the students living on- and off-campus. In addition, Bowman and Partin found no significant differences between ACT scores and living on-campus or off-campus. The authors concluded that the results of their single institution study support the conclusions of Blimling (1989) that “student residence is not, in and of itself, an accurate predictor of academic performance [grades]” p. 75. The authors also note these findings are specific to freshman students and generalizations beyond freshman status should be avoided.

Wolfe (1993) addresses academic success (GPA), persistence, and institutional integration of first-year students (residential and commuter) in relation to a freshman year intervention program, the Freshman Center. This study examines the commuter-versus-residential student comparison, paying specific attention to the differences between gender. The study was conducted at a “four-year, predominantly nonresidential [commuter], predominantly White, suburban, state-funded institution in the lower mid-Atlantic region” with an enrollment of 20,308 students (Wolfe, 1993, p. 322). After administering a 54-Item First-Year Student Questionnaire, Wolfe examined the relationship differences between three on-campus residents groups (enrolled in the program, placed on the program wait-list, and not enrolled) and commuter groups (enrolled and not enrolled). For most of the relationships, Wolfe used a multivariate analysis of variance (MANOVA) quantitative comparison and when significant, used a

follow-up two-way ANOVA. For the relationships pertaining to persistence, a chi-square analysis was conducted.

Since the differences between genders in Wolfe's (1993) study were covered in the previous "Demographic Variables" section, this section addresses only the difference between the commuter groups and the residential groups. Perhaps the most relevant finding pertaining to academic success is that Wolfe found no significant differences between commuter students and residential students' grade point averages. Two other dependent variables in the MANOVA, academic integration and commitment, were determined insignificant variables between the residential and commuter student groups. The only dependent variable found to be significant ($p < .001$) between residential and commuter students was social integration (Wolfe, 1993). Although these differences in social integration are consistent with the majority of the existing body of literature (e.g., Astin, 1975, 1977, 1993; Chapman & Pascarella, 1983; Chickering, 1974; Pascarella & Chapman, 1983; Tinto, 1975), the lack of significance between the other dependent variables further contributes to the notion that the educational gaps between the two student groups may not be as spacious after all.

College GPA as a predictor of persistence. Despite the fact that Tinto (1993) found that "only 15 to 25 percent of all institutional departures arise from academic failures (pp. 81-82)," several studies suggest that undergraduate GPA is an effective predictor of whether a student will persist in college. Astin (1972) found that a student's undergraduate GPA was more closely related to persistence in college than any other single predictor. In 1975, Astin concluded, "College grades appear to influence persistence directly, independent of initial variations in ability and family background,

financial aid and employment during college, freshman residence, and type of institutions” (pp. 99-100). Since these studies, Pascarella and Terenzini (1991, 2005) and Astin (1993) suggest that measures of academic achievement could be the strongest predictor of bachelor’s degree obtainment.

Enrollment Status

Enrollment status referred to a student’s enrollment at the institution, which is categorized as either part- or full-time. At most institutions, a student must enroll in 12 or more units to be considered full-time, and any student enrolling in less than 12 units is considered part-time. In general, part-time students are more often commuter students than residential students. Therefore, many of the differences between part- and full-time students embody the dissimilarities between commuter and residential students.

Compared to their full-time peers, part-time students are more likely to be older, female, an ethnic minority (especially Hispanic), financially independent, a first-generation college student, and tend to lag in retention and graduation rates. In 2003-04, part-time students comprised 53.3% of student enrollment at four-year public universities (U.S. Department of Education Report, 2007).

Student Retention

Since the 1970s, very few issues in the study of higher education have drawn as much attention from college and university administrators as student retention (Barefoot, 2004; Hermanowicz, 2003). The National Center for Educational statistics defines retention as a “measure of the rate at which students persist in their educational program at an institution, expressed as a percentage” (NCES Website, 2010). Tinto (1983) found that “more students leave their college or university prior to degree completion than stay”

(p. 1). According to Barefoot (2004), less than 50% of national college students complete a baccalaureate degree within a five-year timeframe. Furthermore, our nation's five-year graduation rate has declined since the early-1990s (Astin & Osequera, 2002). Within the now-standard five-year rate of degree completion, the highest dropout period takes place in between the freshman and sophomore year (Barefoot, 2004).

Student retention theoretical models. Over the past four decades, student retention research has been anchored by Spady (1970, 1971) and Tinto (1975), serving as a foundation for many theoretical frameworks. Spady and Tinto are rooted in Emile Durkheim's (1951, 1961) social psychology theory of suicide. Spady and Tinto specifically focused on a type of suicide Durkheim identified as "egoistic," which primarily focuses on social integration. Durkheim (1961) posited that suicide is more likely to occur when individuals are insufficiently integrated into society. This theory inversely suggests that the more integrated an individual is in society, the less likely the individual is to commit suicide. Spady and Tinto transferred this concept into an educational setting by hypothesizing that the more a student is integrated into a higher education institution, the less likely the students will depart (or reduce the their relationship) from the institution.

Spady (1970, 1971) was the first to apply Durkheim's Theory to student dropout. Spady (1971) explored the correlation between an individual's decision to commit suicide and student's decision to drop out of college. Spady's research would consequently serve as a key foundation for the work of Vincent Tinto, who is perhaps the most notable scholar in student retention. In 1975, Tinto gathered a comprehensive literature review on student attrition research and connected the literature to Durkheim's

Theory of suicide to formulate a complex theoretical model called Tinto's Theoretical Model of Dropout (1975) or retrospectively called Tinto's Student Integration Model (SIM).

Tinto's Model posits that student departure from college is a longitudinal process of interactions between the student and the academic and social systems of the institution, and the student's experiences in those systems (specifically, normative and structural integration) continually alter the student's goal and institutional commitments in ways that lead to persistence or varying forms of attrition. In addition, Tinto's Model incorporates student profile characteristics, "a variety of attributes (e.g., sex, race, ability), precollege experiences (e.g., grade-point averages, academic and social attainments), and family backgrounds (e.g., social status attributes, value climates, expectational climates), each of which has direct and indirect impacts upon performance in college" (p. 95). Tinto's longitudinal model suggests that the more a student is academically and socially integrated into the institution and committed to the institution, the higher probability the student will not leave the institution. Tinto's Model also incorporates the notion of institutional fit, meaning whether the student believes that his/her role adequately belongs in the institutional climate.

Tinto's Student Integration Model (1975) and its modified versions (1985, 1993) have been rigorously tested over the past three and a half decades. After assessing research from 1981 to 1997 testing Tinto's theory (single- and multi-institutional studies), Braxton (2000) reported that empirical tests showed mixed results and that the theory is "partially supported and lacks empirical internal consistency" (p. 3). Braxton and Lien (2000) displayed the essentially non-existence empirical multi-institutional research

testing Tinto's Theory at four-year commuter institutions. Perhaps the most notable multi-institutional study that incorporates four-year commuter institutions is Pascarella and Chapman (1983), which largely supports Tinto's Model (1975).

In 1983, Pascarella and Chapman investigated the validity of Tinto's Model (1975) in 4-year commuter institutions, 4-year residential institutions, and 2-year commuter institutions. Pascarella and Chapman collected student data over two academic years at eleven 2-year and 4-year institutions. These data were derived from 2,326 freshmen who completed the Student Involvement Questionnaire (SIQ) and additional information was obtained on the students' background characteristics (e.g., high school grades, socioeconomic status, personality orientations) and other characteristics listed in Tinto's Model (1975). The authors ran four discriminant analyses to "determine the efficiency of the variables in correctly classifying persisters and withdrawers" and followed up with a path analysis to test the predictive validity (p. 93). The institutions for the discriminant analysis were classified as 4-year residential, 4-year commuter, and 2-year commuter and the variable sets entered were 1) student background characteristics, 2) institutional characteristics, living on-campus, and major, 3) Academic and social integration, and 4) institutional and goal commitment. Pascarella and Chapman's findings largely supported the predictive validity of Tinto's Model. Perhaps more significantly, the authors found that patterns of influence were varied by institutional type. They found that social integration played a stronger role influencing persistence at the 4-year residential institutions, while academic integration played a more important role for persistence at 2- and 4-year commuter institutions (Pascarella & Chapman, 1983).

Pascarella, Duby, and Iverson (1983) is perhaps the most cited single-institutional studies testing Tinto's Model at a large, 4-year commuter institution. At the time of the study, there had "yet to be a complete test of Tinto's model with a non-residential [commuter] sample" (Pascarella, Duby, & Iverson, 1983, p. 89). The results of Pascarella, Duby, and Iverson's test suggest that Tinto's model can be applied to commuter institutions. Based on their results, the authors provided suggestions for a reconceptualization of Tinto's model when applying it to commuter institutions. For the study, the authors drew from a sample of 579 freshmen (using data from their freshman and sophomore year) and applied a hierarchical regression analysis and path analysis to test the predictive validity of the model.

The results displayed that the academic integration model components followed the pattern of residential institutions shown in the existing research. However, the social integration components were inconsistent with the residential patterns, suggesting that social integration played a negative influence on the student persistence. Pascarella, Duby, and Iverson (1983) concluded, "...it would appear that in non-residential [commuter] institutions commitment to the institution at the end of the freshman year is defined largely by successful and personally satisfying interactions with the academic rather than the social systems of the institution" (p. 95). This finding correlates with several other studies. Compared to patterns at predominantly residential institutions, student departure at commuter institutions (2- and 4-year) seem to be influenced less by social events on campus than by strictly academic matters (e.g., Pascarella et al., 1981; Pascarella & Chapman, 1983; Pascarella & Wolfle, 1985; Staats & Partio, 1990; Stage, 1989; Schwartz, 1990; Webb, 1990; Williamson & Creamer, 1988; Zaccaria & Creasar,

1971). Furthermore, Pascarella, Duby, and Iverson (1983) also found that the “intent to continue at the institution” was the strongest predictor of persistence at the institution. Thus, one of the primary recommendations of remodeling for commuter institutions was to add the “intention variable” to Tinto’s Model.

Since Pascarella, Duby, and Iverson (1983), the majority of research using single-institutional designs suggest that specific detriments exist when applying Tinto’s model to a commuter institution and that this area still needs to be verified by further research (e.g., Allen & Nelson, 1989; Braxton & Brier, 1989; Braxton, Brier, & Hossler, 1988; Cabrera, Nora, & Castaneda, 1992, 1993; Nora & Cabrera, 1996; White & Mosely, 1995). ASHE-ERIC Higher Education Report (2004) concludes that Tinto’s Theory cannot be adequately applied to commuter institutions because of their ill-structured problems, referring to the inherent nature lacking “well-defined and –structured social communities for students to establish membership” (p. 35). This ill-structured problem is a stark contrast from residential institutions.

Furthermore, the Report states that a theory that can adequately be applied to commuter institutions has yet to be developed. According to the ASHE-ERIC Higher Education Report, a theoretical or conceptual framework for commuter institutions “requires the use of constructions derived from various theoretical orientations: economic, organizational, psychological, and sociological” (2004, p. 35). The Report notes that there is no formal theory of these four orientations that currently accounts for student departure at commuter institutions. The Report further explains that researchers should borrow constructs derived from these theoretical orientations to guide their research.

Student retention and degree completion by institutional type. Student retention and degree completion rates greatly vary by type of institution. Degree completion and retention rates are significantly lower at publicly funded institutions rather than private not-for-profit funded institutions (e.g., Astin & Oseguera, 2005; Barefoot, 2004; Tinto, 1993). Examining a cohort from 2001-2007, NCES (2010) reported that the six-year bachelor's degree completion rate by control of institution was 55% for four-year public institutions, 64% for four-year private not-for-profit institutions, and 25% for four-year for-profit institutions. Aside from four-year institutions, two-year institutions (community colleges) consist of a massive part of public funded institutions as they enroll over 50% of the country's undergraduate students. These open access, two-year institutions account for the most significant amount of college dropouts (Barefoot, 2004). The dropout rate at open enrollment institutions (e.g., community colleges) is almost 50%. In addition, dropout rates are significantly lower at highly selective institutions (8%) than at less selective institutions (as high as 35%) (Devarics & Roach, 2000).

Many researchers attribute the low degree completion rates of public institutions to the college entry characteristics of their students. Astin and Oseguera (2005) explain that the differences of completion rates “by institutional type are no doubt partially attributable to the varying preparation levels of the students entering different types of institutions” (p. 253). Sax, Astin, Korn, and Mahoney (2000) found that almost 70% of the students entering private universities, compared to only 30% of students entering public four-year colleges, had an “A” high school grade point average. Although four-year public universities have a higher percentage of students who have an A grade

average from high school (50%) than four-year public colleges, they still significantly lag behind private colleges and universities (Astin & Osequera, 2005).

Participation in Athletics

Some research linking student-athletes and academic success addresses student-athlete graduation rates. Early research shows that student-athletes underperform in the classroom compared to their peers (e.g., Cross, 1973; Nyquist, 1979; Sack & Thiel, 1979). Yet, when controlling for precollege characteristics, other studies suggest that participation in intercollegiate athletics is positively associated with motivation toward retention, degree completion, graduation rate, gains in internal locus of attribution for success during the first year, and the overall college experience satisfaction (Astin, 1993; Pascarella et al., 1996). During the period of these two studies (early-to-mid 1990s), an increased focus on student-athletes graduation rates emerged.

Sparked by the federal Student Right-to-Know mandate that required universities and colleges report graduation statistics, the National Collegiate Athletic Association (NCAA) began publishing the graduation rates of the student-athletes within their member institutions in 1993. The yearly publications of NCAA graduation rates using the federal formula often show that student-athletes have slightly higher graduation rates than their non-athlete student peers (Ferris, Finster, & McDonald, 2004). Using the Federal Graduate Rate (FGR) calculations, a 2007 NCAA comprehensive study of the 2000-2001 Division-I freshman cohort displayed that 63% of the student-athletes graduated within a six-year timeframe when compared to 62% of students graduated from the general student body (NCAA, 2007). Overall, the research addressing student-athletes and academic success is mixed.

