

Predicting Academic Success among First-Year, First Generation Students

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(ABSTRACT)

Due to immigration the non-Hispanic White population continues to decrease and the population continues to change in regard to the ethnic and racial make-up. As these demographic changes take place higher education institutions will face increasing pressure from stakeholders to create environments that facilitate degree completion among mounting numbers of populations who are at risk in terms of academic success.

First generation status denotes one group of students who are at risk in terms of persistence towards a bachelor's degree. The purpose of this study was to examine what factors predict the academic success of first year, full-time first generation students. Furthermore, this study examined whether there is a relationship between race, gender, financial need, and language ability and factors used to predict the academic success of first generation students.

Factors were defined as variables measured by the 2002 Your First College Year Survey (YFCY) data (HERI, 2004a). Factors fell into five main areas: Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort (Pascarella & Terenzini, 1991).

The study was based on secondary analysis of the 2002 YFCY data provided by the Higher Education Research Institute at the University of California, Los Angeles. A combination of descriptive statistics, factor analysis, and logistic regression was used for this study.

Findings revealed there are significant differences between academically more successful FGs and FGs who are academically less successful in relation to three factors: Institutional Environment, Student Effort, and Agents of Socialization. FGs are more likely to experience academic success in regard to variables associated with the factor Institutional Environment. There is a greater likelihood FGs will be academically less successful in relation to variables associated with the factors Student Effort and Agents of Socialization. When considering demographic variables in relation to the three significant institutional factors, FGs who are Asian American are more likely to experience academic success. Alternatively, FGs have greater odds of being academically less successful if they are male, African American, Mexican American, and non-native speakers of English.

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Chapter One

Introduction

Over 9,000,000 individuals immigrated to the United States between 1991-2000 (United States Citizenship and Immigration Services, 2002). Due to this influx, nearly one-third of the current U.S. population growth is attributed to immigration. Furthermore, almost 86% of the population growth through the year 2050 may be due to the effects of post-1992 net immigration (United States [U.S.] Census Bureau, 2001a).

Immigration is expected to bring about significant demographic changes to the U.S. population (Bureau of Labor Statistics, 2002; U.S. Census Bureau, 1996; U.S. Census Bureau, 2001a). Changes in the racial and ethnic composition of the U.S. citizenry, as well as the age group in which these changes are expected to take place, are major concerns for state agencies (U.S. Census Bureau, 1996; Western Interstate Commission for Higher Education [WICHE], 2003). In particular, educational institutions will be asked by various stakeholders to meet the needs of a student body that is considerably different than the one currently served (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001; Lowell & Suro, 2002).

Immigration is expected to alter the proportion of racial and ethnic groups that comprise the U.S. population. By 2050, non-Hispanic Whites are expected to represent a smaller percent of U.S. citizens falling from their current status as 74% of the population to 53% (U.S. Census Bureau, 1996). The declining number of Whites will be replaced by increasing numbers of minority groups (U.S. Census Bureau, 2001a).

Minority growth (i.e. – populations excluding non-Hispanic Whites) projected to take place over the next decade is attributed to an influx of immigrants who are predominantly from non-European countries (U.S. Census Bureau, 2001a). The leading

countries of birth of the foreign-born population in 2000 were Mexico, the Philippines, India, China, Cuba, El Salvador, Vietnam, and South Korea (Bureau of Labor Statistics, 2002).

Looking at the country of origin of the foreign-born population, it is evident the largest growth in minority populations will be among Hispanics and Asians. Growth rates in these two groups are expected to exceed 2% annually until 2030 (U.S. Census Bureau, 1996). Hispanics will add the largest number of people to the population every year until 2050. Projections call for them to add more every year to the U.S. population after 2020 than all other racial/ethnic groups combined. Based on these projections, Hispanics are expected to become the second largest racial/ethnic group behind Whites in the U.S. by 2020 (U.S. Census Bureau, 1996).

The distribution of immigrants according to age will have considerable implications for certain groups within the U.S. minority population. The greatest changes will take place among minorities who are 24 years of age and under (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001; Lowell & Suro, 2002). By the year 2030, non-Hispanic Whites will comprise less than half of the U.S. population under age 18 (U.S. Census Bureau, 1996).

Demographic changes attributed to immigration will lead to increased minority populations in school systems in America. As more newcomers enter the U.S. education system, K-12 schools will need to make sure the needs of increasing numbers of minority students are met. Postsecondary institutions will need to accommodate greater numbers of minorities as these students move through the educational pipeline (U.S. Census Bureau, 2001b; WICHE, 2003).

Children whose parents are foreign-born are expected to represent over one-half of the growth among school-aged individuals between 1990 and 2010 (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001). Recent census data point to the fact that among school-aged children 20% have at least one foreign-born parent. These figures include the 5% of elementary and high school students who are themselves foreign born. When considering Asian minors, 88% have a foreign born parent. Among the Hispanic population, 65% have a foreign-born parent (U.S. Census Bureau, 2001b).

As more newcomers matriculate, high school graduation rates among minority groups are expected to change. Every state, with the exception of Hawaii, can expect to experience a significant increase in Hispanic graduates. Asian/Pacific Islanders are also expected to graduate in increasing numbers (WICHE, 2003).

By the year 2013, Hispanic high school students are expected to represent one-fifth of the graduating class. Growth in the number of Hispanic high school graduates represents an increase of roughly 11%, from an average of 9% in 1993-94 to 20% of the graduates in 2013-14. Asian and Pacific Islanders will also increase their share among graduates, making up 7% of the graduating class for 2013-14. Non-Hispanic Whites will represent a smaller share of high school graduates, dropping from 72.4% to 58% (WICHE, 2003).

Demographic shifts in the population due to immigration will also affect colleges and universities. Nearly 1.5 million Hispanics have enrolled in American colleges since 1980. College going rates among Hispanics have led to a tripling in enrollment among this group during the period of 1980 to the present day (Foster, 2004). In addition, immigration has played a part in the college enrollment among Asians. Their numbers

more than tripled during the 20 year time period between 1980 and 2000 (American Council on Higher Education, 2003).

The influx of immigrants has significant implications for higher education institutions for two major reasons. The first has to do with the positive contributions immigrants can make to the U.S. economy if they receive a postsecondary education (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001; Institute for Higher Education Policy and Scholarship America, 2004; Lowell & Suro, 2002; Vernez & Abrahamse, 1996). Second, colleges and universities will need to become increasingly concerned with the changing demographic population and the progress those individuals make to degree completion. Positive contributions associated with immigration are more likely to be realized if a bachelor's degree is earned (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001; Murtaugh, Burns & Schuster, 1999; National Center for Public Policy and Higher Education, 2004; Vernez & Abrahamse, 1996).

Overall, immigration is a significant factor in economic viability. Immigrants played an important role in the 1996-2000 labor-force expansion. Foreign-born workers constituted 48.6% of the total labor force increase. Among minority groups, Asians and Hispanics accounted for the largest growth in the labor force (Bureau of Labor Statistics, 2002).

Positive contributions to the economy made by immigration can be counterbalanced by newcomers who lack formal education (Hagy & Staniec, 2001; Lowell & Suro, 2002; Vernez & Abrahamse, 1996). Individuals who lack education discover they are qualified for a limited number of jobs and as a result find themselves living in poverty. Lack of postsecondary education creates a variety of economic and

social problems (Hagy & Staniec, 2001; Lowell & Suro, 2002; Vernez & Abrahamse, 1996).

Therefore, academic success and degree completion will continue to be a critical factor in determining whether immigrants experience upward economic mobility (Lowell & Suro, 2002). Economic gains are directly related to the level of educational attainment (Institute for Higher Education Policy and Scholarship America, 2004; National Center for Public Policy and Higher Education, 2004).