Financial Aid

An increasing amount of research has focused on financial aid's role on college retention and degree completion. Both theory (e.g., Leslie & Brinkman, 1988; Paulsen & St. John, 2002; St. John, Paulsen, & Starkey, 1996; Tinto, 1993) and common logic “suggest that economic circumstances play an important role not only whether and where students go to college but also how long they will remain” (Pascarella & Terenzini, 2005, p. 407). Several empirical studies containing numerous well-controlled variables (e.g., academic abilities) indicate that financial aid enhances student retention and graduation, especially among low-income students (e.g., Astin, 1993c; Cabrera, Stammen, & Hansen, 1990; Chen & DesJardins, 2008; Dynarski, 1999; Ishitani & DesJardins, 2002-2003; St. John, 1990; St. John, Kirshstein, & Noell, 1991; St. John & Masten, 1990; Wei & Horn, 2002). However, estimating the effects of financial aid on student retention and degree completion is far from a straightforward procedure (Heller, 2003). There are numerous other economic/financial variables to be considered like parental/family assistance, personal funds, diverse combinations of aid forms (e.g., grants, scholarships, loans, work study programs) and the source (e.g., personal, private company, institutional, state, and federal) (e.g., Chen & DesJardins, 2008; Heller, 2003; Pascarella & Terenzini, 2005).

Grants and scholarships. While the majority of the literature suggests that financial aid helps reduce students' economic barriers pertaining to student retention and graduation, previous research is not as clear as to which type or combination of aid is most beneficial to the student. After controlling for academic success measures, several studies found that grants or scholarships (or combination of both) negatively related to within year and year-to-year student retention (e.g., Kaltenbaugh, St. John, & Starkey,

1999; Payne, Pullen, & Padgett, 1996; Somers, 1996; St. John & Oescher, 1992; St. John & Starkey, 1995). DesJardins, Alburg, and McCall (2002) found that when controlling for other variables, need-based grants had no impact on retention over a seven-year period, while merit-based scholarships of equal value had a significant impact in each year. While the literature is not conclusive, several studies suggest that grant aid alone has a positive and significant (although modest) effect on retention and degree completion, even when controlling for demographic characteristics (e.g., Astin, 1993; Clotfelter, 1991; Cofer & Somers, 1999; DesJardins et al., 1999; Dynarski, 1999; Heller, 2003; Pascarella & Terenzini, 2005; St. John, 1990, 1991; St. John et al., 1991; U.S. General Accounting Office, 1995; Wei & Horn, 2002). Aside from the implications for retention and graduation, grant aid and scholarships are beneficial in the practical sense that, unlike loans, the funding does not have to be repaid.

Loans. Across all institutional types, college students are continuing to borrow money at a faster rate. Between 1990 and 2000, the number of students obtaining loans also more than doubled, from 4.5 billion to 37.5 billion, and the total loan volume (real dollars) more than doubled from \$16.4 billion to \$37.5 billion (e.g., Berkner & Bobbitt, 2000; Center for Policy Analysis, 2001; Heller, 2001). Research examining undergraduate students and loans in terms of retention and degree completion has produced mixed implications. Several studies suggest that, controlling for other factors, there is a negative relation between borrowing and being retained into the next semester (e.g., Paulsen & St. John, 2002; Somers, 1996; St. John, Oescher, & Andrieu, 1992) or into the second year (e.g., Murdock, Nix-Mayer, & Tsui, 1995; Somers, 1996). Other studies suggest that, when controlling for other variables, the effect of loans are either

positively related to retention and graduation or have no significant effect (e.g., Choy & Premo, 1996; Clotfelter, 1991; Cofer & Somers, 1999; Cucaro-Alamin & Choy, 1998; DesJardins et al., 1999; Horn & Berkold, 1998; King, 2002; St. John, 1990, 1991; St. John et al., 1991; Wei & Horn, 2002). Yet, the effects of borrowing may obscure the finding that when loans are found to have positive or no influence on retention and graduation, the loans measured are often part of a financial aid package that also includes grants (e.g., Cofer & Somers, 1999; King, 2002, St. John, 1991; St. John et al., 1991; Wei & Horn, 2002).

Work study. Work study programs are often designed to provide flexible work hours and be considerate of the students' academic schedule. For residential students, home and college are already synonymous, and working on-campus provides a third layer of campus association. Work study programs also provide additional opportunities for social engagement in the social and academic systems of the college or university (Pascarella & Terenzini, 1991, 2005). Many campuses place their work study students within their interest areas to help "students learn and earn at the same time" (Pascarella & Terenzini, 2005, p. 410). The literature addressing work study and academic success measures is mixed. Several studies using nation-wide data from the National Postsecondary Student Aid Study of 1987 found that college work study, whether in various aid packages but controlling for the net gains of other aid, is negatively related to Fall semester to Spring semester retention (e.g., Kaltenbaugh et al., 1999; Paulsen & St. John, 2002; St. John & Starkey, 1995). Other studies suggest that there is a significant and positive effect between work study aid and student retention and degree completion (e.g., Adelman, 1999; Beeson & Wessel, 2002; Cofer & Somers, 1999; DesJardins et al.,

2002; Heller, 2003; Kodama, 2002; St. John, 1990; St. John et al., 1991; Wilkie & Jones, 1994). Although the academic success implications for work study is mixed, work study can prevent students from accumulated debt through student loans.

Theoretical Framework

Although status attainment theory has been modified and expanded since the seminal works of the late 1960s, status attainment can generally be explained as a sociological concept that provides a basis for identifying the contributors to an individual's current status in society. Blau and Duncan's (1967) foundational status attainment model explains that status attainment is affected, both directly and indirectly, by ascribed and achieved status. Ascribed status is reached by the contributors that were assigned to the individual at birth or assumed involuntarily (e.g., parental status, parental education level, and family income) (Blau & Duncan, 1967; Sewell, Haller, & Portes, 1969). On the other hand, achieved status is reached through contributors that an individual pursues or accepts voluntarily (e.g., education and prior occupation) (Blau & Duncan, 1967; Lai, Lin, & Lueng, 1998). Blau and Duncan's model addresses how these ascribed and achieved factors contribute throughout incremental lifelong sequences that starts with an individual's background and continually influences later stages of success, thus determining their status attainment.

As Blau and Duncan (1967) provide a theoretical anchor, Kelly (1990), Smith (1990) and Lin (1990) insist that all succeeding modifications and developments should be evaluated for their contribution to the explanation of status attainment (Lin, 2001). Sewell and Hauser (1975) added sociopsychological variables; Wright (1979) and Goldthorpe (1980) revamped the status of classes; Baron and Bielby (1980) and

Kalleberg (1988) incorporated “structural” entities and positions as both contributing and attained statuses; Treiman (1970) identified comparative development within the model and recognized institutions as contingent conditions. Lin (2001) explains that these revisions and expansions “have significantly amplified rather than altered the original Blau-Duncan conclusion concerning the relative merits of achieved versus ascribed *personal resources* in status attainment” (p. 78).

Modern social researchers often view status attainment as a framework to explain the process of how individuals’ reach their social capital, socioeconomic status, occupational level, and other positions of status in society (e.g., Lin, 2001; Beeghley, 2008). ASHE-ERIC Report (2004) explains, “The status attainment process provides one basis for identifying constructs that have sociological conceptual underpinnings” (p. 39). Higher education researchers, Stage and Hosler (2000), explain, “In general, status attainment models focus on relationships among parental education and income, family structure, and ultimate status as an adult mediated by educational achievements” (p. 178). Within higher education research, status attainment models have been used as a framework for studying student choice (e.g., Bateman & Spruill 1996; McDonough 1997; Stage & Hossler 1989); college attendance (Hossler, Braxton, & Coppersmith, 1989) and persistence in college (Tinto, 1986).

This study will use status attainment, supported by Blau and Duncan’s underpinning concepts, as the theoretical framework for comparing and examining the student profile characteristics of traditional residential and commuter students at a public, research-intensive, urban commuter university. Status attainment provides a basis for identifying the contributors to the students’ current status at the university. According to

Blau and Duncan (1967), status attainment is obtained through ascribed and achieved contributors; thus, each of the student profile characteristics will accordingly be viewed as either an ascribed or an achieved contributor. The following table displays the (direct and indirect) relationship between the status attainment components (ascribed and achieved) and the specific student profile characteristic:

**Table 1:
Relationship between Status Attainment Contributors and Student Profile Characteristics**

Status Attainment	Student Profile Characteristic Category	Student Profile Characteristic
Ascribed Contributors	Demographic	<ul style="list-style-type: none"> • Age • Gender • Ethnicity • SES Status • Parental Ed. Level • Residency
Achieved Contributors	Prematriculation (Precollege)	<ul style="list-style-type: none"> • HSGPA • SAT • ACT
	Matriculation (College)	<ul style="list-style-type: none"> • Cum. GPA • Enrollment Status • Cum. Grossed Units • Retention • Part. in Athletics • Academic Standing • Financial Aid

As shown in Table 1, achieved contributors apply to both prematriculation and matriculation student profile characteristics. Some of the student profile characteristics mirror the contributors in status attainment models. For example, the ascribed/demographic characteristic “parental education level” is incorporated in early status attainment models.

Purpose of the Study

Status attainment serves as an ideal theoretical framework for this study, especially considering the correlation between the attainment contributors (ascribed and achieved) and the student profile categories characteristic categories (specifically, demographic, prematriculation, and matriculation). The purpose of the study is to examine and compare the student profile characteristics between traditional residential and commuter students at a public, research-intensive, urban commuter university. Although this is a single-institution study, the goal of this study is to further develop a better understanding of traditionally aged students at a public, research-intensive, urban commuter university.

Summary

This review of literature has addressed the necessary background for this study. Student profile characteristics are an integral part of research pertaining to student issues and this chapter accordingly drew from an amalgam of literature addressing such areas. Although a considerable portion of the research addressed was specific to public, urban commuter universities, the literature review displayed areas in need of further research specific to these unique institutions. The literature review displayed the massive amount of work that has been built on the foundational works. Therefore, this study will contribute and build upon the existing empirical research addressing the commuter-versus-residential comparison.

CHAPTER 3

RESEARCH METHOD

Arthur Chickering's (1974) foundational comparison of residential and commuter students brought much-needed national attention to an important aspect of higher education. Since Chickering's seminal work, there has been an abundance of empirical studies addressing the comparison. However, as informed by the literature review, the majority of these empirical comparisons have been conducted at residential institutions or used a variety of institutions that were weighted more toward residential institutions (Dugan et al., 2008; Weissberg et al., 2003). Thus, there is need for further research that examines the residential-versus-commuter student comparison at commuter institutions. In addition, the national college student population continues to evolve by becoming more diverse across multiple dimensions (Pascarella & Terenzini, 2005). From both a researcher and practitioner perspective, it is essential to study the ever-changing student population, especially in regards to specific institutional types (Braxton & Hirschy, 2005; Pascarella & Terenzini, 2005). For these reasons, this study examined and compared the student profile characteristics of traditional (ages 17-24) residential and commuter students at a public, research-intensive, urban commuter university (see p.13 for definitions of the terms).

The primary purpose of this chapter is to describe the steps that were taken to conduct the study (Heppner & Heppner, 2004). This chapter is divided into five subsections. The first subsection provides a basic overview of the research design. The second subsection describes the data source, which primarily refers to the institution and student enrollment, and the third section provides additional institutional information.

The fourth subsection addresses the population used in the study. The fifth subsection provides a description of these data collection procedures and the type of institutional data drawn. These data collected embodied the student profile characteristics, which were categorized as demographic, prematriculation, and matriculation. Demographic characteristics referred to the following social statistics: Age, gender, ethnicity, socioeconomic status, parental education level, and residency (in-/out-of-state). Prematriculation characteristics referred to the following precollege scoring measures: High school grade point average [HSGPA] and precollege achievement test scores. Matriculation characteristics referred to student characteristics during college: Cumulative grade point average (GPA) (Fall '07 and Spring '08), enrollment status (full- or part-time), cumulative grossed units (after the academic year 2007-08), retention (Fall 2007 to Fall 2008), academic standing (freshman or sophomore standing after the academic year 2007-08), participation in athletics, and four levels of financial aid status (grants, scholarships, loans, and work study). The researcher derived the terms *demographic*, *prematriculation* and *matriculation* from previous studies (e.g., CCSC Report, 1980; Glynn, Sauer, & Miller, 2003; Hoover, 1991; Terenzini & Pascarella, 1978, 1980).

The final subsection in this chapter addresses the statistical analyses of these data. The researcher used discriminant function analysis (DISCRIM) to simultaneously examine the differences between the two student groups with respect to multiple demographic, prematriculation, and matriculation variables. Discriminant function analysis was chosen as the appropriate procedure because of its statistical sophistication to classify large amounts of variables into two (or more) distinguished groups.

Research Design

By using secondary data obtained from the institution, this study examined and compared the student profile characteristics of traditional commuter and residential students at a public, research-intensive, urban commuter university. The researcher compared the two student groups across demographic, prematriculation, and matriculation characteristics. These secondary data were drawn from four institutional databases.

Data Source

The institution of study was a large public, four-year, doctoral-granting university located in the western United States. The Carnegie Classification categorizes the institution as a research university with “high research activity” (Carnegie Foundation Website, 2010). The institution is a commuter institution with over 85% of the undergraduates commuting to campus. Despite an overall enrollment of approximately 28,000 students (Fall 2007), the on-campus residential facilities only accommodate approximately 2,000 students (Institutional Magazine, 2004; Institutional Website, 2008).

The Carnegie Classification specifies the institution as having a “high undergraduate enrollment” and classifies the undergraduate profile as “Medium full-time four-year, selective” with a “higher transfer-in” enrollment (Carnegie Foundation Website, 2010). Table 2 provides a snapshot of the Fall 2007 institutional student enrollment.

**Table 2:
Institutional Undergraduate Enrollment (Headcount) in Fall of 2007**

	Fall 2007
Undergraduate Enrollment	21,962 (78.5%)
Full-Time	15,677 (71.4%)
Part-Time	6,285 (28.6%)
Age 24 and Under	15,911 (72.5%)
Gender	
Female	12,204 (55.6%)
Male	9,758 (44.4%)
Residency	
State Resident	16,823 (76.6%)
Non-state resident (U.S.)	4,155 (18.9%)
International	984 (4.5%)
Race/Ethnicity	
Native American	225 (1.0%)
Asian	3,682 (16.8%)
African American	1,885 (8.6%)
Hispanic	2,840 (12.9%)
Caucasian	10,337 (47.1%)
International	865 (3.9%)
Unknown	2,128 (9.7%)
*Total Student Enrollment	27,988

*Total student enrollment includes undergraduate, graduate, and professional students (Institutional Website, 2010).

As noted above, the undergraduate enrollment is based on headcount instead of FTE during the Fall of 2007. As shown, the undergraduate student enrollment is overwhelmingly (over 71%) enrolled full-time in classes. The majority of the undergraduate students are 24 years of age or less (72.5%) and residents of the state (76.6%). The female-to-male ratios are approximately 55% to 45%. Further, the institution has an ethnically diverse undergraduate enrollment. There are approximately 47.1% Caucasians enrolled and 52.9% non-Caucasians, with 16.8% Asian, 12.9% Hispanic, 8.6% African American, 3.9% International, 1.0% Native American, and 9.7% Unknown.