Economic benefits are more likely to be realized if a person earns a bachelor's degree (Institute for Higher Education Policy and Scholarship America, 2004; National Center for Public Policy and Higher Education, 2004). The median annual salary of an individual with a bachelor's degree is \$46,969. A person with a bachelor's degree earns roughly \$15,000 more in annual income compared to someone whose highest degree earned is a high school diploma (Institute for Higher Education Policy and Scholarship America, 2004).

Increased earning capacity from a postsecondary education benefits the individuals. Such capacity also benefits local communities, states, and the federal government (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001). The degree of academic success experienced by recent immigrants directly affects state economies (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001; Institute for Higher Education Policy and Scholarship America, 2004; National Center for Public Policy and Higher Education, 2004).

Benefits to state economies are incurred through several compounding factors derived from an educated population whose members have obtained at least bachelor's degree (Institute for Higher Education Policy and Scholarship America, 2004). For

instance, college graduates earn higher salaries. Increased personal income translates into increased tax revenue for state governments (Carey, 2004; Institute for Higher Education Policy and Scholarship America, 2004; National Center for Public Policy and Higher Education, 2004).

A college degree also qualifies an individual for a wider variety of jobs and/or careers. Degree attainment results in lower unemployment rates. Individuals who are employed rely less on public assistance programs supported by tax dollars and state agencies (Institute for Higher Education Policy and Scholarship America, 2004).

Four-year postsecondary institutions are primarily responsible for educating citizens who obtain a bachelor's degree and enter the labor market (National Center for Public Policy and Higher Education, 2004). Therefore, these institutions will need to become increasingly concerned with the proportion of their enrollment made up of foreign born students or students whose parents are foreign born (WICHE, 2003).

Likewise, academic success experienced by newcomers has far reaching implications for state governments, state agencies, and tax payers (Institute for Higher Education Policy and Scholarship America, 2004). Postsecondary institutions, in turn, are growing increasingly concerned with students who enroll and do not obtain a degree (National Center for Public Policy and Higher Education, 2004).

Disparities in graduation rates that already exist in the U.S. higher education system will be even more confounded by several factors when considering newcomers. Recent immigrants and their children are more likely to have characteristics that impede the educational process and pose significant problems to academic success during college (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001). Characteristics include race,

gender, English language abilities, financial need, and level of education received by a parent.

Populations At Risk For Academic Success

Subgroups within the college population share personal characteristics that affect their academic success and likelihood of obtaining an advanced degree (Tinto, 1993). Race (Berger & Braxton, 1998; Murtaugh, Burns & Schuster, 1999), gender (Leppel, 2002; Ting & Robinson, 1998), language ability (Kiang, 1992), financial need (Somers, Woodhouse, & Cofer, 2004), and level of education received by a parent (Vernez & Abrahamse, 1996) are characteristics that can influence a student's academic success.

Currently, among first-time, full-time students who enroll in college, only six out of every ten obtain a bachelor's degree within a six year period (Carey, 2004). Degree attainment is even lower for minority populations who enroll in college in the U.S. Blacks, Hispanics, and American Indians are at a higher risk for withdrawing from college and not completing their degree than their White peers (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001; Murtaugh, Burns & Schuster, 1999; National Center for Public Policy and Higher Education, 2004).

Racial disparities are also evident when examining the rate at which degrees are obtained. For example, the six-year graduation rate is 63% for all students enrolled. However, only 47% of Hispanics complete a four-year degree within a six year period. Likewise, the degree completion rate within a six-year period for African Americans is 46% (Carey, 2004).

Racial and ethnic characteristics can have a confounding influence on integration to college (Murtaugh, Burns & Schuster, 1999). Race impacts satisfaction with the

college environment and subsequently impacts a student's decision to re-enroll (Berger & Braxton, 1998).

Many minority students fail to establish a strong connection to the university. For instance, minority students are less likely to become involved in the decision making process of the institution. They are also less likely to form meaningful relationships with peers. Lack of involvement leads to dissatisfaction with the college experience and impacts minority students' academic success (Berger & Braxton, 1998; Murtaugh, Burns & Schuster, 1999).

Gender also can have a significant influence on students' academic success (Leppel, 2002; Ting & Robinson, 1998). For instance, females may have different priorities (based on competing demands for their time) that influence their academic performance (Leppel, 2002). Males and females may be socialized to the college environment differently because of inequities in the system and this impacts student achievement (Ting & Robinson, 1998). Gender negatively impacts academic success among women who are not socially integrated and who have external commitments that compete with academic demands (Leppel, 2002).

English speaking ability among some groups of immigrant students is associated with adjustment issues. English proficiency can deter individuals from enrolling in college (Vernez & Abrahamsen, 1996). Those who do enroll may struggle academically because language barriers prevent them from understanding lectures (Kiang, 1992). In addition, language barriers and associated cultural differences initially affect a student's ability to learn new material (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001; Vernez & Abrahamse, 1996). These adjustment issues negatively influence academic

success and integration into college (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001; Kiang, 1992; Vernez & Abrahamse, 1996)

Financial need is yet another factor that affects success in college. The difference between college costs and family income creates different levels of financial need among students (King, 2002). Ultimately, financial need and accumulated debt load negatively affects students' academic success (Bui, 2002; King, 2002; Somers, Woodhouse, & Cofer, 2004).

Financial need impacts students' decisions regarding enrollment and living arrangements (King, 2002). For instance, low income students are more likely to live off campus and attend college part-time. The negative implications this has for academic success is evident in low-income students who are more likely than middle- and upper-income peers to drop out of college (King, 2002).

Choices students make to finance their education also impact academic adjustment and success (King, 2002). Students who enroll full-time, work part-time, and borrow money to pay for college are more likely to graduate. This holds true regardless of income level of the student (King, 2002).

Finally, parents' level of education affects academic success. This is important for several reasons when considering the shifting demographic changes in the U.S. population (Horn, 1998). Several statistics point to the fact that there is a greater likelihood immigrant children are coming from homes where neither parent has obtained a college degree (Bureau of Labor Statistics, 2002; U.S. Census Bureau, 2003; Vernez & Abrahamse, 1996). Having parents who have not obtained a college degree is especially true for Hispanics who comprise a growing proportion of the foreign-born population (U.S. Census Bureau, 2003).

More than one-fifth of the foreign born population aged 25 and older (21%) had less than a ninth-grade education. Within this age group, 67% of immigrants are high school graduates, compared with 87% of the native born population (U.S. Census Bureau, 2003).

Hispanics are at the greatest disadvantage when looking at level of education among family members. Within the foreign born population, Asians are more likely to graduate from high school (84%). However, only 50% of Hispanics hold a high school diploma (Bureau of Labor Statistics, 2002; U.S. Census Bureau, 2003).

Differences in degree obtainment among these racial and ethnic groups are duplicated at the postsecondary level. As a group, 27% of foreign born individuals over age 25 have obtained a bachelor's degree. The percentage of foreign born Hispanics who have obtained a bachelor's degree is 11% whereas 46.5% of foreign born Asians have graduated from college (Bureau of Labor Statistics, 2002).

Statistics related to degree obtainment among family members have notable implications for students who are attempting to pursue a postsecondary education. Among native students as well as newcomers, parents' level of education impacts persistence to degree (Choy, 2001; Horn & Nunez, 2000; Vernez & Abrahamse, 1996; Warburton, Bulgarian, & Nunez, 2001).

Students from households where parents have not obtained a bachelor's degree are collectively labeled first generation students (FGs) (York-Anderson & Bowman, 1991). FGs are a distinct subgroup in the college bound population who share characteristics that place them at risk in terms of adjustment and persistence (Pascarella, Pierson, Wolniak, & Terenzini, 2004). FGs are seen as different from students who come from homes where a parent has attended college or graduated with a four-year degree

(Choy, 2001). Students who have at least one parent who graduated from college are known as non-first-generation students (NFGs).

Parents' educational attainment impacts students in several distinct areas. Access to postsecondary institutions, academic preparation, enrollment behaviors, and academic achievement are four areas that place FGs at a disadvantage with respect to academic success (Choy, 2001; Horn & Nunez, 2000; Warburton, Bugarin, Nunez, 2001).

Access to postsecondary institutions is an initial hurdle that FGs confront. Overall, enrollment rates are lower for FGs when compared to NFGs. In 1999, 82% of NFGs enrolled in college immediately after finishing high school. Among FGs, that rate was 54% (Choy, 2001).

Roughly a quarter of all students who were in the top 10% of the 1992 graduating class were FGs. Thirteen percent (13%) of those highly qualified FGs did not enroll in any postsecondary education two years after graduating from high school (Horn & Nunez, 2000).

Disadvantages for FGs are not limited solely to access to postsecondary institutions. Additional issues for FGs are also manifested in below average academic preparation (Choy, 2001; Warburton, Bugarin, & Nunez, 2001). As a group, FGs are less likely to participate in academic college preparatory programs at the secondary level. Sixty-three percent (63%) of FGs complete at least one advanced math course while enrolled in high school compared to 83% of NFGs (Horn & Nunez, 2000). In addition, 14% of FGs take high school level algebra in eighth grade, compared to 34% of NFGs (Horn & Nunez, 2000).

FGs tend to have less academic preparation and lower academic aspirations than NFG peers (Hahs-Vaughn, 2004). This impacts two key indicators of success in college,

Scholastic Aptitude Test (SAT) scores and high school GPA. FGs have lower SAT scores and average high school GPAs than NFGs (Riehl, 1994).

Ultimately, FGs are less likely than NFG peers to persist to degree. Eighty-eight percent (88%) of students whose parents had a bachelor's degree attained a degree or were still enrolled three years after entering a four year institution compared to 73% of FGs (Warburton, Bugarin, Nunez, 2001).

Increased pressure on four year institutions to raise graduation rates among populations at risk for graduation will continue as more students who represent the changing demographics of the U.S. population enroll (WICHE, 2004). This pressure is evident when considering the demographic characteristics that combine to create a difficult transition to the college environment for students who are FG (Horn, 1998). FG status combined with the fact these students may be among racial minorities on campus (Choy, 2001; Ishitani, 2003; Nunez & Cuccaro-Alamin, 1998), female (Bui, 2002; Ishitani, 2003), and may be disadvantaged by language ability (Kiang, 1992) and financial need (Bui, 2002; Somers, Woodhouse, & Cofer, 2004) impacts their academic success (Ishitani, 2003).

First Year of College

The first year of enrollment is crucial for ensuring academic success among college students (Pascarella & Terenzini, 1991; Tinto, 1993). This is especially true for FGs whose demographic characteristics place them at risk for continued academic success (Horn, 1998; Ishitani, 2003).

Once enrolled in college, FGs remain at a disadvantage in terms of transition to college. For example, the risk of departure in the first year of college is 71% higher for FGs than for NFG peers (Ishitani, 2003). Furthermore, 23% of FGs leave college before

the second year compared to 10% of NFGs (Horn, 1998). When compared to all students who transfer or leave for a period of time, FGs are more than twice as likely to leave their first institution without ever returning (Horn, 1998; Warburton, Bugarin, Nunez, 2001).

FGs have lower end-of-freshmen-year-GPAs than NFG peers. Lower academic achievement can also be illustrated by the fact that FGs are more likely to have taken one remedial course compared to NFGs (Horn, 1998; Warburton, Bugarin, Nunez, 2001).

Student academic success during the first year of college is a reflection of a student's academic, social and personal experiences within the institution (Pascarella & Terenzini, 1991; Tinto, 1993). Formal and informal interactions the student has with the various facets of the institutional environment will impact their cognitive development (Pascarella & Terenzini, 1991; Tinto, 1993).

Theoretical Model to Promote Academic Success

Several factors have been offered in one prominent theoretical model used to promote academic success among first year students (Kuh, 1999; Pascarella & Terenzini, 1991; Tinto, 1993). Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort are five factors presented in Pascarella and Terenzini's (1991) theoretical framework. Academic success within the college environment is affected by a combination of variables related to each of these factors (Pascarella & Terenzini, 1991).

Certain variables have been predetermined prior to a student's enrollment. Academic aptitude, self-concept, psychological state, personality, aspirations, and demographic characteristics are background traits formed prior to enrollment. Student characteristics such as these mediate the confounding effects of the college experience (Pascarella & Terenzini, 1991).

Socialization occurs through interaction with faculty and peers on campus (Pascarella & Terenzini, 1991; Tinto, 1993; Tinto & Goodsell, 1994). Positive social interaction with these groups influences student academic success (Pascarella & Terenzini, 1991; Tinto, 1993).

Interaction with faculty inside and outside of class exposes students to ideas, values, and beliefs which encourages the learning process to take place. Faculty members have the ability to build influential relationships with students on campus that lead to measurable gains in academic knowledge and skills (Pascarella & Terenzini, 1991).

Similarly, contact with peers is an important part of students' daily life. Interaction allows them to receive information about the community and institution (Pascarella & Terenzini, 1991; Tinto, 1993). Incorporation into the academic and social communities of the institution facilitates cognitive development (Pascarella & Terenzini, 1991).

The structural and organizational aspects of an institution create the framework within which students interact with groups on campus. One component of the structural characteristics of an institution is the residential nature of the institution. The residential nature of a college campus is another structural characteristic that can impact cognitive development and student learning. College campuses offering residential programs targeted towards social and cognitive growth are more likely to see these features coupled with academic success for their first year students (Pascarella & Terenzini, 1991).

The structural characteristics of the institution and the socialization process are reinforced by the institutional environment with which an individual interacts. Environments that are academically and socially engaging promote student academic success (Kuh, 2003). The college environment is composed of structures, policies,

programs, and services that influence cognitive development among students in classrooms and outside of the immediate academic setting (Pascarella & Terenzini, 1991).

The academic program is a primary component of student learning. The academic program includes a variety of facilities such as the library and classrooms. It also includes the courses in which students enroll and the instruction they receive (Pascarella & Terenzini, 1991).

Social engagement occurs through involvement in a range of activities that requires interaction with peers and faculty. Athletics, clubs and organizations, and employment on college campuses are all aspects of social engagement (Pascarella & Terenzini, 1991).

To be academically successful, students must make use of services and facilities offered within the institution. Academic success is not entirely dependent upon the institutional context. Students' college experience is also affected by the effort with which they pursue academic endeavors. Students must make an effort to engage in social and academic experiences in order to reap the rewards (Pascarella & Terenzini, 1991).

These five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, Student Effort) presented in the model provide a way to conceptualize variables that affect student success. This is helpful when examining the academic success of at-risk populations such as FGs.

In summary, immigration is causing significant demographic changes in the U.S. population (U.S. Census Bureau, 2001). There are both private and public implications associated with educational attainment among increasing numbers of racial and ethnic minorities (National Center for Public Policy and Higher Education, 2004).