The institution's main campus is centrally located in a large western city with the greater metropolitan population falling just under 2 million (U.S. Census Bureau, 2008). The institution does have two small satellite campuses in town and one small satellite campus located overseas. The institution's city is known for its diverse and transient population. The institution is the only large four-year, non-proprietary institution within the metropolitan area and southern region of the state. Despite its large size, the institution is relative young, having been established in the 1950s.

Understanding the Institution of Study

This area provides information regarding the institution of study. The first section addresses the campus living requirements for first-time freshmen to explore the notion of whether the residential freshman in the population were required to live on-campus. The second section addresses "the student experience" at the institution of study, which was derived from a National Survey of Student Engagement (NSSE). The third section reports a residential life satisfaction survey completed by residential students in the Spring of 2008.

Campus Living Requirements

Whether first-time freshman are required to live in a campus' residential halls or are given the choice of living preference (on- or off-campus) are specific to the individual institutional. At the institution of study, first-time freshman are theoretically required to live on-campus, but can apply for an exemption if they meet certain criteria. According to the Institutional Website (2010), freshman coming from a high school outside of the institution's County with the intention to enroll in more than six credits are required to live on-campus during their first year. "This regulation is meant to help smooth your

transition from high school to college” (Institutional Website, 2010, p. x). Yet, the website provides a follow-up link providing a “few exceptions.” The link leads to a list entitled, “Exceptions and Excuses,” which details the exceptions that allow students to qualify for exemption:

- Married
- A sophomore (having earned at least 24 credits)
- Not coming directly from high school (i.e., you graduated from high school at least one year before entering UNLV and have been living independently or have been serving in the military)
- A transfer student who has completed at least two full-time semesters at another university
- Going to be living with family or legal guardians in the Las Vegas area (Institutional Website, 2010)

A student can also be exempted by possessing,

- A medical issue certified by a physician and approved by Campus Housing after reasonable accommodations are made (e.g., room assignments, facilities, etc.)
- A financial hardship supported by a Free Application for Federal Student Aid form (FAFSA)
- Another documented, compelling, special circumstance (Institutional Website, 2010)

The website further explains that if a student qualifies for one or more of these categories, the student can submit a written request and relevant documentation to the residential offices. If office approval is granted, the student will receive a waiver. Unfortunately, the researcher was unable to obtain data addressing the acceptance rate of exemption request. Based on informal conversations with staff and students at the institution, however, the researcher received the impression that the waivers were frequently accepted. If this assumption regarding frequent exemption is accurate, the reason for the exemptions could be linked to the shortage of residential space on-campus. The residential halls can only house around 2,000 students when there are over 3,300 incoming freshman admitted yearly.

NSSE Student Experience Survey

As the secondary institutional data used for this study did not address student involvement and engagement, the National Survey of Student Engagement (NSSE) survey can provide some insight into the first-year freshman at the campus. In 2009, NSSE surveyed 710 randomly selected undergraduate students at the institution of study to explore topics that are “linked by previous research on student success in college.” This NSSE survey is conducted every three years and the institution participated in previous surveys conducted in 2003 and 2006.

This section is separated by NSSE learning outcomes and it presents some of the survey’s findings for first-year students at the institution of study. Some of the notable measures for “Enriching Educational Experiences” were as follows:

- During their first year, 16% of students participate in a learning community.
- Fifty-six percent (56%) of first-year students say they frequently have serious conversations with students who are different from themselves in terms of their religious, political, or personal beliefs.
- Sixty percent (60%) of first-year students frequently have serious conversations with those of a different race.
- Twenty-three percent (23%) of first-year students frequently engage in spiritually enhancing activities such as worship, meditation, or prayer (NSSE, 2009).

Some of the notable measures for “Active Learning” were as follows:

- Fifty-three percent (53%) of first-year students frequently discuss readings or ideas from coursework outside of class.
- Forty percent (40%) of first-year students frequently work with other students on projects in class and 33% work with peers on assignments outside of class.
- Ten percent (10%) of first-year students frequently participate in service-learning or community-based projects during a given year. Seventy-seven percent (77%) never took part in such activities (NSSE, 2009).

Some of the notable measures for “Campus Supportive Environment” were as follows:

- Forty-three percent (43%) of first-year students report that their peers are friendly, supportive, and help them feel as if they belong.
- Eighty percent (80%) of first-year students report a favorable image of this institution.
- Nine percent (9%) of first-year students spend more than 15 hours a week participating in co-curricular activities. 60% spend no time participating in co-curricular activities.
- Twenty-six percent (26%) of first-year students find the administrative personnel and offices helpful, considerate, and flexible.
- Sixty-five percent (65%) of first-year students feel that this institution has a substantial commitment to their academic success. Thirty-six percent (36%) feel well-supported by the institution regarding their social needs (NSSE, 2009).

In terms of “Faculty Engagement,” 28% of first-year students at least occasionally spend time with faculty members on activities other than coursework. Although these results were collected one year after the academic year for this study (2007-2008), the NSSE findings help portray a more comprehensive picture of the student body that followed the 2007-2008 first-year freshmen class.

Residential Student Survey

During the Spring semester of 2008, The Office of Residential Housing and Campus Life and the Educational Benchmark Institution (EBI) disseminated a residential student survey that received a response rate of over 60% of the residential students enrolled during the semester. The results of this survey contribute to the overall portrait of the residential students at the institution of study. The following survey results reporting residential student satisfaction was published on the institutional website:

- 97% felt accepted by other residents on their floor;
- 96% made new friends through their on-campus living community;
- 94% enhanced their ability to resolve personal conflicts;
- 91% enhanced their ability to study more effectively;
- 92% enhanced their overall learning experience;
- 97% were satisfied with the availability of their Resident Assistant;

- 96% were satisfied with the ability of their Resident Assistant to gain their respect;
- 97% were satisfied with their Resident Assistant's ability to enforce policies;
- 93% enhanced their ability to understand the consequence of alcohol use and abuse (Institutional website, 2010).

As shown above, the institution reported favorable results for their residential students' experiences on-campus. The two institutional surveys help portray an image of the institution's student experiences and residential student satisfaction. The NSSE and residential student survey data were not used for this study. The following section specifies the sample used for this study.

Sample

The sample of the study included traditional (specifically, ages 17-24 registered as an undergraduate) residential and commuter first-time freshmen students enrolled during the 2007-08 academic year. The sample was identified in the Fall 2007 semester data, but drawn after the academic year (2007-08). The entire sample did not persist through the complete academic year (2007-08). For the study, commuter students were defined as students not living in institutionally owned or operated housing on-campus (Jacoby & Girrell, 1981; Jacoby, 1989). Residential students were conversely defined as all students living in institutionally owned or operated housing on-campus. The academic year 2007-2008 was selected because it provided the most current comprehensive data set available at the institution.

There are several reasons the sample addressed students in their first year of college. First, comparing students during their first year to students during their second year could be considered an unlike comparison. In addition, students are more likely to enroll in general education classes during their first year. Further, more students are

undeclared (in academic major) during their first year than any other year. The focus on these dynamics helped equate the comparison between students, especially considering previous research suggests that academic major plays a significant role across many student success factors (e.g., Pascarella & Terenzini, 1991, 2005).

The total amount of participants were 2,639 first-time freshmen, with the residential student sample at 536 (20%) and the commuter sample at 2,103 (80%). Despite an uneven balance of commuter and residential students, the total sample provided adequate statistical power for the discriminant function analysis.

Variables and Institutional Databases

The student profile characteristics used for this study were categorized as demographic, prematriculation, and matriculation variables. Demographic characteristics referred to students' age, gender, ethnicity, socioeconomic status, parental education level, and residency (in-/out-of-state). Prematriculation (or precollege) characteristics referred to high school grade point average (HSGPA) and precollege achievement test scores, such as the American College Testing (ACT). Composite and the Scholastic Aptitude Test (SAT) Math/Verbal. The largest category, matriculation, referred to cumulative grade point average (GPA) (Fall 2007 and Spring 2008), enrollment status (part- or full-time), cumulative grossed units, academic standing (freshman or sophomore, measured after the 2007-08 academic year), retention (from Fall 2007-Fall 2008), participation in athletics, and financial aid (grants, scholarships, loans and work study).

Demographic Characteristics

Age. Residential students tend to be younger than commuter students because nontraditionally aged students typically live off-campus to better meet their non-academic obligations. In regards to student age and academic success, a few studies suggest that younger students are more likely to complete their degree than more mature students (e.g., Martin & Karmel, 2002; Martin, Maclachlan, & Karmel, 2001; Urban et al., 1999). Yet, the majority of current studies suggest that the relation between age and persistence is greatly contingent upon additional contributing variables; therefore, “little current research is available connecting age to persistence” (Peltier et al., 1999, p. 364). As this study’s data encompassed one academic year, this researcher used the students’ ages (ranging from 17 to 24) during the start of the Fall 2007 semester.

Gender. The majority of the existing literature regarding gender differences addresses enrollment, retention/persistence, and academic success. In 2007, the enrollment of full- and part-time students (undergraduate and graduate) at all public four-year degree-granting institutions was 57.2% female and 42.8% male (NCES Table 188, 2007). Current enrollment data display great gains for females, which is a trend that is projected to continue (Buchmann & Thomas, 2006).

Although researchers still face uncertainty with the relationship between gender and student success at urban public institutions, studies display patterns suggesting that a higher percentage of females complete their degrees than their male counterparts (e.g., Pascarella et al., 1983; Astin, Korn, & Green, 1987; Morgaman et al., 2002; Murtha, Blumberg, O'Dell, & Crook, 1989). In terms of persistence and gender differences, empirical studies also report conflicting findings. Yet, several studies in the 1990s show

that gender was predictive of persistence and that females are more likely to persist than males (e.g., Astin, 1993; Daily & Breegle, 1989; Galicki & McEwen, 1989; Lewallen, 1993; Peltier et al., 1999; York, Bollar, & Schoob, 1999). In a more recent study, Reason (2001) conducted a retention study using a large data set from ACT, Inc. and reported that gender was not found significant. The gender data used for this study originated from student registrar documents. For data entry, the researcher coded males as “0” and females as “1.”

Ethnicity. The majority of the existing literature on race/ethnicity focuses on the choice to attend college, college enrollment, student persistence/retention, and graduation rates. Studies suggest that ethnic minority students are less likely to choose to attend college (e.g., Freeman, 1997; Hossler & Stage, 1992; Ortiz, 1986). Non-Caucasian student postsecondary enrollment has dramatically increased over the last few decades and is expected to continue to increase (e.g., Keller, 2001; Woodard et al., 2000). Studies suggest that persistence and graduation rates are not consistent among different racial and ethnic groups (Nora, Barlow, & Crisp, 2005). Astin (1997), Murtaugh et al. (1999) and Peltier et al. (1999) found that Asian American and/or Caucasian students were most likely to be retained and the other racial groups were less likely to be retained.

For this study, the researcher used ethnicity data that originated from self-reported, institutional undergraduate admissions forms. For data analysis, the researcher created “dummy variables” for every ethnic category provided (Caucasian, Asian, Hispanic, African American, and Native American). For each specific ethnic category, the coding “1” was assigned to students of the ethnicity and “0” for all others.

Socioeconomic status. Some researchers consider students from low socioeconomic (SES) backgrounds to be the most disadvantaged groups of students entering college (Cabrera, Burkum, & La Nasa, 2005). Several longitudinal studies suggest that the likelihood of completing a degree is lower for students from lower SES backgrounds than for their middle- and upper-income counterparts (e.g., General Accounting Office Report, 1995; Nunez & Carroll, 1998; Urban et al., 1999). The socioeconomic status data used for this study was originated from self-reported, 2007 Free Application for Federal Student Aid (FAFSA) forms. The data reported the family income of the student. Yet, the entire student sample did not complete the FAFSA form.

Parental education level. The majority of the literature addressing parental education focuses on first-generation students, which is commonly defined as students whose parents have no postsecondary experience and their highest degree level is a high school diploma or less (e.g., Billson & Terry, 1982; Nunez & Carroll, 1998; Nunez & Cuccaro-Alamin, 1998; Terenzini et al., 1996). Empirical studies suggest that compared to students whose parents are college graduates, first-generation students are less likely to enroll in postsecondary institutions (e.g., Nunez & Carroll, 1998; Horn & Nunez, 2000; Choy, 2001; Terenzini et al., 1996), persist in four-year institutions and obtain a bachelor's degree by five years (e.g., Attinasi, 1989; Berkner, Horn, & Clune, 2000; Billson & Terry, 1982; Choy, 2000; Horn, 1998; Nunez & Cuccaro-Alamin, 1998; Richardson & Skinner, 1992; Warburton, Bugarin, & Nunez, 2001).

The parental education level used for this study originated from self-reported, 2007 Free Application for Federal Student Aid (FAFSA) forms, but the data for this variable were housed in the Office of Institutional Analysis and Planning. The parental

education levels were labeled by the institution in six different categories, ranging from middle/junior high school to college (bachelor's degree and beyond). The researcher combined the categories labeled "Other" and "Unknown," and did not include them in the DISCRM model. The categories that were used in the study were as follows: Middle school/junior high school (coded "1"), high school/secondary education (coded "2)," some college (less than bachelors) (coded "3"), and college (bachelor's degree or beyond) (coded "4"). The entire student sample did not report their parental education level.

Residency. Residency referred to the area from where the student migrated. For the institution of study, the undergraduate out-of-area students are expected to live on-campus unless they meet determined requirements, which were specified in detail in Chapter 3. For this study, the residency for the students who came from in-state were accordingly labeled "in-state" (coded "1") and the students who came from out-of-state were labeled as "out-of-state" (coded "0").

Prematriculation Characteristics

High school GPA and standardized tests (ACT and SAT). An extensive body of literature suggests that high school GPA and standardized test scores are strong predictors of student academic success at the postsecondary level (e.g., Astin et al., 1987; Fleming, 2002; Kim, 2002; Moffat, 1993; Ramist et al., 1993; Tross et al., 2000; Waugh et al., 1994; Wolfe & Johnson, 1995; Zheng et al., 2002). Several studies suggest that HSGPA is a better predictor of student academic success than standardized test scores (e.g., Geiser & Santelices, 2007; Hoffman, 2002; Hoffman & Lowitzki, 2005; Munro, 1981; Zheng et al., 2002). More specifically, a substantial amount of studies suggest that

high school grades are better predictors of student academic success in college than any other single factor (e.g., Astin & Oseguera, 2005; Camara & Echternacht, 2000; Fleming, 2002; Fleming & Garcia, 1998; Geiser & Santelices, 2007; Hoffman, 2002; Munro, 1981; Tross et al., 2000; Zheng et al., 2002). The prematriculation data used for this study were originally provided to the institution from the individual high schools and the educational testing center. These data were stored in a “student information system,” which was housed by the Office of Academic Assessment and the Office of Institutional Planning and Analysis.

Matriculation Characteristics

Cumulative college grade point average (GPA). The majority of the literature suggests that student residence status, whether commuter or residential, is not in and of itself an accurate predictor of student grade point average (e.g., Blimling, 1989, 1999; Bowman & Partin, 1993; Wolfe, 1993). Several studies suggest that for college students alike, college grade point average is an effective predictor of degree completion (Pascarella & Terenzini, 1991, 2005; Astin, 1993). For this study, the researcher used two cumulative GPA measures. The first measure was cumulative GPA, which was reported at the conclusion of the Fall 2007 semester. The second measure was cumulative GPA, which was reported at the conclusion of the Spring 2008 semester.

Enrollment status and cumulative grossed units. Enrollment status referred to whether the student attended college part- or full-time. Compared to their full-time peers, part-time students are more likely to be older, female, an ethnic minority, financially independent, a first-generation college student, and tend to lag in retention and graduation rates (U.S. Department of Education Report, 2007). At the institution of study, both

commuter and residential students can be enrolled either part-time or full-time. The enrollment status data obtained for this study was a list of the students labeled either “part-time” (coded “0”) or “full-time” (coded “1”). Cumulative grossed units refer to how many credits the student has accumulated. The researcher compared the cumulative credits the students received at the conclusion of the 2007-08 academic year between the two student groups.

Retention. Since the 1970s, very few issues in higher education have been studied more than student retention. Tinto (1983) found that “more students leave their college or university prior to degree completion than stay” (p. 1) and Barefoot (2004) estimated that less than 50% of national college students complete a baccalaureate degree within a five-year rate. Several studies suggest that residential students have distinct advantages that translate into better retention rates (e.g., Astin, 1975, 1977, 1993; Chickering, 1974; Pascarella & Terenzini, 1991; Tinto, 1993). For this study, student retention was measured as “Yes” (coded “1”) or “No” (coded “0”) for being retained from Fall 2007 to Fall 2008.

Participation in athletics. Some research links student-athletes and academic success addresses student-athlete graduation rates. The yearly publications of NCAA graduation rates using the Federal Graduate Rate (FGR) formula often show that student-athletes have slightly higher graduation rates than their non-athlete student peers (Ferris, Finster, & McDonald, 2004). A 2007 NCAA comprehensive study of the 2000-2001 Division-I freshmen cohort displayed that 63% of the student-athletes graduated within a six-year timeframe when compared to 62% of students graduated from the general student body (NCAA, 2007).

The participation in intercollegiate athletics variable provided the study a measure of social integration on campus, as other social integration data were unavailable. In addition, the researcher wanted to account for how many student-athletes contributed to the residential student sample. The study's "participation in athletics" variable referred to student-athletes who participated in the institution's NCAA Division-I program throughout the 2007-08 academic year. The students who participated in intercollegiate athletics were coded as "1" and all other students were coded as "0."

Financial aid. Since the 1990s, however, a growing amount of research has focused on financial aid's role on persistence and degree completion. Several empirical studies containing numerous well-controlled variables (e.g., academic abilities) indicate that financial aid enhances student persistence and graduation, especially among low-income students (e.g., Astin, 1993c; Cabrera, Stammen, & Hansen, 1990; Dynarski, 1999; Ishitani & DesJardins, 2002-2003; St. John, 1990; St. John, Kirshstein, & Noell, 1991; St. John & Masten, 1990; Wei & Horn, 2002). For this study, the financial aid variables address the amount of financial aid the student received during the entire academic year (2007-08). As expected, the entire sample did not apply for or accept one or more types of financial aid. Student aid was broken down into four categories: Grants, scholarships, loans, and work study. Grant aid included federal, state, and institutional funding; scholarships included federal, state, institutional, and private funding; loans included federal and private funding; and work study included federal, state, and institutional funding.

Institutional Databases

All of the student profile characteristics were obtained from four institutional databases. The stewards of the databases were from the Office of Academic Assessment, Office of Institutional Analysis and Planning (OIAP), Financial Aid Office, and the Office of Housing and Residential Life. As shown in Table 3, the vast majority of these data were obtained through an internal student information system utilized by the Office of Academic Assessment. Although it is not shown in Table 3, a few of the variables did overlap in the databases, but the “X” represents the source the researcher drew from for the given variable. This comprehensive institutional database was internally developed and used as a student data tracking system. The Financial Aid Office database obtained information necessary to their operations and the Office of Housing and Residential Life database was simply an “enrollment list” of those living in the on-campus residential housing during the academic year.

**Table 3:
Variables from Data Source**

	Data Source	Data Source	Data Source	Data Source
Variables	Academic Assessment	OIAP*	Financial Aid	Housing & Res.
Demographic				
Age	X			
Gender	X			
Ethnicity	X			
Socioeconomic Status			X	
Parental Education Level		X		
Residency	X			
Prematricualtion				
HSGPA	X			
SAT (Math/Verbal)	X			
ACT Composite	X			
Matriculation				
Cumulative GPA (Fall '07, Spring '08)	X			
Enrollment Status	X			
Cumulative Grossed Units	X			
Retention	X			
Academic Standing	X			
Athletics	X			
Financial Aid (Grants, Scholarships, Loans, and Work Study)			X	
Living Situation				X

*Office of Institutional Analysis and Planning

Data Collection Procedure

The researcher coordinated with an institutional administrator who possessed direct access to one of the data sources. This institutional administrator served as a liaison for the researcher and initially contacted the OIAP to determine the proper protocol for collecting these data. After the data stewards were identified, the researcher’s supervisor sent an official letter requesting specific data and the researcher followed-up with emails,

phone calls, and face-to-face meetings. After receiving clearance from the Institutional Review Board (IRB), the stewards of these data transmitted the requested institutional data to the liaison institutional administrator, who linked the databases by the student identification numbers and recoded these data for anonymity. After receiving these combined coded data, the researcher transferred it into Predictive Analytical Software (PASW) Version 17 (2009), a computer software program used for statistical analysis.

Ethical Consideration

Ethical consideration was given to the data collection and storage process. There was no subject participation involved beyond normal institutional requirements. The two main ethical considerations pertained to access to the information and the protection of the information. The researcher ensured that the process for obtaining access to the student information was compliant to The Family Educational Rights and Privacy Act of 1974 (FERPA), which was implemented to protect the privacy of student records. As mentioned previously, the data stewards sent these data to a designated institutional administrator. Despite the varying formats of these data, the administrator consolidated the database by student identification numbers (SID). The administrator then reassigned the SIDs to coded numbers to create a new identity set for further protection of the subjects. As a result, no student profile characteristics could be linked to an individual student.

After receiving these coded data, the researcher stored it on two password-protected computers and two flash drives, which remained in locked boxes and offices when not in use. The only two individuals that accessed these coded data were the researcher and the research supervisor. After completion of the study, all paper

containing confidential data were shredded. These electronic coded data will continue to be stored on two flash drives and will remain safely secured for a determined holding time.

Statistical Analysis

As indicated in the first chapter, this study addresses three research questions relating to comparing the student profile characteristics of traditional residential and commuter students at an urban commuter university. To examine which variables discriminated among the two student groups, a discriminant function analysis was employed and follow-up calculations (t-tests, cross tabulations, and chi-square analyses) were used as needed. This section first provides a general discussion on discriminate function analysis. The subsequent section examines the specific techniques used to analyze each research question.

Discriminant Function Analysis

In general, discriminant function analysis (DISCRIM) is a powerful statistical technique that allows the researcher to examine the differences between two (or more) groups with respect to multiple variables simultaneously (Klecka, 1985). For this study, the researcher examined the differences between two classifying groups, commuter and residential students, with respect to fifteen independent variables (or predictors). Along with the ability to “discriminate” between groups based on set characteristics, DISCRIM also allows the researcher to determine how well the characteristics discriminated and which characteristics are the most powerful discriminators (Klecka, 1985).

There are essentially three different types of discriminant function analyses (Tabachnick & Fidell, 1996), which are separated by two activities – interpretation and

classification (Klecka, 1985). Klecka (1985) defines classification as “the process by which a decision is made that a specific case ‘belongs to’ or ‘most closely resembles’ one particular group” (p. 42). Perhaps the most common type of classification function is the standard direct method discriminant function analysis, which was employed in this study. Within the direct method of discriminant function analysis, “all predictors enter the equations at once and each predictor is assigned only the unique association it has with groups. Variance shared among predictors contributes to the total relationship, but not to any one predictor” (Tabachnick & Fidell, 1996, p. 528). Thus, the purpose of standard direct DISCRIM, or classification function, is to find a linear combination of variables that maximizes the differences between groups (Fisher, 1936).

When considering using a DISCRIM, it is important to determine the sample size of each group’s population. The sample size of the smallest group only needs to exceed the number of predictor variables, but it is generally better to have a sample size at least five times the amount of predictor variables (Jain & Chandrasekaran, 1982). In addition, when evaluating the sample size, the definition of the population should also be considered (Huberty, 1994). Furthermore, the researcher should take note when the group sample sizes are unequal.

The inherent nature of classification functions assumes that the size of each group is equal, which translates into the classification probability being considered 50% (.5) to 50% (.5). Yet, this circumstance is not always practical or desirable. In this two-group study, the commuter student sample was much larger than the residential student sample. When referring to lopsided group sizes, Klecka (1985) explains that there is a “high probability that any given case [unit of analysis] belongs to group 1. Therefore, one

would want to classify it into group 2 only if the evidence was very strong that it belongs there” (p. 46). To address this dilemma, Klecka suggests “...adjusting the posterior probabilities to account for prior knowledge of probable group membership” (1985, p. 46). For this study, the researcher accordingly adjusted the prior probabilities for all classification analyses to .5 for both groups to achieve a conservative estimate of correct classification.

A standard direct discriminant function analysis was used for all three of the study’s research questions. In addition, the prior probabilities were adjusted for each classification function. After employing the DISCRM, the researcher used follow-up calculations to further examine the descriptive statistics. As the research questions were structured toward a particular student profile characteristic (demographic, prematriculation, and matriculation), the following section examines the specific techniques used to analyze each question.

Question #1: Demographic Variables

The first research question was, “What student demographic characteristics (specifically, age, gender, ethnicity, socioeconomic status, parental education level, and residency) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?” This question was examined by using PASW (Version 17, 2009) to conduct a standard direct DISCRIM that used age, gender, ethnicity, socioeconomic status, parental education level, and residency as independent predictor variables. The researcher employed a few follow-up calculations (t-tests, cross tabulations, and chi-square analyses) to further examine the descriptive statistics.

Question #2: Prematriculation Variables

The second research question was, “What student prematriculation characteristics (specifically, high school GPA, and standardized tests: ACT Composite and SAT Math/Verbal) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?” This question was examined by using PASW (Version 17, 2009) to conduct a standard direct DISCRIM that used HSGPA, ACT Composite, and SAT Math/Verbal as independent predictor variables. A few follow-up calculations (t-tests, cross tabulations, and chi-square analyses) were conducted to further examine the descriptive statistics.

Question #3: Matriculation Variables

The third research question was, “What student matriculation characteristics (specifically, cumulative GPA, enrollment status, cumulative grossed units, academic standing, retention, participation in athletics and financial aid: Grants, scholarships, loans, and work study) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?” This question was examined by using PASW (Version 17, 2009) to conduct a standard direct DISCRIM that used cumulative GPA, enrollment status, cumulative grossed units, retention, living situation, residency, and financial aid as independent predictor variables. A few follow-up calculations (t-tests, cross tabulations, and chi-square analyses) were conducted to further examine the descriptive statistics.

Summary

Although the residential-versus-commuter student comparison has been contemporaneous in higher education literature since the 1970s, there still is a need to

examine this comparison at public, research-intensive, urban commuter universities. In addition, the American student population continues to evolve and studying profile characteristics is an efficient vehicle for better understanding student groups. For these reasons, this study examined and compared the student profile characteristics of traditional residential and commuter students at a research-intensive, public urban commuter university. Using pre-existing institutional data, the researcher employed standard (direct) discriminant function analysis to examine how the determined independent predictor variables (student profile characteristics categorized as demographic, prematriculation, and matriculation) discriminated among the two student groups.

This chapter presented how each student profile characteristic is supported by previous empirical research, thus displaying the validity of the study's variables. This chapter also displayed the data source, population, research design, and other information relevant to the data and institution. As the primary purpose of this chapter was to outline the research methods for the study, the following chapter will report the results of the study.

CHAPTER 4

RESULTS

The purpose of this study was to compare the student profile characteristics, which were categorized as demographic, prematriculation, and matriculation, between traditional residential and commuter students at a public, research-intensive, urban commuter university (see p.13 for definitions of the terms). The researcher collected and consolidated secondary institutional data from four internal campus databases. The consolidated institutional data were imported into PASW statistical software (Version 17, 2009). The statistical calculation, discriminant function analysis (DISCRM), was employed to examine how the student profile characteristics best discriminated (or classified) between traditional residential and commuter students. The researcher utilized a single DISCRM model containing all student profile characteristics to analyze these data. The grouping variable (or discriminating variable) used in the DISCRM was “Living Situation (On- or Off-Campus).” Bivariate correlation analysis was run across all student profile characteristics and no multicollinearity among variables were present.

This chapter will first provide a description of the discriminant function analysis model. This chapter will then present the results of the analysis classified by each student profile characteristic categories and the three research questions. The chapter concludes with a summary of the results.

Discriminant Function Analysis Model

The researcher conducted a comprehensive DISCRM model that contained each variable within all three student profile characteristic categories. This model correctly classified 87.9% of the original grouped cases. Thus, it provided a strong classification

(or prediction) of the two group membership. Within the comprehensive model, commuter students were most accurately classified with 92.0% of the cases correct. The residential students classified 71.8% of the cases, which is also a favorable classification. The canonical correlation, which is “a measure of association which summarizes the degree of relatedness between the groups and the discriminant function analysis” (Klecka, 1985, p. 36), was high at .728. The function’s group centroids (means) displayed a good spread with the discriminating commuter variable at .754, and the residential variable at -1.478 (Commuter students were coded as “0” and residential students were coded as “1”). The Wilks’ Lambda, an intermediate statistic that provides a test of significance, showed statistically significant association between groups and predictors at .471 (.000). Considering the DISCRM’s strong correct classification (or prediction) of the two group membership (87.9%), the researcher was pleased with the model.