Individuals are more likely to increase their quality of life if they earn a bachelor's degree (Institute for Higher Education Policy and Scholarship America, 2004). States are more likely to benefit from increased tax revenue and fewer demands on social services (Hagy & Staniec, 2001; Lowell & Suro, 2002; Vernez & Abrahamse, 1996) if individuals earn a bachelor's degree (National Center for Public Policy and Higher Education, 2004).

Combined personal and societal gains related to educational attainment has led to increased pressure on higher education institutions to facilitate degree completion. Newcomers to the U.S. recognize economic benefits derived from obtaining a bachelor's degree (Vernez & Abrahamse, 1996). Due to the perceived benefits associated with an advanced degree, postsecondary institutions will continue to see increasing numbers of students who represent the changing demographics in the U.S. population (WICHE, 2003).

As the non-Hispanic White population continues to decrease and the population continues to change in regard to ethnic and racial make-up, institutions will face increasing pressure to create environments that facilitate degree completion among mounting numbers of populations who are at risk in terms of academic success, and therefore not graduating from college (American Council on Education, 2004; Carey, 2004; Institute for Higher Education Policy and Scholarship America, 2004; Vernez & Abrahamse, 1996; WICHE, 2003). FG status denotes one group of students who are at risk in terms of persistence towards a bachelor's degree (Horn, 1998; Horn & Nunez, 2000; Warburton, Bugarin, Nunez, 2001).

Access to postsecondary institutions, academic preparation, enrollment behaviors, and academic achievement are four areas that negatively impact FG persistence (Choy,

2001; Horn & Nunez, 2000; Warburton, Bugarin, Nunez, 2001). Demographic variables such as minority status, gender, financial need, and language ability associated with FGs impede their academic success as well (Choy, 2001; Horn & Nunez, 2000; Ishitani, 2003; Kiang, 1992).

Promoting academic success among FGs will continue to be an institutional priority as a greater number of these students enroll at colleges and universities (ACE, 2004; Institute for Higher Education Policy and Scholarship America, 2004; Vernez & Abrahamse, 1996; WICHE, 2003). By examining several factors and how they apply to at-risk subpopulations in the college environment, colleges can promote academic success among these groups (Tinto, 1993). The model presented by Pascarella & Terezini (1991) provides one way to conceptualize factors that influence student academic success. Factors include: Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort (Pascarella & Terenzini, 1991).

Despite a growing awareness of hurdles faced by FGs, few studies have examined FGs during the crucial period of adjustment comprised of the first year of full-time enrollment (Bui, 2002; Ishitani, 2003; Riehl, 1994; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Little is known about how factors such as Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort (Pascarella & Terezini, 1991) impact their academic success during the first year. This study was designed to address that gap in the literature.

Purpose Statement

The purpose of this study was to examine what factors predict the academic success of first year, full-time FGs. Furthermore, this study examined whether there is a

relationship between race, gender, financial need, and language ability and factors used to predict the academic success of FGs.

The sample included FGs who self-identified based on their responses to the 2001 Cooperative Institutional Research Program survey (CIRP) about levels of education for mother and father (HERI, 2004b). For purposes of this study, FGs were defined as students who classified both parents as falling into the following categories of educational attainment: grammar school or less, some high school, high school graduate, postsecondary school other than college. Furthermore, to be included in the sample participants needed to indicate they were matriculating as full-time students without any previous higher education enrollment.

Financial need was also defined in relation to an item on the CIRP. Financial need was defined as the amount of a student's first year educational expenses (room, board, tuition, and fees) the student estimates were covered from aid which must be repaid (loans) (HERI, 2004a).

Factors were defined as variables measured by the 2002 *Your First College Year Survey* (YFCY) data (HERI, 2004a). Factors fell into five main areas: Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort (Pascarella & Terenzini, 1991). The YFCY will be reviewed in detail in the instrumentation section of Chapter Three.

Academic success was defined as students' responses on the YFCY that indicated a first semester GPA of 1.75 or higher. A first semester GPA below a 1.75 denoted students who were less successful academically (Tinto, 1993).

English language ability was defined as student's response to question number seven on the YFCY. Students must indicate if English is their native language (HERI, 2002).

Research Questions

The present study explored five research questions concerning first generation students:

1. Are there significant differences between more academically successful FGs and FGs who are less successful academically on combinations of five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort)?
2. Is there a relationship between Race and five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) used to predict academic success among FGs?
3. Is there a relationship between Gender and five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) used to predict academic success among FGs?
4. Is there a relationship between Financial Need and five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) used to predict academic success among FGs?
5. Is there a relationship between identified Language Ability (native and non-native speakers of English) and five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) used to predict academic success among FGs?

Significance of the Study

The present study was significant for future practice, research, and policy. In terms of practice, several constituencies might benefit from the results. For example, the results of this study provided student affairs professionals with data related to out-of-classroom factors that predict successful adjustment of FGs during their first year of college. Student affairs professionals might use the results to design support programs aimed specifically at first-year FGs.

FGs may also benefit from the results of this study. The results provided them with information about the potential impact of language ability on factors that predict their academic success. Students who are classified as FG may wish to consider this information when determining where to enroll during their freshmen year in relation to institutional support programs that are offered to students for whom English is a second language.

Finally, academic administrators, such as deans and department heads, might benefit from the findings of this study. This study provided information about the impact of academic and social variables on the academic success of FGs. Academic administrators might use this information to determine whether their departments are serving FGs in appropriate ways.

The present research also served as a springboard for future studies. I explored what factors predict the academic success of first-year, full-time FGs at four year institutions. Given that a significant number of minority students who are FGs enroll at two year institutions future studies might examine FGs enrolled at two year institutions (Choy, 2001). Such a study would expand on the information available about the factors used to predict success of first year, full-time FGs.

This study used a national data set. Additional studies might be conducted on individual campuses. Similar studies conducted at individual institutions would increase the information related to the influence of social and academic factors that predict the success of first year, full-time FGs within specific institutional environments.

Immigrant status versus non-immigrant status as it applies to FGs was a factor that was not examined in this study. Additional studies might look at whether factors used to predict success differ based on immigration status of the student. Such a study would provide more detailed information about whether success is impacted by immigration status.

Finally, the study was significant in terms of future policy. The results provided insight to policymakers in terms of the effect of financial need on academic success. Policymakers might use these data when considering how financial aid policy may predict the academic success of FGs.

This study may be useful for policymakers concerned with institutional climate. The findings provided information on academic and social factors that predict the academic success of FGs. These data might be used to assess policies vis a vis institutional climate and academic success.

Finally, this study was significant for policymakers concerned with curriculum and instruction. These results offered insight into the effect of factors related to the instructional environment and academic success among FGs. These data might be used by policymakers to shape the content of classes for first-year students.

Delimitations

As with all research, the present study had some initial delimitations. The first dealt with the sample. A sub-set of a national sample was used for this study. This prevented individual

institutional characteristics from being examined. It is possible that institutions might have differed significantly from one another. If so, those differences might have influenced the results in some unforeseen manner.

Second, classification of FG status may have posed a delimitation. Students in this study self-identified as FGs. It is possible some students incorrectly self-identified as FG or that some FGs failed to identify themselves as such. In either eventuality the findings might have been influenced.

The manner in which data were collected for this study may have posed a delimitation. The instrument was administered at the end of the second semester of participants' first year in college. It is possible that two semesters was an insufficient time period for factors related to academic success to manifest. If data were collected at a later point in time results might have differed.

Finally, the data for this study were based upon self-reported answers. Self-reported answers may be an insufficient means to collect information about factors that affect the academic success of FGs during their freshmen year. If data were collected through some other means results might have differed.