Demographic Characteristics

Demographic characteristics refer to social statistics, which are often used to strengthen social research designs (Hoover, 1991). The demographic characteristics used for this study were age, gender, ethnicity, socioeconomic status, parental education level, and residency (In- or Out-of-State). First, descriptive statistics are provided as an overview of the student characteristics in the institutional database, as well to provide a more in-depth look at the sample. The results of the discriminant function analysis will then be provided to show which demographic characteristics best discriminate between traditional residential and commuter students.

Descriptive Statistics

Descriptive statistics were presented in this section because they account for every case within the sample, thus providing an accurate student profile. DISCRM measures, on the other hand, essentially report only the cases that were classified. The population studied consisted of 2,639 first-time traditional freshmen enrolled in the 2007-2008 academic year. Of the 2,639 students, 20% (536 total) lived in the institutionally operated residential halls and 80% (2,103 total) lived off-campus.

Age. This study examined traditionally aged students, so the age range of the population was 17-24. The median age of the students was 18 and the mean was 18.41. When examining the population by living location, the mean for students living in the residential halls (536) was 18.31 (SD = .578) and the mean for students living off-campus (2,103) was 18.43 (SD = 1.105).

Gender. For the overall sample, 43% (1,138) of the students were male and 57% (1,501) were female. When examining the population by living location, 45% (241) of residential students (536) were male and 55% (295) were female. For commuter students (2,103), 43% (904) of the students were male and 57% (1199) were female. These data were entered into PASW coding males as "0" and females as "1."

Ethnicity. Based on self-reported data, the ethnicity of the student sample was 47.3% (1,248) Caucasian, 21.3% (561) Asian, 16.3% (430) Hispanic, 7.7% (203) African American, 7% (19) Native American, 1.9% (51) International and 4.8% (127) reported undisclosed or unknown. When examining the population by living location, the ethnicity of residential students (536) were 49.4% Caucasian, 20.5% Asian, 6.7% Hispanic, 11.8% African American, .9% Native American, 6.2% International, and 4.5% reported

undisclosed or unknown. For commuter students (2,103), 46.7% Caucasian, 21.5% Asian, 8.7% Hispanic, 6.7% African American, .7% Native American, .9% International, and 4.8% reported undisclosed or unknown.

The ethnicity data were originally entered (by the institution) using letters (such as “AS” for Asian). Since PASW 17 (2009) only recognizes numbers, the researcher created “dummy variables” for each ethnical category and coded entries “1” for specified ethnicity membership and “0” for all others. The undisclosed/unknown dummy variable was not included in the DISCRM to meet the proper degrees of freedom.

Socioeconomic status. Socioeconomic status was measured by the students’ family income. The median of family income, which is the best measure of central tendency when examining broad range of income entries, was \$24,626.00. Family income ranged from \$0 to \$996,248.00. When examining the population by living location, the median of family income for residential students (407) was \$53,928.00 and the median for commuter students (1,838) was \$14,000.50. Three hundred and ninety-four (394) students did not report their family income. The total sample for this variable does not equal the original sample size (2,639) because not all students completed the optional 2007 FAFSA form.

Parental education level. The parental education levels were coded by the institution in six different categories, but the researcher combined the “Other” and “Unknown” categories. For the overall sample, the students’ parents’ highest level of education obtained was reported as follows: Middle school/junior high school (coded “1”) (1.4%), high school/secondary education (coded “2”) (14.0%), some college (less than bachelors) (coded “3”) (20.3%), college (bachelor’s degree or beyond) (32.4%)

(coded “4”), and other/unknown (31.9%). When examining the parental degree level by living location, the residential students’ parental education level was reported as follows: Middle school/junior high school (.9%) (4), high school/secondary education (14.2%) (63), some college (less than bachelors) (24.0%) (107), college (bachelor’s degree or beyond) (59.6%) (265), and other/unknown (1.1%) (5). The commuter students’ parental education level was reported as follows: Middle school/junior high school (2.3%) (33), high school/secondary education (21.4%) (307), some college (less than bachelors) (29.9%) (428), college (bachelor’s degree or beyond) (41.2%) (590), and other/unknown (4.0%) (58). Further, 761 students did not report their parental education level. The other/unknown group was not included in the final discriminant function analysis. The total sample for this variable does not equal the original sample size (2,639) because not all students completed the optional 2007 FAFSA form.

Residency. Residency was measured as whether students were from the state of the institution (coded “1”) or from out-of-state (coded “0”). The residency for the overall sample (2,639) was as follows: 80% (2,110) of the students were in-state and 20% (529) of the population were out-of-state or out-of-country. When considering living location, the in-/out-of-state ratio for residential students was 28.9% (155) / 71.1% (381) and for commuter student, 93% (1,955) / 7% (148).

Research Question 1

The first research question was, “What student demographic characteristics (specifically, age, gender, ethnicity, socioeconomic status, parental education level, and residency) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?” As previously mentioned, this question

was analyzed using PASW 17 (2009) statistical software. The entire data set of 2,639 students was used in a discriminant function analysis with the housing variable (commuter/residential) set as the discriminant (grouping) variable across all variables. The results of the demographic portion of the discriminant function analysis are displayed in the following table.

**Table 4:
Demographic Predictors of Residential/Commuter Student Membership**

Demographic Characteristics	Standardized Canonical Discriminant Function Coefficients*	Structure Coefficients**	Predicted Membership
Residency	1.040	.816	Commuter
African American	-.110	-.181	Residential
Socioeconomic Status	-.069	-.179	Residential
Parental Ed. Level	-.082	-.154	Residential
Hispanic	.172	.132	Commuter
Native American	-.097	-.077	None
Age	.019	.033	None
Asian	.216	-.031	None
Gender	.198	.018	None
Caucasian	.124	.008	None

*Standardized coefficients suggest the relative importance of each predictor in classifying characteristics after controlling for the effects of the other predictors.

**Structure coefficients determine the correlation between each variable and the discriminant function.

Table 4 provides a statistical summary of the demographic characteristic predictors for group membership. The demographic characteristics are listed in the first column. The second column displays the standardized canonical discriminant function coefficients, which display the relative importance of each predictor in classifying characteristics after controlling for the effects of the other predictors (Klecka, 1985). Standardized canonical coefficients over .05, whether positive or negative, were considered to have favorable

strength of association. As shown in Table 4, all but one (Age: .019) of the standard canonical coefficients are greater than .05.

The third column in Table 4 displays the structure coefficients, which was the primary statistical measure to predict group membership used in this study. Structure coefficients simply suggest how closely the variable and the function are related (Klecka, 1985). The higher the structure coefficient, the greater the correlation the variable has with group membership (residential / commuter). A favorable structure coefficient was considered to be greater than or equal to point one ($\geq .1$). As shown in Table 4, residency received the highest structure coefficient and Caucasian (Ethnic Category) received the lowest structure coefficient.

The fourth column, Predicted Membership in Table 4 is helpful in a practical way, as it displays the specific group memberships that help answer research question #1. The five demographic characteristics that discriminated between residential and commuter students were Residency, African Americans (Ethnic Category), Socioeconomic Status, Parental Education Level, and Hispanics (Ethnic Category). These discriminating variables, which received group membership (Coding: 0 = Commuter, 1 = Residential), indicate the following:

- Students who come from in-state residency are more likely to be commuters (.816).
- African American students are more likely to be residential students (-.181), while Hispanic students are more likely to be commuter students (.132).
- The higher socioeconomic status of the student, the more likely the student is a residential student (-.179).
- Concurrently, the higher the level of the student's parental education, the more likely the student is a residential student (-.154).

As shown in Table 4, the remaining five demographic characteristics [Native American (Ethnic Category), Age, Asian (Ethnic Category), Gender, and Caucasian (Ethnic Category)] were not statistically significant in the discriminant function analysis.

Prematriculation Characteristics

Prematriculation characteristics refer to student precollege scholastic measures or “precollege schooling,” such as high school grade point average (HSGPA) and standardized tests: ACT Composite, SAT Math, and SAT Verbal. This section will first provide the descriptive statistics of the prematriculation characteristics. The results of the discriminant function analysis will subsequently be provided to show which demographic characteristics best discriminate between traditional residential and commuter students.

Descriptive Statistics

When examining the descriptive statistics, the prematriculation characteristics between commuter and residential students were very similar. The high school grade point average (HSGPA) was 3.26 for residential students (524) and 3.30 for commuter students (2,068) (.04 difference). The ACT Composite score mean was 21.74 for residential students (220) and 21.55 for commuter students (610) (.19 difference). The SAT Math score mean was 525.43 for residential students (376) and 517.62 for commuter students (1,315) (7.81 difference). The SAT Verbal score mean was 497.02 for residential students (376) and 505.83 for commuter students (1,315) (8.81 difference).

Research Question 2

The second research question was, “What student prematriculation characteristics (specifically, HSGPA, ACT Composite, SAT Math, and SAT Verbal) discriminate between traditional residential and commuter students at a public, research-intensive,

urban commuter university?” This question was analyzed using PASW 17 (2009) statistical software. The entire data set of 2,639 students was used in a discriminant function analysis with the housing variable (commuter / residential) set as the discriminant (grouping) variable across all variables. The results of the prematriculation portion of the discriminant function analysis are displayed Table 5.

**Table 5:
Prematriculation Predictors of Residential/Commuter Student Membership**

Prematriculation Characteristics	Standardized Canonical Discriminant Function Coefficients*	Structure Coefficient**	Predicted Membership
SAT Math	.309	.093	None
High School GPA	.200	.066	None
SAT Verbal	.098	.066	None
ACT Composite	.370	.038	None

*Standardized coefficients suggest the relative importance of each predictor in classifying characteristics after controlling for the effects of the other predictors.

**Structure coefficients determine the correlation between each variable and the discriminant function.

Table 5 provides a statistical summary of the prematriculation variable predictors for group membership. The prematriculation characteristics are listed in the first column. The second column displays the standardized canonical discriminant function coefficients, which were all greater than .05. The structure coefficients, which are all less than one, indicate that no prematriculation variables discriminate into group membership. The fourth column in Table 5, Predicted Membership, indicates that no prematriculation characteristics helped to predict group membership from the DISCRM.

Matriculation Characteristics

Matriculation characteristics refer to measurable student characteristics while attending college. The matriculation characteristics used for this study were cumulative grade point average (GPA), enrollment status, cumulative grossed units, retention, academic (class) standing, participation in athletics, grants, scholarships, loans, and work study. The following section presents the descriptive statistics and explains how these matriculation variables were defined and measured.

Descriptive Statistics

Cumulative grade point average. The cumulative grade point average (GPA) variables were measured at the end of each semester and labeled: “Cumulative GPA (Fall ’07)” and “Cumulative GPA (Spring ’08).” The cumulative grade point average for Fall 2007 was 2.86 for residential students and 2.71 for commuter students (.15 difference). The cumulative grade point average for Spring 2008 was 2.81 for residential students (1,788) and 2.74 for commuter students (536) (.07 difference).

Enrollment status. The enrollment status variable referred to whether a student was enrolled full- or part-time during the academic year (2007-08). Full-time students were coded as “1” and part-time students were coded as “0.” The overwhelming majority of both student groups were enrolled full-time. Ninety-five percent (95%) of residential students were enrolled full-time and 87% of commuter students were enrolled full-time.

Cumulative grossed units. The cumulative grossed units variable addressed the amount of credits the students accumulated at the completion of their first academic year (Fall 2007- Spring 2008). The cumulative grossed units mean was 28.40 (Median = 26)

for residential students (536) and 26.39 (Median = 29) for commuter students (1,788) (1.11 difference).

Retention. The retention variable referred to whether or not the students were retained from Fall 2007 to Fall 2008 and was measured either as “Yes” (coded “1”) or “No” (coded “0”). Out of the 2,639 students, 1,933 (73.2%) students were retained over the timeframe. Among the two student groups, 82% of residential students (440) and 71% of commuter students (1,493) were retained throughout the academic year and into Fall of 2008.

Academic standing. There were two academic (class) standing variables, “Freshman Standing” and “Sophomore Standing,” that were measured after the completion of the student’s first academic year (2007-2008). Sixty-six percent point four (66.4%) (356) of residential students obtained Freshman class standing and 63.3% (1,332) of commuter students obtained Freshman class standing. Further, 31.9% (171) of residential students obtained Sophomore class standing and 20.1% (423) of commuter students obtained Sophomore class standing. Further, 1.6% (33) commuter students and 1.7% (9) residential students were classified as non-degree seeking students.

Participation in athletics. The participation in athletics variable (“Athletes”) referred to the students who participated in the institution’s NCAA Division-I athletic programs during the academic year (2007-2008). A total of 83 students participated in intercollegiate athletics, representing 3.1% of the entire sample. When considering how many student-athletes represented each student group, 10.1% (54) of residential students were student-athletes and 1.4% (29) of commuter students were student-athletes. Fifty-five point four (55.4%) (46) of the athletes were Caucasian, 13.3% (11) were African

American, 9.6% (8) were Hispanic, 9.6% (8) were International, 8.4% (7) were Asian, 3.6% (3) were unknown, and 0% (0) were Native American. Among residential students, 61.1% (33) were Caucasian, 13.0% (7) were International, 13.0% (7) were African American, 7.4% (4) were Hispanic, 5.6% (3) were Asian, and 0% (0) were Native American. Among commuter students, 44.8% (13) were Caucasian, 13.8% (4) were Asian, 13.8% (4) were Hispanic, 13.8% (4) were African American, 3.4% (1) were International, 10.3% (3) were unknown, and 0% (0) were Native American.

Financial aid. The final four variables refer to the type of financial aid measures the students obtained in the 2007-08 academic year: Grants, scholarships, loans, and work study. The grants variable included federal, state, and institutional funding. Out of the 2,639 students in the sample, 2,245 (1,838 commuter students / 407 residential students) applied for and obtained one type (or a combination) of financial aid. The total sample for this variable does not equal the original sample size (2,639) because not all students completed the optional 2007 FAFSA form.