Despite these initial delimitations, the study was important because predicting the academic success of FGs is an area that has been neglected in the literature. The research provided an opportunity for educators and policymakers to learn more about FGs. The present study provides a framework for future studies that explore FGs.

Organization of the Study

The present study is organized around five chapters. Chapter One introduced the topic of study, the research questions and the significance of the study. The second chapter reviews the literature relevant to the study. Chapter Three describes the methodology of the study, including

the sampling techniques and the procedures used to collect and analyze the data. The fourth chapter describes the results of the study while the final chapter discusses the results and their implications for future practice, research and policy.

Chapter Two

Literature Review

This study was designed to address the gap in the literature regarding first generation students' (FGs) academic success during the first year of full-time enrollment at a four-year institution. Factors that predict the academic success of first year, full-time FGs were explored in relation to less academically successful FGs. The study also examined whether there is a relationship between confounding variables and factors used to predict the academic success of FGs. The literature review is based around these areas of study.

First, for the purposes of this study, academic success is defined as a grade point average (GPA) of 1.75 or higher. Therefore, GPA as a measure of academic success for first year students is discussed.

This study uses five factors to predict the academic success of FGs. The factors include: Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort. These factors as they apply to the academic success of students in general is reviewed next. Literature that specifically addresses how these factors impact the academic success of FGs is incorporated where available.

Furthermore, this study examined whether there is a relationship between Race, Gender, Financial Need, and Language Ability and factors used to predict the academic success of FGs. Existing literature relating to the impact of these additional variables on the academic success of FGs is reviewed in the final section of the chapter.

GPA as a Measure of Academic Success

The most common measure of academic success is student GPA. Overall, GPA is directly linked to continuing enrollment for college students. It serves as a surrogate measure for the degree to which students have responded to the mutually reinforcing variables that comprise the college experience (Allen, 1999; McGrath & Braunstein, 1997; Tross, Harper, Osher, & Kneidinger, 2000).

Students who do not respond favorably to the institutional environment do not perform well academically. Poor academic performance results in dismissal from the college environment (Tinto, 1993). A low GPA results in institutional departure for two major reasons. The first relates to institutional policies that prevent the student whose GPA is less than an established level from re-enrolling. GPA may also cause a student to leave because of a negative social stigma attached to failure (Tinto, 1993).

GPA earned during the first year and in some cases, first semester, is a better indicator of continued enrollment and academic success than other variables (Allen, 1999; McGrath & Braunstein, 1997). Additional indicators linked to academic success include minority status, gender, and socioeconomic status. GPA is more predictive of student departure than these other factors combined (Allen, 1999; McGrath & Braunstein, 1997).

GPA is the primary indicator of whether students have responded to various factors that create the complex system called the college experience (Kuh, 1999; Pascarella & Terenzini, 1991). Equally important when examining academic success is consideration of factors that are related to academic success among students (Pascarella & Terenzini, 1991).

Factors Related to Academic Success

Several factors related to the academic success of college students are described in Pascarella & Terezini's model (1991). Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort are factors that have been associated with academic success (HERI, 2004a; Pascarella & Terenzini, 1991). Variables related to the five factors have been used to examine the academic success of NFGs and, to a lesser degree, FGs.

Background Characteristics

Students enter college with a pre-determined set of Background Characteristics. Variables associated with this factor include self-confidence, realistic self-appraisal, and coping mechanisms (Bryson, Smith, & Vineyard 2002; Jackson, Smith, & Hill, 2003; Sedlacek, 2004). Background Characteristics such as these are related to the academic success of NFGs and FGs (Bryson, Smith, & Vineyard 2002; Jackson, Smith, & Hill, 2003; Sedlacek, 2004).

Students who demonstrate positive changes in self-confidence are more likely to continue to achieve academically (Bryson, Smith, & Vineyard 2002; Jackson, Smith, & Hill, 2003; Sedlacek, 2004). Successful students must possess confidence and a strong sense of self to navigate an unfamiliar system (Sedlacek, 2004). For instance, students who indicate they feel confident in their educational and career decisions are more likely to be academically successful. In addition, students who feel confident in their beliefs and actions based on those beliefs are more likely to experience academic success at the end of the first semester (Bryson, Smith, & Vineyard 2002).

Self-concept is an area that is significantly related to the academic success of FGs. Self-concept is an area with which FGs struggle (Inman & Mayes, 1999). They often find

themselves exposed to unfamiliar environments. This requires an adjustment process in which FGs must trade previous social identities for the acquisition of other identities. FGs who are capable of making such an adjustment are more likely to be academically successful (London, 1992).

Realistic self-appraisal suggests an individual is capable of assessing his/her strengths and weaknesses so development may occur. Positive indicators of realistic self-appraisal correlate with higher GPA and greater likelihood of persistence (Sedlacek, 2004).

Similarly, coping mechanisms such as assertiveness and a sense of independence are linked to continued persistence (Jackson, Smith, & Hill, 2003). Confidence in these areas allows an individual to cope with new and different experiences presented in the college environment leading to academic success (Bryson, Smith, & Vineyard 2002; Jackson, Smith, & Hill, 2003).

Furthermore, students who possess coping mechanisms have the ability to deal successfully with emotional stress in college. These coping mechanisms might include concentrating on specific objectives. Students who are focused on a particular goal are more likely to experience academic success and to be retained (Pritchard & Wilson, 2003).

Additional coping mechanisms can include indicators of religiousness and spirituality (Jackson, Smith, & Hill, 2003; Pritchard & Wilson, 2003). Religiousness and spirituality affect student persistence by functioning as a sense of support as students engage in academic work. This includes turning to prayer and meditation to help cope with the demands of the college environment (Jackson, Smith, & Hill, 2003).

There are also several coping mechanisms that are predictive of FGs' academic success. Goal orientation is a Background Characteristic that promotes academic success among FGs. Goals determine how students spend their time (Tinto, 1993).

FGs enroll in college with lower academic aspirations than NFGs, citing lower degree aspirations (Hahs-Vaughn, 2004). FGs also have lower expectations for end-of-first-semester GPA (Riehl, 1994). This negatively affects FGs' academic success (Hahs-Vaughn, 2004; Riehl, 1994). However, FGs who demonstrate a preference for long-term goals are more likely to experience academic success as they move beyond the first semester (Ting, 2003).

FGs have other coping mechanisms such as personal attributes that contribute to their academic success (Naumann, Bandalos, & Gutkin, 2003). The ability to self-regulate learning contributes to the prediction of end-of-first semester GPA. Variables such as self-efficacy, study strategies, and time management combined with standardized test scores are variables related to Background Characteristics that successfully predict the academic success of FGs (Naumann, Bandalos, & Gutkin, 2003).

Agents of Socialization

Student academic success is also influenced by encounters students have with faculty and peers (Pascarella & Terenzini, 1991). These interactions comprise the factor entitled Agents of Socialization.

Agents of Socialization promote academic success among students. Variables associated with this factor combine to create a sense of connection to the institution. Greater connection to the campus leads to increased cognitive growth (Kuh, 1999; Pascarella & Terenzini, 1991).

Frequent student interaction with faculty and college personnel is a variable that is significantly related to student success (Clark, Walker, & Keith, 2002; Eimers, 2001; Mayo, Murguia, & Padilla, 1995). Class assignments and course work that encourage positive interaction with peers also facilitate cognitive development (Bauer & Liang, 2003; HERI, 2004a; Kuh & Gonyea, 2003; Kuh & Hu, 2001; Nisbett, Ruble, & Schurr, 1982). Finally, interaction with peers outside of class socializes the student to the college experience (Berger & Milem, 2002; Ebberhardt, Rice, & Smith, 2003; Mayo, Murguia, & Padilla, 1995).

Students need to develop meaningful relationships with faculty. They should feel respected by faculty and be able to meet with them on a regular basis. Interacting with staff in informal non-academic settings can also provide a venue for academically meaningful activities (Eimers, 2001).

Together, spending time with faculty during office hours and outside of office hours impacts academic success (Mayo, Murguia, & Padilla, 1995). Seeing a faculty member as a role model contributes to higher GPAs among students (Mayo, Murguia, & Padilla, 1995). Similar results are seen when students interact during office hours with other academic personnel on campus such as academic advisors and teaching assistants (Clark, Walker, & Keith, 2002; Eimers, 2001).

A sense of community often stems from students who feel they are being personally engaged by faculty and staff. Students who experience engagement are more likely to be academically successful. Being engaged with faculty and staff allows students to ask questions and establish a personal connection with others on campus (Jackson, Smith, & Hill, 2003).

Developing close friendships with other students is another variable related to academic success while enrolled in college. Students are expected to live with peers for an extended period of time in a largely unfamiliar environment. The ability to develop interpersonal relationships is an important part of the college experience and predicts whether students will succeed academically (Baker & Siryk, 1986).

Academic success is also a result of gains in affective learning that occur through faculty contact. Interest in course content and in behaviors and ideas presented by professors encourage engagement. Engagement in these areas, as a result of exposure to Agents of Socialization, leads to increased learning on the part of the students (Clark, Walker, & Keith, 2002).

Spending time with peers during social activities outside of the classroom offers additional opportunities for interaction with Agents of Socialization (Berger & Milem, 2002; Ebherhardt, Rice, & Smith, 2003; Mayo, Murguia, & Padilla, 1995). This includes the amount of time involved in student organizations. It also includes academic assignments that require out of class engagement. Time spent participating in these activities contributes to student academic success (Berger & Milem, 2002; Ebherhardt, Rice, & Smith, 2003; Mayo, Murguia, & Padilla, 1995).

Positive effects on academic success are linked to membership in student organizations such as student government, and religious and cultural groups. Formal social integration in groups such as these allows students to form relationships that indirectly contribute to a successful GPA (Mayo, Murguia, & Padilla, 1995).

Interpersonal interaction with peers also occurs through activities associated with academics. For instance, community service opportunities that are academically based allow students to interact with one another. Interaction contributes to an enhanced self-

concept among students and is indirectly associated with academic success (Berger & Milem, 2002).

How students interact with peers is an equally powerful predictor of academic success. Negative interaction can include the use of alcohol and other stimulants associated with poor social health. Frequent use of alcohol and smoking cigarettes are linked to decreased academic success (DeBerard, M.S., Spielmans, & Julka, 2004).

Joining a fraternity or sorority, another important indicator of peer interaction, is negatively associated with academic success. Some researchers have found membership in Greek organizations is linked to decreased academic success. Members of Greek organizations are more likely to use alcohol and participate in behaviors that put them at-risk such as driving while under the influence of alcohol and having unprotected sex after consuming alcohol (Ebberhardt, Rice, & Smith, 2003).

Consequently, Agents of Socialization can affect student academic success both positively and negatively. Structural Characteristics that are part of the college experiences are also linked to academic outcomes of NFGs and FGs.

Structural Characteristics

Structural Characteristics indirectly influence a student's college experience. Organizational attributes affect the degree of integration and involvement a student has with social and academic systems (Pascarella, 1985). For instance, institutions with large enrollments and high student to faculty ratios negatively influence a student's ability to interact with faculty and peers (Pascarella, 1985).

Structural Characteristics also affect academic success. Living on-campus is a positive predictor of student engagement and learning. Students who live on campus have better access to instructional resources such as faculty members and other students (Kuh,

2003). Residential living also provides students with the opportunity for more interactions with agents of socialization. Living in residence halls also facilitates cognitive development (Pascarella & Terenzini, 1991).

Despite the underlying positive implications associated with on campus living, the actual impact of residency on specific cognitive gains is inconclusive. For instance, freshmen students who live on campus do not experience more significant gains in critical thinking than students who live off campus (Inman & Pascarella, 1998).

Structural Characteristics are significantly related to the academic success of FGs. Fewer FGs live on campus when compared to NFG peers. This results in FGs having fewer opportunities to interact with other students (Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Living off campus means FGs tend to have less exposure to other areas of the college experience that would provide a venue for positive interaction with Agents of Socialization. Not living on campus has also been associated with less FG involvement in athletics and community volunteer work than NFGs (Bui, 2002; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Overall, not living on campus negatively affects FGs' academic success (Somers, Woodhouse, & Cofer, 2004).

Structural Characteristics are one factor that affects FG academic success. Their academic success is also affected by the Institutional Environment.

Institutional Environment

Variables within the Institutional Environment are related to NFG and FG academic success (Pascarella & Terenzini, 1991). The Institutional Environment includes daily experiences such as satisfactory interaction with academic and social aspects of the

campus (HERI, 2004a; Eimers, 2001). In addition, variables look at positive comprehensive experiences with the Institutional Environment by examining changes in knowledge and skills (Cheng, 2004; Eimers, 2001; HERI, 2004a; Jackson, Smith, & Hill, 2003).

Daily experiences of first year students include interactions with various academic and support services within the Institutional Environment. Academic interactions include experiencing coursework relevant to everyday life and experiencing quality instruction. Colleges that have Institutional Environments that incorporate these academic experiences into students' daily lives are more likely to promote cognitive gains that lead to academic success (Eimers, 2001)

Student academic success can also be attributed to courses and experiences that inspire new ways of thinking. Students' who are exposed to such experiences and are receptive to them are more likely to see a higher end-of-first-year GPA. Seeking out new experiences allows students to increase critical thinking skills by the end of freshmen year and therefore benefit from cognitive development (Bauer & Liang, 2003).

Classroom practices that are academically engaging promote higher order thinking skills. As an example, course assignments that require the use of library facilities are positively associated with academic success. Institutional Environments that emphasize research intensive activities and manipulating outside sources of research are more likely to see academically successful students (Kuh & Gonyea, 2003).

Daily interaction with support services has been used to predict student success. More specifically, satisfactory interaction with staff in financial aid offices (Furr & Elling, 2002; St. John, 2000) and career services offices (Furr & Elling, 2002; Jackson, Smith, & Hill, 2003) contributes to academic success.

The availability and degree to which students are able to navigate financial aid services indirectly impacts their learning. Students' ability to pay for college and manage debt incurred from attendance can influence all other aspects of the college experience (St. John, 2000). Ultimately, the ability to pay for college will impact student's academic success as it allows them to continue to pursue a postsecondary education (Furr & Elling, 2002).

Similarly, satisfaction with career services influences academic success. Exposure to individuals in careers they wish to pursue increases student confidence and solidifies career choice. This indirectly impacts a student's persistence (Jackson, Smith, & Hill, 2003).

Student commitment to an institution is attributed to the degree to which they are satisfied with the Institutional Environment. The less students experience daily hassles, the more content they are at a particular institution. Students who are pleased with the support they receive on campus are more likely to succeed (Brooks & DuBois, 1995). Believing policies are enforced fairly and approving how institutions communicate standards and academic expectations are correlated with student re-enrollment (Berger & Braxton, 1998).