The mean amount of grants received by residential students was \$6,794.08 and the mean amount of grants received by commuter students was \$2,929.68. The scholarships variable included federal, state, institutional, and outside agency / private funding. The mean amount of scholarships awarded to residential students was \$5,342.84 and the mean amount of scholarships awarded to commuter students was \$6,131.88. The loans variable included federal and private alternative funding. The mean amount of loans borrowed for residential students was \$22,318.95 and the mean amount of loans borrowed for commuter students was \$2,862.88. The fourth financial aid measure, work study, included federal, state, and institutional funding. The mean amount of work study

received by residential students was \$5,558.30 and the mean amount of work study received by commuter students was \$381.66.

Research Question 3

The third research question was, “What student matriculation characteristics (specifically, cumulative GPA, enrollment status, cumulative grossed units, retention, academic standing, participation in athletics, and financial aid: Grants, scholarships, loans, and work study) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?” This question was analyzed using PASW 17 (2009) statistical software. The entire data set of 2,639 students was used in a discriminant function analysis with the housing variable (commuter / residential) set as the discriminant (grouping) variable across all variables. The results of the matriculation portion of the discriminant function analysis are displayed in Table 6.

**Table 6:
Matriculation Predictors of Residential/Commuter Student Membership**

Matriculation Characteristics	Standardized Canonical Discriminant Function Coefficients*	Structure Coefficients**	Predicted Membership
Work Study	.039	-.407	Residential
Loan	.001	-.363	Residential
Athletes	-.035	-.226	Residential
Grants	.081	-.163	Residential
Cum. Grossed Units	-.251	-.143	Residential
Scholarships	-.100	.095	None
Freshman Standing	.221	-.070	None
Cum. GPA (Spring '08)	.292	.064	None
Sophomore Standing	.414	.057	None
Retention (Fall '07-Fall '08)	-.099	-.055	None
Enrollment Status (Full/Part-Time)	-.092	-.039	None
Cum. GPA (Fall '07)	-.247	.015	None

*Standardized coefficients suggest the relative importance of each predictor in classifying characteristics after controlling for the effects of the other predictors.

**Structure coefficients determine the correlation between each variable and the discriminant function.

Table 6 provides a statistical summary for the matriculation characteristics that predicted group membership. The matriculation characteristics are listed in the first column. The second column displays the standardized canonical discriminant function coefficients, which were all greater than .05 except Enrollment Status (Full-/Part-Time) and Cumulative GPA (Fall '07). The structure coefficients, which are all lesser than one, indicate that no prematriculation variables discriminated into group membership.

The third column in Table 6 demonstrates the DISCRM structure coefficients. The demographic characteristics that discriminated between residential and commuter students were Work Study, Loan, Athletes, Grants, and Cumulative Grossed Units. The fourth column, Predicted Membership, displays the variables' specific group

membership. The five discriminating variables that predicted group membership indicate the following (Coding: 0 = Commuter, 1 = Residential):

- Students who receive higher amounts of institutional work study are more likely to be residential students (-.407).
- Students who obtain higher amounts of loans are more likely to be residential students (-.363).
- Students who participate in intercollegiate athletics are more likely to be residential students (-.226).
- Students who receive higher amounts of grants are more likely to be residential students (-.163).
- Students who accumulate more grossed units are more likely to be residential students (-.143).

As shown in Table 6, the remaining matriculation characteristics [Scholarships, Freshman Standing, Cumulative GPA (Spring '08), Sophomore Standing, Retention (Fall '07 to Fall '08), Enrollment Status (Full- and Part-Time), and Cumulative GPA (Fall '07)] were not statistically significant.

Summary

The purpose of this chapter was to present the results of the study. The demographic characteristics that discriminated between traditional residential and commuter students were Residency (commuter), African Americans (residential), Socioeconomic Status (residential), Parental Education Level (residential), and Hispanics (commuter). For the prematriculation characteristics, there were no variables that discriminated between the two student groups. The matriculation characteristics that discriminated between the two student groups were Work Study (residential), Loan (residential), Athletes (residential), Grants (residential), and Cumulative Grossed Units (residential). These results and findings are discussed in more detail in Chapter 5.

CHAPTER 5

DISCUSSION OF RESULTS

This study examined students' profile characteristics between traditional residential and commuter students at a large public, research-intensive, urban commuter university (see p.13 for definitions of the terms). The student profile characteristics were categorized as demographic, prematriculation, and matriculation. The focus of this chapter is to summarize the study and discuss the results and findings presented in Chapter 4. The discussion is separated by the three research questions. The implications of this study's findings for theory, practitioners, and future research will also be addressed.

Summary of Study

Higher education research addressing the commuter-versus-residential student comparison has been ever-present since Authur Chickering's pioneering study in 1974. As presented in Chapter 2, an extensive amount of research suggested that residential students showed significantly greater gains during college on a range of outcomes. Although some studies showed no significant differences in academic success outcomes and cognitive growth between the two student groups (e.g., Bowman & Partin, 1993; Giles-Gee, 1989; Pascarella et al., 1992; Pascarella, 1985a; Wolfe, 1993), much of the research to date supported residential students. After compiling the previous research, Pascarella and Terenzini (2005) reached the same conclusion. Yet, the majority of the research that suggested residential students have the advantage was conducted at residential institutions or used a variety of institutions that were weighted more toward residential institutions (Dugan et al., 2008; Weissberg et al., 2003). There consequently is

a dearth of research addressing the residential-versus-commuter comparison at commuter institutions, which suggests a need for this study.

National student enrollments continue to become more diverse (NCES, 2009) and public urban commuter institutions are more likely to enroll diverse student populations than other four-year institutions (e.g., ASHE-ERIC, 2004; El-Khawas, 1996; Jacoby & Garland, 2004). As national student enrollments continue to evolve, research is needed to examine these complex student characteristics, especially in regards to specific institutional type (e.g., Braxton & Hirschy, 2005; Pascarella & Terenzini, 2005). Examining student profile characteristics is an effective framework for better understanding a student population within an institution (CCSC Report, 1980).

The intent of this study was to compare the student profile characteristics of traditional residential and commuter students at a large a public, research-intensive, urban commuter university in a western state. Although student categories vary across higher education research, student profile characteristics for this study were categorized as demographic, prematriculation, and matriculation. The sociological concept, status attainment theory, served as the theoretical framework for this study. The research questions utilized for this study were as follows:

1. What student demographic characteristics (specifically, age, gender, ethnicity, socioeconomic status, parental education level, and residency) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?
2. What student prematriculation characteristics (specifically, HSGPA, ACT Composite, SAT Math, and SAT Verbal) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?
3. What student matriculation characteristics (specifically, cumulative GPA, enrollment status, cumulative grossed units, retention, academic standing, participation in athletics, and financial aid: Grants, scholarships, loans, and work study) discriminate between traditional residential and

commuter students at a public, research-intensive, urban commuter university?

To address each research question, the researcher employed a comprehensive discriminant function analysis model (DISCRM). DISCRM was chosen as the appropriate procedure because of its statistical sophistication to categorize large amounts of variables into two (or more) distinguished groups (Klecka, 1985). The purpose of a DISCRM is to find a linear combination of variables that maximizes the differences between groups (Fisher, 1936). Using secondary institutional data, the studied sample consisted of 2,639 first-time traditional freshmen enrolled in the 2007-2008 academic year. The results and findings of this study only represent the students in this sample at this particular institution.

Discussion of the Results

This study compared the student profile characteristics between commuter and residential students at a public, research-intensive urban commuter university. The study's results and findings showed that several student characteristics were statistically classified as either residential or commuter, thus designating group membership. This section discusses the meaning of the study's results and findings, while drawing from previous empirical research. The discussion is divided into three sections addressing each research question, paying specific attention to the student profile characteristics that predicted student group membership (residential versus commuter).

This section also includes the study's implications for practitioners. Braxton and Hirschy (2005) provide a simple recommendation for commuter institutions, "Administrators and individual faculty members should know the characteristics of

students enrolled at their college or university” (Braxton & Hirschy, 2005, p. 81). Thus, practitioners should conduct studies examining their students’ characteristics and consequently determine the implications of their findings. This serves as institution’s initial step toward finding solutions for determined student issues, like low retention rates or unavailability of a resource for a student subpopulation. The implications for practitioners are located following the discussion of the research questions.

Research Question 1: Demographic Characteristics (Ascribed Contributors)

The first research question was, “What student demographic characteristics (specifically, age, gender, ethnicity, socioeconomic status, parental education level, and residency) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?” Discriminant function analysis was used to investigate this question and the variables that discriminated between the student groups were two ethnicities, African American (residential) and Hispanic (commuter), as well as residency (out-of-state) (commuter), socioeconomic status (residential), and parental education level (residential).

Ethnicity. The results suggested that African American students are more likely to be residential students, while Hispanic students are more likely to be commuter students. Although these two subpopulations predicted different group membership, previous research suggested that the groups do share some background commonalities. Both African Americans and Hispanics are more likely to be first-generation students and come from lower socioeconomic families (Fischer, 2007; Washburton et al., 2001). Studies also suggested that these two ethnic groups face more alienation within the campus environment than their peers (Ancis et al., 2000, Fischer, 2007; Pascarella &

Terenzini, 1995, 2005; Sedlacek, 2004). Despite these commonalities, African Americans and Hispanics classified differently with their group membership.

Hispanics. The notion that Hispanic students are more likely to be commuter students has been previously supported in the literature. A common theme that underpins why Hispanic students are more likely to live off-campus revolves around family obligations. Hispanic students have exceptionally strong ties with their families, so they may feel more obligated to help their families survive economically (e.g., Fuertas & Sedlacek, 1990; Longerbeam, Sedlacek, & Alatorre, 2004; Lopez, 2009; Rendon & Taylor, 1989-1990). Hispanics are more likely to worry about finances than their non-Hispanic student peers. Compared to their non-Hispanic peers, Hispanics are more likely to work during college, work longer and to drop out of school because of financial reasons (e.g., Fuertas & Sedlacek, 1990; Longerbeam, Sedlacek, & Alatorre, 2004). Hispanic students also tend to face the deeply embedded non-financial family commitments, such as helping with tasks around the house or watching over siblings (e.g., Chacon, Cohen, & Strover, 1986; Lopez, 2009). Based on previous literature, these dynamics all contribute as to why Hispanic students are more likely to be commuter students.

Attending college is challenging in itself, but many can only imagine the additional challenges Hispanic students face relating to their family commitments. Family commitment is deeply embedded in the Hispanic culture and the Hispanic youth are often expected to contribute, both financially and non-financially, to the family. Many Hispanic students work full-time employment, attend to a family member (e.g., younger sibling or elderly family member), and manage to still take college courses to pursue their

personal goals. Moreover, Hispanic students still face the challenges presented to commuter students in general (e.g., transportation issues, less social integration on campus). These students do not have the convenience of living and working on-campus. One can assume that the Hispanic commuter students at the institution of study face unique challenges that threaten their collegiate path to academic success.

African Americans. The notion that African American students are more, or even less, likely to be residential students is not directly addressed in the literature. For this reason, this discussion section is guided by further examination of the African American student subpopulation. A follow-up chi-square analysis suggested that the African Americans did not predict residential group membership because of their participation in athletics, an assumption most often noted within the literature. More specifically, only 7 (out of 63) African American students participating in athletics resided on campus. When comparing this group between residential and commuter students, an analysis of variance (ANOVA) suggested that there were no significant relationships between residential and commuter African American students across the demographic characteristics (e.g., age, gender, socioeconomic status, parental education level, and residency). On the other hand, African American commuter students possessed higher means ($p < .05$) for all prematriculation characteristics (HSGPA, ACT Composite, and SAT Math/Verbal) than the residential African American students. When examining the matriculation characteristics, commuter African American students possessed higher means ($p < .05$) for cumulative GPA (Fall '07 and Spring '08) and cumulative units grossed (Fall '07 and Spring '08). Residential African American students also possessed higher means ($p < .05$) for acquiring grants, loans, and total amount of financial aid awards. Additional results

indicated that unlike African American commuter students, a chi-square analysis suggested that residential African American students are significantly ($p < .05$) more likely to be retained. Thus, the results of the comparison between African American residential and commuter students showed that the residential students received more aid but the commuter students possessed more achieved contributors (prematriculation and matriculation).

Residency. The demographic characteristic with the strongest group prediction was residency (in-state). The results of the DISCRM suggested that students who come from in-state are more likely to be commuter students. This finding came as no surprise, especially considering the descriptive statistics. For the residential-versus-commuter student comparison, the residency ratio for commuter students were 93% (1,955) from in-state and 7% (148) from out-of-state. Further, when examining the entire institutional enrollment, the vast majority of the students coming from in-state were from the same county as the institution (Institutional Website, 2010). What this means is that many of the in-state students most likely opted to live in their precollege living arrangement or find other off-campus housing. The literature reflects the concept that students who lived within a close proximity to the campus during precollege are more likely to be commuter students, especially at an urban commuter institution (ASHE-ERIC, 2004; Jacoby, 2000).

The dynamic that in-state students are more likely to commute to campus can be attributed to students continuing to live with their parental surrogates (hereafter referred to as “parents”) for the financial savings and overall convenience. This living situation often relieves the commuter students from paying rent. In addition, the students’ parents may continue to cover other living expenses, such as utilities (e.g., water, electricity, and

waste), laundry, food, television services, and other household services. Further, commuter students can avoid the costs associated with moving (e.g., packing, transportation, deposit) and do not have to undergo the inconveniences associated with moving to a different residence. Therefore, one can assume that the in-state students perceive living at-home as a being a more convenient and less expensive option.

Parental education level. The parental education level characteristic predicted group membership for residential students. The findings suggested that the higher the level of the parents' educational level, the more likely the student is a residential student. Parents with more higher education are more "familiar with the [college] experience and are better equipped to explain...how the college system is structured, how it works, and how the student can prepare for it" (Hossler, Schmit, & Vesper, 1999, p. 26). Students with parents who have more college education are more likely to live in the residential halls not only because their parents have more overall knowledge of college, but their parents are more likely to hold more value to "residentiality" (ASHE-ERIC, 2004; Laden, Milem, & Crowson, 2000). Rooted in sociological theory (Newcomb, 1943), residentiality is a student's physical and social isolation from his/her precollege life and the acceptance of a new and contrasting lifestyle during college (ASHE-ERIC, 2004; Kamens, 1977). Residentiality encompasses living in the residential halls and being engulfed in rich social communities (e.g., student clubs, Greek letter organizations, secret societies, social cliques) that are deeply engrained in many residential campuses.