Daily experiences with academic and student services on college campuses influence academic success among FGs (Bui, 2002; Choy, 1998; Folger, Carter, & Chase, 2004; Inman & Mayes, 1992; Somers, Woodhouse, & Cofer, 2004). Small group exposure to specific academic support services and student affairs offices on college campuses positively impacts satisfaction and institutional commitment among first-year FGs. In addition, academic success is facilitated through personal contact and mentorship. Students' exposure to different offices on campus introduces them to

individuals who serve as resources. FGs who participate in these types of small groups have significantly higher GPAs than those who do not (Folger, Carter, & Chase, 2004).

Student services such as financial aid also impact the success of FGs. FGs are more likely to come from families that have a lower socioeconomic status (Choy, 1998) and indicate financial aid is a major worry (Bui, 2002). Lack of financial resources impacts their ability to become involved in campus events (Bui, 2002; Inman & Mayes, 1992). Ultimately, financial aid has direct implications for FG learning. For every \$1,000 increase in tuition, FGs are less likely to experience academic success. Similarly, accumulated debt load negatively affects the academic success of FGs (Somers, Woodhouse, & Cofer, 2004).

Daily experiences in the Institutional Environment also allow students to develop a sense of community (Cheng, 2004; Eimers, 2000) and close friendships. Positive daily experiences leads to satisfaction with the college environment and promotes academic success (Cheng, 2004; Eimers, 2000). This sense of community allows students to feel cared about and valued as individuals (Cheng, 2004; Eimers, 2000).

Daily experiences that promote a sense of community are also important for FGs. Those who develop a social network are more likely to be academically successful. FGs who have a social support network are also more likely to form relationships with faculty members, identify a mentor, and develop a group of peers to depend on. These variables combine to facilitate academic success (Richardson & Skinner, 1992).

Positive experiences such as acquisition of knowledge (Sedlacek, 2004) and adjusting to demands within the Institutional Environment (Nisbett, Ruble, & Schurr, 1982) occur over the course of the first year. Ultimately, these comprehensive

experiences lead to growth in knowledge in a particular field and predict student academic success (Tinto, 1993).

Institutional Environments that promote the acquisition of knowledge in a particular field of study are positively predictive of academic success. Students who are exposed to such an environment and possess a particular area of expertise experience greater academic success while in college (Sedlacek, 2004).

Students must also be able to adjust to the academic demands within the Institutional Environment to achieve academic success. Variables that indicate students are adapting successfully include developing effective study skills, managing time effectively, and developing an understanding of what professors expect (Nisbett, Ruble, & Schurr, 1982). Academic success is attributed to students who indicate they have learned effective study skills during their exposure to the Institutional Environment during their first year of enrollment. Skills include the ability to read for content, knowing how to take examinations, and understanding how to organize study materials (Nisbett, Ruble, & Schurr, 1982).

Institutional Environments also facilitate changes in analytical and problem solving skills among first year students (Bauer & Liang, 2003; HERI, 2004a; Pascarella & Terenzini, 1991). Analytical and problem solving competencies allow an individual to apply and synthesize information across disciplines. Ultimately, such cognitive gains are necessary for students to be academically successful (HERI, 2004a; Pascarella & Terenzini, 1991).

Affective growth is another area related to student academic success (HERI, 2004a). Institutional Environments that encourage growth in cooperativeness and awareness of others (Kuh, 2003; Furr & Elling, 2002) and increase the leadership and

community orientation of students (Sedlacek, 2004; Ting, 1997; Ting, 2003) promote academic success.

Self-assessed cooperativeness and awareness of others mutually reinforce student learning (Kuh, 2003). Cooperation with peers and awareness of others indicate students are able to work as part of a team and possess knowledge of people from different races/cultures (HERI, 2004a).

For instance, students who experience academic success are more likely to report learning about other races, cultures, sexual lifestyles, or religions (Furr & Elling, 2002). Students who report experiences with diversity are more involved in other engaging educational practices such as collaborative learning that provide exposure to divergent views. These factors coalesce within the Institutional Environment creating greater gains in development (Kuh, 2003).

Leadership and community service are other variables in the Institutional Environment that promote academic success (Sedlacek, 2004; Ting, 1997; Ting, 2003). Leadership experience indicates an individual has familiarity in a role associated with enhanced responsibility. Experiences such as these indirectly facilitate affective growth. Growth due to taking on a leadership role has been shown to be indicative of positive academic success among several groups of nontraditional students including, Latinos, Native Americans, African Americans, and women (Sedlacek, 2004). In particular, FGs who report they possess leadership skills are more likely to have a higher GPA than those who do not report they have such skills (Strage, 1999; Ting, 1998; Ting, 2003).

Experiences in community service represent the ability to engage in a social group, communicate well, establish a relationship in a new community, and accomplish tasks with others in a group (Ting, 2003). Affective growth due to community

involvement positively predicts the academic success of women, Asian Americans, and African American students (Sedlacek, 2004; Ting, 1997; Ting, 2003). Community service is also a strong positive predictor of end-of-first semester GPA among FGs (Ting, 1998; Ting, 2003).

Institutional Environment is comprised of multiple variables linked to academic success (Pascarella & Terenzini, 1991). Student Effort is another factor which influences academic success among NFGs and FGs.

Student Effort

Student Effort is comprised of several variables that promote academic success. The amount of time spent on course work and timeliness turning in assignments are indicators of Student Effort (Bauer & Liang, 2003; Kuh, 1999; Kuh & Hu, 2001).

The amount of effort students put into their work and the time spent on class assignments reflect the degree to which they are engaged in educationally purposeful activities (Bauer & Liang, 2003). Effort on assignments contributes to greater gains over a wide range of learning and personal development outcomes. These outcomes increase the chance students will experience the benefits of academic success (Kuh, 1999; Kuh & Hu, 2001) including a successful end-of first year GPA (Bauer & Liang, 2003).

FGs who demonstrate greater Student Effort during their college experience gain greater rewards than NFGs (Pascarella, Pierson, Wolniak, & Terenzini, 2004). For instance, hours spent studying has a stronger positive effect on FGs' critical thinking skills. The number of written assignments has a stronger positive effect on writing skills, openness to diversity, and self-understanding for FGs than NFGs (Pascarella, Pierson, Wolniak, & Terenzini, 2004).

Students who are organized and efficient see an increase in academic performance (Bauer & Liang, 2003). Alternatively, students who indicate they turn in "sub par" assignments or turn in assignments late demonstrate disengagement. Behaviors such as these put a student's academic success in jeopardy (HERI, 2004a).

Student Effort is related to a student's ability to manage external commitments with competing academic demands. The ability to manage these demands is crucial for academic success. Students who seek balance between external commitments and experiences presented by the college environment are more likely to obtain a successful end-of-first-year GPA (Bauer & Liang, 2003). The manner in which external activities are balanced with school work and time spent on college campuses affects whether students return for the second year (Furr & Elling, 2000; Lundberg, 2004) and their GPA (Bauer & Liang, 2003).

For instance, students who are consumed with establishing social relationships at the expense of attending to academic issues are more likely to see a negative influence on their freshmen year GPA (Bauer & Liang, 2003). Part-time employment (Furr & Elling, 2000; Furr & Elling, 2002; Lundberg, 2004), time spent commuting (McGrath & Braunstein, 1997) and household demands (HERI, 2004a; Kuh, 2003) are additional external commitments that can influence student academic success.

Working off campus interferes with schoolwork and ultimately impacts academic progress (Furr & Elling, 2002; Furr & Elling, 2000; Lundberg, 2004). For instance, students who work more than 20 hours per week off campus may not have the same opportunity to engage in learning from peers or to form quality relationships with faculty. Less time spent on campus can lead to lower satisfaction in peer relationships and fewer

opportunities engagement with faculty and administrators (Furr & Elling, 2000; Lundberg, 2004).