During their upbringing, students have specific residentiality images of college accumulated from their parents, teachers, counselors, who attended a residential campus. Further, the images are also derived from television, movies, and music that portray a

residential and collegiate “party lifestyle” (ASHE-ERIC, 2004; Schroeder & Mable, 1994). Yet, studies showed that when students attend commuter institutions and their student experiences do not mirror their residentiality perception of college, the students are more likely to leave the institution (Laden et al., 2000; Nora et al., 1990). Aside from the research on residentiality, most of the research addressing parental level of education focused on first-generation students.

First-generation students. The findings in this study inversely suggested that first-generation students, which refer to students whose parents never attended a postsecondary institution, are more likely to be commuter students. This finding is strongly supported by the literature (e.g., Pike & Kuh, 2005; Lundberg et al., 2007; Richardson & Skinner, 1992; Terenzini et al., 1996). Lundberg et al. (2007) explains, “For many first-generation students, particularly those from low-income families or those who have families of their own, living on campus is not a possibility” (p. 59). Studies show that first-generation students are more likely to come from families with lower incomes (e.g., Engle & Tinto, 2008; Chen & Carrol, 2005; Terenzini et al., 1996; Warburton et al., 2001). First-generation students also represent a higher percentage of minorities, especially among African Americans and Hispanics, than the non-first-generation student population (Choy, 2001).

The notion that first-generation students are more likely to live off-campus can greatly be attributed to their financial situation. First-generation students are more likely than non-first-generation students to work more hours during college and have family members that are more financially dependent (e.g., Engle & Tinto, 2008; Inman & Mayes, 1999; Nunez & Cuccaro-Alamin, 1998). Further, first-generation students not

only lack information about college in general, but they also lack information regarding the availability of financial aid and how it can be accessed (Lundenberg et al., 2007). From a financial standpoint, the finding that first-generation students are more likely to be commuter students is logical. These students cannot afford to live on-campus, face obstacles pertaining to financial aid, and have to pursue employment to fund their college expenses.

First-generation students face other commitments relating to family culture that contribute to the likeliness of being commuter students. First-generation students perceive their families as being less supportive of their educational goals (e.g., Billson & Terry, 1982; Choy, 2001; Terenzini et al., 1996; York-Anderson & Bowman, 1991). First-generation students' parents are more likely to have a negative perception of higher education and often do not realize why their children should invest in college (London, 1992). London (1992) found that for many first-generation students, attending college was "breaking, not continuing, family tradition" (p. 63). What this means is if first-generation students are less likely to receive family support regarding their college aspirations. If the students do not receive this type of support, then they certainly will not obtain family support to live in the residential halls.

Socioeconomic status. The findings suggested that the higher the socioeconomic status of the student, the more likely the student is a residential student. This finding makes sense because the parents of mid-to-high socioeconomic status are able to afford to pay for their student to live on-campus. Further, parents of mid-to-high socioeconomic students are more likely to possess a higher level of education when compared to the parents of low socioeconomic students. Thus, these parents are more likely to have a

better understanding of higher education and be more supportive of their student living in the residential halls.

The findings for this study inversely suggested that the lower the socioeconomic status of the student, the more likely the student is a commuter student. Low SES students are more likely to be first-generation students (Engle & Tinto, 2008). Some researchers consider students from low SES backgrounds to be the most disadvantaged groups of students entering college (Cabrera et al., 2005). Without surprise, financial issues are at the forefront of low SES students' concerns. Low socioeconomic students ultimately lack financial resources, and as a result are more likely to live and work off-campus (Engle & Tinto, 2008). Several studies suggested that financial aid is not adequate to meet the needs of low SES students (Levine & Nidiffer, 1996; Paulsen & St. John, 2002). Yet, low SES students are more reluctant to apply for loans (Levine & Nidiffer, 1996; Paulsen & St. John, 2002). What this means is that from a financial standpoint, students from low SES are certainly more likely to live off-campus.

Further, studies show that the parents of low SES are less knowledgeable about college in general (e.g., Coleman, 1988; Dika & Singh, 2002; Flint, 1992, 1993; King, 1996; Pascarella et al., 2003). The families of low SES students and their social circles are likely to have less, first-hand higher education experience (McDonough, 1997). Thus, one can assume that like first-generation students, low SES students are less knowledgeable about the opportunities for and the details about living on-campus.

Implications for practitioners. The institution of study should explore avenues to better recruit and support the students who are less likely to live on-campus based on their demographic characteristics. According to the study, these students consisted of

Hispanics, first-generation students, low socioeconomic students, and in-state students. As displayed previously, the membership of three of the students groups (Hispanics, first-generation students, and low socioeconomic students) often overlapped and faced similar challenges during their college experience. One of the most common themes among these groups is that there is a knowledge gap for higher education. Vargas (2004) explains, “Low income, minority and first generation students are especially likely to lack specific types of ‘college knowledge’” (p. 7). This lack of knowledge about higher education can translate into a lack of understanding about residential hall living. These students also lack the knowledge of how to fund their higher education through various forms of financial aid (e.g., Vargas, 2004; Lundenberg et al., 2007; Engle & Tinto, 2008) and consequently, are unaware of how these funding opportunities can help students to live on-campus. Thus, the institution could increase its recruiting efforts by marketing specifically to the families of these student groups, providing general information regarding the residential halls and financial aid opportunities.

Research Question 2: Prematriculation Characteristics (Achieved Contributors)

The second research question was, “What student prematriculation characteristics (specifically, HSGPA, ACT Composite, SAT Math, and SAT Verbal) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?” A DISCRM was used to investigate this question. The results showed that no prematriculation characteristics predicted group membership. These prematriculation characteristics findings were not surprising, as the residential halls at the institution of study did not require higher admission standards than the institutional enrollment standards.

The finding that there were no differences regarding the precollege scholastic measures between the two groups could mean that the students did not choose whether to live on- or off-campus based solely on their previous academic success. Perhaps the students did not believe that their collegiate living location (on- or off-campus) would affect their academic success (positively or negatively) during their college experience. For this scenario, the students more strongly considered other factors when determining their collegiate living situation.

The finding that there were no differences regarding the precollege scholastic measures between the two groups may also pose implications for predicting the sample's academic success through their college experience. As mentioned in Chapter 2, a substantial body of research noted that high school grade point average and standardized tests tend to be strong predictors of students' academic success throughout the college experience (e.g., Astin et al., 1987; Fleming, 2002; Kim, 2002; Moffat, 1993; Ramist, Lewis et al., 1993; Tross et al., 2000; Waugh, Micceri, & Takalkar, 1994; Wolfe & Johnson, 1995; Zheng et al., 2002). Further, some studies suggested that high school grades are better predictors of collegiate academic success than any other single prematriculation or demographic factor (e.g., Geiser & Santelices, 2007; Hoffman, 2002; Munro, 1981; Tross et al., 2000; Zheng et al., 2002).

If these studies' implications regarding predicting collegiate academic success hold true, then the non-significant prematriculation findings for this study indicate that there will be little to no difference between the academic success of the two student groups. What this means is the commuter students at the institution will essentially attain the same level of academic success as their peer residential students throughout college,

and vice versa. Thus, the prematriculation characteristics findings could foreshadow the students' academic success during the later stages of their college experience.

Implications for practitioners. The finding that there were no differences between prematriculation characteristics provides some implications for practitioners. The institution could speculate that the students' precollege scholastic success does not influence whether the students live on- or off-campus. Thus, the institution can further explore why this characteristic does not influence the students' choice. The institution can also explore other factors that affect the students' choice of living situation.

Research Question 3: Matriculation Characteristics (Achieved Contributors)

The third research question was, "What student matriculation characteristics (specifically, cumulative GPA, enrollment status, cumulative credits grossed, retention, academic standing, participation in athletics, and financial aid: Grants, scholarships, loans, and work study) discriminate between traditional residential and commuter students at a public, research-intensive, urban commuter university?" Discriminant Function Analysis was used to investigate this question and the variables that discriminated between the student groups were work study (residential), loans (residential), grants (residential), participation in athletics (residential), and cumulative grossed credits (residential). Therefore, all five characteristics that did predict group membership, predicted for residential students, and no characteristics predicted commuter group membership.

Financial aid. The first three characteristics that predicted residential group membership were distinct types of financial aid: Work study, loans, and grants. This means that the residential students were more likely to participate in work study, obtain

loans, and/or receive grants. The previous literature examines the relationship between financial aid and retention/degree completion. Several empirical studies containing numerous well-controlled variables (e.g., academic abilities) indicated that financial aid enhances student retention and graduation, especially among low-income students (e.g., Astin, 1993c; Cabrera, Stampen, & Hansen, 1990; Dynarski, 1999; Ishitani & DesJardins, 2002-2003; St. John, 1990; St. John, Kirshstein, & Noell, 1991; St. John & Masten, 1990; Wei & Horn, 2002). Yet, estimating the effects of financial aid on student retention and degree completion is far from a straightforward procedure (Heller, 2003). There are numerous other economic and financial variables to be considered like parental and family assistance, personal funds, diverse combinations of aid forms (e.g., grants, scholarships, loans, and work study) and the source (e.g., personal, private company, institutional, state, and federal) (Heller, 2003; Pascarella & Terenzini, 2005). Even though three financial aid characteristics (work study, loans, and grants) predicted group membership for residential students, the literature suggests that these group memberships do not serve as a strong enough predictor to propose that the residential students at the institution are more likely to persist and graduate than the commuter students.

Work study. For this study, work study aid incorporated institution, state, and federal funding assistance. The finding that work study predicted group membership for residential students is logical simply because of the possibility of convenience for the residential students, as most of the institution's work study employers are located on-campus. For residential students, home and college are already synonymous, and working on-campus provides a third layer of campus association. In other words, residential students can live, attend college, and work on-campus. Work study programs are often

designed to provide flexible work hours and be considerate of the students' academic schedule. At the institution of study, work study can be distributed to the students through the same means as other financial aid forms, thus providing more convenience for students. Work study programs also provide additional opportunities for social engagement in the social and academic systems of the college or university (Pascarella & Terenzini, 1991, 2005). Many campuses place their work study students within their interest areas to help "students learn and earn at the same time" (Pascarella & Terenzini, 2005, p. 410).

The literature addressing work study and academic success measures is mixed. Several studies using nation-wide data from the National Postsecondary Student Aid Study of 1987 found that college work study, whether in various aid packages but controlling for the net gains of other aid, is negatively related to Fall semester to Spring semester retention (e.g., Kaltenbaugh et al., 1999; Paulsen & St. John, 2002; St. John & Starkey, 1995). Other studies suggested that there is a significant and positive effect between work study aid and student retention and degree completion (e.g., Adelman, 1999; Beeson & Wessel, 2002; Cofer & Somers, 1999; DesJardins et al., 2002; Heller, 2003; Kodama, 2002; St. John, 1990; St. John et al., 1991; Wilkie & Jones, 1994). Although the academic success implications for work study is mixed, work study can prevent students from accumulated debt through student loans.

Loans. For this study, the form of financial aid, loans, referred to the amount federal (subsidized and unsubsidized) and private alternative loans accumulated during the 2007-2008 academic year. Loans predicted group membership for residential students, meaning residential students were more likely to obtain loans. Although the

literature does not speak directly toward residential students taking out more loans, this group membership prediction is far from surprising. Since residential students are less likely to work full-time jobs (Astin, 1993), one could assume that the residential students at the institution were more likely to obtain loans to pay for their schooling and living costs instead of seeking employment. Conversely, the commuter students, who were less likely to obtain loans, probably chose employment in lieu of obtaining loans or simply possessed less living costs.

Across all institutional types, college students are continuing to borrow money at a faster rate. Between 1990 and 2000, the number of students obtaining loans also more than doubled, from 4.5 billion to 37.5 billion, and the total loan volume (real dollars) more than doubled from \$16.4 billion to \$37.5 billion (Berkner & Bobbitt, 2000; Center for Policy Analysis, 2001; Heller, 2001). Research examining undergraduate students and loans in terms of retention and degree completion has produced mixed results and implications. Several studies suggested that, controlling for other factors, there is a negative relation between borrowing and being retained into the next semester (e.g., Paulsen & St. John, 2002; Somers, 1996; St. John, Oescher, & Andrieu, 1992) or into the second year (e.g., Murdock, Nix-Mayer, & Tsui, 1995; Somers, 1996). Other studies suggested that, when controlling for other variables, the effect of loans are either positively related to retention and graduation or have no significant effect (e.g., Choy & Premo, 1996; Clotfelter, 1991; Cofer & Somers, 1999; Cucaro-Alamin & Choy, 1998; DesJardins et al., 1999; Horn & Berktold, 1998; King, 2002; St. John, 1990, 1991; St. John et al., 1991; Wei & Horn, 2002). Yet, the effects of borrowing may obscure the finding that when loans are found to have positive or no influence on retention and

graduation, the loans measured are often part of a financial aid package that also includes grants (e.g., Cofer & Somers, 1999; King, 2002, St. John, 1991; St. John et al., 1991; Wei & Horn, 2002).

Grants. For this study, grants were defined as need-based aid (unlike scholarships, which are merit based) from institutional, state, or federal sources. Grants predicted group membership for residential students, which means residential students were more likely to receive grant aid. Unfortunately, the research does not specifically address why residential students would be more likely to receive grant aid. However, the link between residential students and grant aid could be attributed to the students' (or family's) knowledge of college in general. As suggested by the parental education level finding, the parents of the residential students likely possessed more knowledge about higher education. As a result, the residential students may have obtained more information about to how to apply for and receive grant aid. This notion is further supported by a previous finding in this study. Despite the notion that residential students were more likely to possess higher socioeconomic status, the residential students were more likely to receive need-base aid. The most logical explanation for this disconnect is that the residential students possessed more knowledge regarding grant aid.

Although previous research does not specifically address a link between residential students and grants, research addressed the effects of grants on retention and degree completion. While the literature is not conclusive, several studies suggested that grant aid has a positive and significant (although modest) effect on retention and degree completion, even when controlling for demographic characteristics (e.g., Astin, 1993; Clotfelter, 1991; Cofer & Somers, 1999; DesJardins et al., 1999; Dynarski, 1999; Heller,

2003; Pascarella & Terenzini, 2005; St. John, 1990, 1991; St. John et al., 1991; U.S. General Accounting Office, 1995; Wei & Horn, 2002). Aside from academic success implications, grant aid is an advantage in the sense that, unlike loans, the funding does not have to be repaid.

Participation in athletics. The next characteristic that predicted group membership was a social engagement measure, participation in athletics, which predicted group membership for residential students. What this means is that first-year student-athletes at the institution were more likely to live on-campus than off-campus. Although little research specifically addresses whether or not student-athletes are more (or less) likely to live on-campus, the finding was no surprise because several practical reasons can explain why student-athletes live on-campus. For some athletic sports, the head coach required first-time freshmen to live on-campus. In addition, student-athletes may be more likely to live on-campus because of the proximity of the on-campus athletic facility locations. Many collegiate athletic teams host multiple practices each weekday during their competition season. Furthermore, many student-athletes at the institution received scholarships (partial or full), and some scholarship packages included living stipends that were applied to on-campus residential living. In addition, many of the scholarship packages included meal plans at the on-campus dining commons. With these dynamics in mind, it was no surprise that student-athletes were more likely to live on-campus.

Although previous research does not directly address why student-athletes are more likely to live on-campus, studies do address student-athletes and their academic success. Early research commonly showed that student-athletes underperformed in the classroom compared to their peers (e.g., Cross, 1973; Nyquist, 1979; Sack & Thiel,

1979). However, when controlling for precollege characteristics, other studies suggested that participation in intercollegiate athletics is positively associated with motivation toward retention, degree completion, graduation rate, gains in internal locus of attribution for success during the first year, and the overall college experience satisfaction (Astin, 1993; Pascarella et al., 1996). The yearly publications of NCAA graduation rates using the federal formula often showed that student-athletes have *slightly* higher graduation rates than their non-athlete student peers (Ferris, Finster, & McDonald, 2004). Using the Federal Graduate Rate (FGR) calculations, a 2007 NCAA comprehensive study of the 2000-2001 Division-I freshman cohort displayed that 63% of the student-athletes graduated within a six-year timeframe when compared to 62% of students graduated from the general student body (NCAA, 2007). Overall, the research addressing student-athletes and academic success is mixed. What this means is there is not enough evidence, drawing solely from the previous research, to suggest that the student-athletes at the institution have an academic advantage over their peers.

Cumulative grossed units. Cumulative grossed units was an academic success variable referring to the amount of course credits earned by students after the 2007-2008 academic year. The cumulative grossed units characteristic predicted group membership for residential students. This finding is intriguing considering that neither academic class standing (Freshman, Sophomore) did not predict any group membership. In addition, enrollment status (full-/part-time) did not predict group membership, which means commuter students were not more (or less) likely to enroll part-time, and residential students were not more (or less) likely to enroll full-time. The descriptive statistics showed that 95% of the residential students were enrolled full-time and 87% of the

commuter students were enrolled full-time throughout the academic year. These findings suggested that the residential students accumulated significantly more grossed credits without being more likely to advance their academic standing or without being more likely to be enrolled full-time.

What this finding means is that the residential students accumulated more credits but did not accumulate enough credits-toward-degree completion. The residential students possibly entered college with more Advanced Placement (AP) college credits and/or were enrolled in more credits during the academic year that did not contribute towards the advancement of their academic status (from Freshman to Sophomore). The latter could be a byproduct of the residential students' engagement on-campus, as residential students are more likely to be more involved on-campus than commuter students (e.g., Astin, 1993; Blimling, 1993, Pascarella & Terenzini, 1991, 2005). Many extracurricular on-campus programs (e.g., student government, leadership, diversity training, and academic competition) offer one-credit courses that contribute to the students' grossed credits. Therefore, the residential students' engagement on-campus may have resulted in them accumulated more credits without advancing their academic standing.

Aside from the engagement possibility, the notion that residential students were accumulating credits that do not contribute to their progression-toward degree could have been a result of a lack of academic advising. Several studies suggested, although some may possess confounding variables, that students in academic advising programs are more likely to persist and increase their chances to graduation (e.g., Beil, 1990; Elliott & Healy, 2001; Metzner, 1989; Peterson, Wagner, & Lamb, 2001; Seidman, 1991; Steele,

Kennedy, & Gordon, 1993; Trippi & Cheatham, 1991; Young, Backer, & Rogers, 1989). Further, low quality advising may be better than no advising at all (Metzner, 1989), and it is more beneficial for students to receive advising early in their college career than later (Campbell & Blakely, 1995, 1996). What this means is that these findings, which suggested more grossed units for residential students, may cause concern for the institution because these students could be taking classes that they simply do not need.

Academic success factors. When considering the results of this study, there is little evidence implying that residential students have an advantage over commuter students in terms of academic success. With the exception of the grossed units finding, there were no academic success measures (GPA, retention, and academic standing) that predicted group membership between the two student groups. For example, the cumulative GPA variables (Fall 2007, Spring 2008) did not predict group membership and the GPA variables' means between the groups were extremely similar. Although a substantial body of literature suggests considerable advantages for residential students in various academic success measures, the findings in this study do not support this notion. Therefore, excluding the cumulative grossed units finding, there was no significant academic success measures between the traditional commuter and residential students at the institution. Thus, one can presume that there are no academic advantages to being a residential student and no academic disadvantages to being a commuter student at the institution.

Implications for practitioners. The study suggested that, excluding cumulative grossed units, all of the academic success measures did not predict group membership. Thus, there are essentially no apparent academic success benefits for students living on-

or off-campus during their first year enrolled at the institution of study. This provides an opportunity for the institution to continue to focus its efforts on advancing and expanding residential programs geared toward providing their students more tools for college success. Further, as the financial aid characteristics were more utilized by the residential students, the institution should examine why the commuter students are not matching the use of the financial aid.

Implications for Theory

Although modified and expanded since the late 1960s, status attainment theory can generally be explained as a sociological concept that provides a basis for identifying the contributors to an individual's current status in society. Blau and Duncan's (1967) foundational model explains that an individual's current status (status attainment) is affected, both directly and indirectly, by ascribed and achieved status. Ascribed status is reached by the contributors that were assigned to the individual at birth or assumed involuntarily (e.g., parental status, parental education, and family income) (Blau & Duncan, 1967; Sewell, Haller, & Portes, 1969). Achieved status is reached through contributors that an individual pursues or accepts voluntarily (e.g., education and prior occupation) (Blau & Duncan, 1967; Lai, Lin, & Lueng, 1998).

For this study, status attainment provided a conceptual lens for identifying the contributors to the students' status at the university. According to Blau and Duncan's (1967) status attainment theory, the student's ascribed demographic characteristics (e.g., age, gender, ethnicity, socioeconomic status, parental education level, and residency), achieved prematriculation characteristics (e.g., high school GPA and standardized test scores), and achieved matriculation characteristics (e.g., cumulative GPA, enrollment

status, cumulative credits grossed, retention, academic standing, participation in athletics, and financial aid) are direct and indirect contributors to the student's current status at the institution. For example, findings from the literature suggests that first-generation students (ascribed) are more likely to struggle at standardized tests (achieved) and are less likely to be retained (achieved) in college, thus contributing to their status attainment (or lack of status) at the university.

Status attainment was chosen because it provided a conceptual lens to examine the results and findings as either ascribed or achieved contributors that may affect the current student status at the institution of study. When applying the student profile characteristics comparison of the two student groups (residential/commuter) through the theoretical framework, the contributors became less linear as student characteristics predicted (or did not predict) group membership across the ascribed and achieved contributors. For residential students, the ascribed contributors were African Americans (ethnic category), socioeconomic status (higher level), parental education level (higher level), and the achieved contributors were cumulative grossed units, work study (higher amount), grants (higher amount) and loans (higher amount). For commuter students, the ascribed contributors were Hispanics and residency (in-state) and there were no achieved contributors. Yet, a substantial amount of characteristics did not predict group membership, especially many achieved matriculation academic success measures [e.g., cumulative GPA (Fall 2007), cumulative GPA (Spring 2008), retention (Fall 2007 to Fall 2008), enrollment status (full-/part-time), and academic standing (freshman/sophomore standing)]. Considering the substantial amount of characteristics that did not predict

group membership (both ascribed and achieved), the researcher concluded that no particular student group possessed a considerably more favorable status attainment.

Within the field of higher education, the utilization of status attainment for student profile characteristics contribute to the greater portrait of students' collegiate path. Status attainment has been used as a theoretical framework for student choice of college (e.g., Bateman & Spurill, 1996; McDonough, 1997; Stage & Hossler, 1989) and retention through the college experience (Tinto, 1986). Yet, status attainment has not been applied to students between these two collegiate stages. This study helped expand the theory by examining the student profile characteristics within a more intermediate stage of students' collegiate path.

Limitations

There were several limitations to this study. A major limitation is that it is a single-institution study and the findings only represent this particular institution. Thus, broad generalizations regarding other institutions or student groups cannot be derived solely from these findings. Further, discriminant function analysis is a classification calculation and does not demonstrate causality.

Further, the student profile characteristics used for this research were limited to the characteristics available in the institutional databases. For instance, the researcher sought data pertaining to student involvement, a significant characteristic of student success identified in the literature, but the institution did not possess relevant data. The categorization of residential students was based on the listing of students who lived in the residential halls during both the Fall (2007) and Spring (2008) semesters. Therefore, there may have been students that changed living location (from on-campus to off-campus, or

vice versa) during the 2007-2008 academic year. Other limitations relate to the categorical grouping by the researcher during the final stages of data consolidation. The financial aid variables were grouped by types (grants, scholarships, loans, and work study), while each of these types received funding from multiple areas (e.g., federal, state, institutional, and/or private). Some of these funding areas are quite different and may have different outcomes for the recipient, especially between federal and private loans.

Future Research

This study sought to compare the student profile characteristics between traditional and residential students. Essentially any of the student profile characteristics examined could be the focal point of a comprehensive study. As student profile characteristics inherently cover breadth, future research is needed to address the depth. With these dynamics in mind, a few opportunities for future research emerged through the inquiry. First, given the finding that African Americans are more likely to live on-campus, one could further investigate why a statistically significant amount of this subpopulation chose to be residential students, especially considering this connection was not directly addressed in the literature. Similarly, one may wish to examine why the cumulative grossed units predicted group membership for residential students, while the academic standing (Freshman or Sophomore status) and enrollment status (full-/part-time) did not predict group membership.

As student retention continues to be frequently researched topic and a common measure for assessment, this study's data could be restructured into a retention model. When constructing a discriminant function analysis model, retention could be used as the

discriminating variable instead of housing, which would become a variable. The DISCRM would examine which characteristics predicted group membership (retained/not retained).

As this study addressed first-time freshman, it would be insightful to repeat the study examining the same students each academic year leading up to their fourth academic year (2007-08, 2008-09, 2009-10, and 2010-11) or beyond. It would be insightful to examine if more of the matriculation characteristics would predict group membership or even change group membership as the students proceeded (or failed to persist) through their college experience.

As mentioned earlier, this was a single-institution study that only represented the sample of students. Thus, one should be cautious in generalizing the results to other institutions. To reach more holistic picture of commuter institutions, researchers at other institutions can build on this study of student profile characteristics. The more institutions that participate, the more likely an accurate picture the research will be able to portray of commuter institutions and their students.

Summary

The residential-versus-commuter student comparison has been contemporaneous in higher education research since Arthur Chickering's longitudinal study in 1974. The majority of the previous research addressing the comparison suggested considerable advantages for residential students on a range of outcomes. However, the majority of these empirical comparisons were conducted at residential institutions or used a variety of institutions that were weighted more toward residential institutions (Dugan et al., 2008; Weissberg et al., 2003). Therefore, there was a need for further empirical research

comparing traditional residential and commuter students at a commuter institution. This study accordingly compared the student profile characteristics categorized as demographic, prematriculation, and matriculation between traditional residential and commuter students at a public, research-intensive, urban commuter university. The researcher used status attainment as the theoretical framework for this comparative study. By using secondary institutional data drawn from four different databases, the researcher employed a comprehensive discriminant function analysis model to examine how student profile characteristics best discriminated (classified) between the two student groups.

This study contributed to the residential-versus-commuter student comparison empirical research. Compared to their residential student peers, commuter students were more likely to be Hispanic and were more likely to be in-state students. On the other hand, compared to their commuter student peers, residential students were more likely to be African American, possess a higher socioeconomic status, have parents with a higher level of education, accumulate more grossed credits, and use higher amounts of financial aid in the forms of work study, grants, and loans. There were no prematriculation characteristic differences between the two student groups. When comparing the academic success measures, there were essentially no difference between the residential and commuter students, as GPA, retention, and academic standing did not receive group membership. The only academic success measure that classified between the two groups was grossed credits accumulated. This study accordingly suggested that residential students at this commuter institution do not have an advantage pertaining to academic success, which diverges from the greater body of previous research.

As national student enrollments continue to evolve and commuter institutions continue to house more diverse student populations, additional research is needed to examine these evolving multifaceted student characteristics. By examining student profile characteristics, this study constructed a comprehensive snapshot of a student population that provided several implications for practitioners and future researchers. This study's findings suggested that aside from a few demographic characteristics and financial aid implications, there were few differences that separated the traditional residential and commuter students at the public, research-intensive, urban commuter university.

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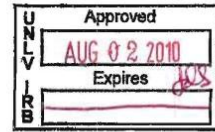
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Social/Behavioral IRB – Exempt Review Deemed Exempt

DATE: August 16, 2010

TO: Dr. Vicki Rosser, Educational Leadership

FROM: Office of Research Integrity – Human Subjects

RE: Notification of IRB Action by Dr. Ramona Denby Brinson, Chair *Rd/RL*
 Protocol Title: Comparing the Student Profile Characteristics Between Traditional Residential and Commuter Students at a Public, Research-Intensive, Urban Commuter University
 Protocol # 1006-3500

This memorandum is notification that the project referenced above has been reviewed by the UNLV Social/Behavioral Institutional Review Board (IRB) as indicated in Federal regulatory statutes 45CFR46.

The protocol has been reviewed and deemed exempt from IRB review. It is not in need of further review or approval by the IRB.

Any changes to the exempt protocol may cause this project to require a different level of IRB review. Should any changes need to be made, please submit a **Modification Form**.

If you have questions or require any assistance, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 895-2794.

VITA

Graduate College
University of Nevada, Las Vegas

Dan Gianoutsos

Degrees:

Bachelor of Arts, History, 2005
California State University, Bakersfield

Master of Public Administration, 2006
California State University, Bakersfield

Special Honors and Awards:

Master of Public Administration Outstanding Student of the Year Award, 2006
President's Award, 2006

Dissertation Title: "Comparing the Student Profile Characteristics Between Traditional Residential and Commuter Students at a Public, Research-Intensive Urban Commuter University"

Dissertation Examination Committee:

Chairperson, Vicki Rosser, Ph.D.
Committee Member, Mario Martinez, Ph.D.
Committee Member, Bob Ackerman, Ed.D.
Graduate Faculty Representative, Angelina Hill, Ph.D.