Lower satisfaction among students who work is a pattern that is particularly evident among entering students. First-year students who work more than 20 hours per week off campus are more likely to drop out of college (Furr & Elling, 2002). However, students who work on-campus do not appear to have difficulty maintaining relationships with faculty and getting involved in student organizations (Furr & Elling, 2000).

Time spent commuting also can affect academic success among first-year students (McGrath & Braunstein, 1997). First-year students who commute to campus daily or who leave campus on weekends are more likely to experience negative implications regarding academic success at the end of the freshmen year (McGrath & Braunstein, 1997).

External commitments that affect Student Effort among FGs have to do with balancing employment, household duties, and childcare with school work (Billson & Terry, 1982; Bui, 2002; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). The frequency with which family responsibilities interfere with schoolwork is negatively associated with Student Effort. Students often have difficulty balancing household duties with coursework and that negatively impacts academic success (HERI, 2004a; Kuh, 2003).

Another external commitment negatively associated with Student Effort and academic success among FGs is the relationship they have with their parents (Horn & Nunez, 2000; York-Anderson & Bowman, 1991). Parents of FGs are less likely to provide encouragement to their students. FGs are more likely to come from homes where college is not a high priority. Students from homes where neither parent has a college degree perceive less support from their families for attending college. Students' attempts

to integrate themselves into the institution are mitigated by obligations to maintain relationships with family. Family obligations impede academic progress among FGs (Horn & Nunez, 2000; York-Anderson & Bowman, 1991).

In addition, the type of involvement FGs have with their parents often requires those students to spend more time at home away from the college environment. FGs are often involved with day-to-day matters of their parents' and their family's homelife. For example, FGs are often expected to work and contribute economically to the household. Relationships such as the ones FGs have with their parents often interfere with Student Effort exhibited by FGs and is negatively associated with academic success (York-Anderson & Bowman, 1991).

Employment is an external commitment that negatively correlates with FGs' Student Effort and academic success. First year FGs tend to work more hours per week and are more likely to work full-time (Somers, Woodhouse, & Cofer, 2004). Employment has implications for the time they spend on campus and negatively affects academic progress (Billson & Terry, 1982; Bui, 2002; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996).

Student Effort is negatively affected by variables that illustrate poor social and emotional adjustment. Students who feel worried about their health, unsafe on campus, intimidated by professors, lonely or homesick, worried about meeting new people, depressed, or isolated from campus life demonstrate poor social and emotional adjustment to the college environment (HERI, 2004a; McGrath & Braunstein, 1997).

First-year students who withdraw based on their perceptions of other students illustrate the negative implications of poor social and emotional adjustment (McGrath & Braunstein, 1997). First-year students who do not connect with other students are less

likely to meet new people and are more likely to be academically less successful (McGrath & Braunstein, 1997).

The ability to deal with anxiety and separation from familiar environments are variables associated with Student Effort. An individual must be able to devote the time and energy needed towards the psychological as well as physical demands of the new collegiate environment. Failure to do so is predictive of academic failure (Baker & Siryk, 1986).

Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort are factors that influence the academic success of students. In several instances, variables associated with these factors have been used to predict the academic success of FGs. The academic success of FGs is also related to demographic factors.

Demographic Factors Related to the Academic Success of FGs

The third area the literature explores is demographic characteristics that impact the success of FGs. Race (Richardson & Skinner, 1992; Somers, Woodhouse, & Cofer, 2004), language ability (Kiang, 1992), gender (Bui, 2002; Kiang, 1992; Inman & Mayes, 1999), and financial need (Somers, Woodhouse, & Cofer, 2004) are factors that work in congruence to affect the success of FGs.

In terms of race and ethnicity, FGs are more likely to be African American or Hispanic (Choy, 2001; Nunez & Cuccaro-Alamin, 1998). FGs who are minorities on college campuses report they frequently experience discrimination. Discrimination has been shown to negatively affect adjustment (Richardson & Skinner, 1992). FGs who indicate they are multiethnic also are less likely to experience academic success (Somers, Woodhouse, & Cofer, 2004).

Adjustment problems attributed to race and ethnicity can be compounded if FGs are recent immigrants to the United States or if their parents' are immigrants. English may be a second language for these students. Language ability can pose an additional impediment to academic success. For example, language barriers can make it harder to understand lectures in class and to volunteer information in classroom settings (Kiang, 1992).

Gender is a demographic characteristic that works in conjunction with others to impact FG success. Gender carries more significance among certain cultural groups. For cultural groups that stress traditional gender roles, college attendance for females may not be a priority. There may be little support at home for FGs who are women and the first to attend college (Bui, 2002; Kiang, 1992; Inman & Mayes, 1999).

Financial need has significant implications for the academic success of FGs. Because FGs tend to have greater financial need than other students (Somers, Woodhouse, & Cofer, 2004) they have to work part-time which negatively affects their academic success (King, 2002; Somers, Woodhouse, & Cofer, 2004).

In summary, GPA provides a measure of whether students have been able to adjust to compounding factors that create the college experience. A low GPA indicates students have not responded favorably to Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort (Pascarella & Terenzini, 1991). These students may also be disadvantaged by Background Characteristics they possessed at the time of enrollment (Pascarella & Terenzini, 1991).

Students who are less successful academically are more likely to depart due to institutional policies and the negative stigma associated with academic failure (Allen, 1999; McGrath & Braunstein, 1997). Students who earn a higher GPA indicate they have

responded favorably to these five factors and are more likely to experience continued academic success (Allen, 1999; McGrath & Braunstein, 1997).

Variables associated with Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort have been used to predict academic success (Pascarella & Terenzini, 1991). They have been explored to predict academic success among NFGs and, to some degree, FGs.

Student Background Characteristics such as self-confidence, realistic self-appraisal, and coping mechanisms (Bryson, Smith, & Vineyard 2002; Jackson, Smith, & Hill, 2003; Sedlacek, 2004) are related to student academic success. In particular FGs are more likely to experience academic success if they have self-confidence (Inman & Mayes, 1999; London, 1992) and develop appropriate coping mechanisms (Hahs-Vaughn, 2004; Naumann, Bandalos, & Gutkin, 2003; Riehl, 1994; Ting, 2003).

Exposure to Agents of Socialization is significantly related to NFG academic success. Agents of Socialization includes exposure to both faculty (Clark, Walker, & Keith, 2002; Eimers, 2001; Mayo, Murguia, & Padilla, 1995) and peers (Bauer & Liang, 2003; Kuh & Gonyea, 2003; Kuh & Hu, 2001; Nisbett, Ruble, & Schurr, 1982).

Interacting with peers outside of class is also an important Agent of Socialization (Berger & Milem, 2002; Ebberhardt, Rice, & Smith, 2003; Mayo, Murguia, & Padilla, 1995).

This includes positive interactions such as involvement in student organizations (Mayo, Murguia, & Padilla, 1995) as well as negative interactions (DeBerard, M.S., Spielmans, & Julka, 2004) that affect academic success. Fewer studies have highlighted how Agents of Socialization directly affect the academic success of FGs (Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996).

Structural Characteristics is a factor associated with student academic success (Pascarella, 1985). Living on campus is one area (Pascarella, 1985) that is indirectly associated with academic success among students. This variable has significant implications for FGs. Living on campus allows FGs the opportunity to interact with faculty and students more frequently (Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996) promoting academic success.

Daily experiences within the Institutional Environment influence academic success among FGs (Bui, 2002; Choy, 1998; Folger, Carter, & Chase, 2004; Inman & Mayes, 1992; Somers, Woodhouse, & Cofer, 2004). Daily experiences that promote a sense of community and lead to the development of a social network facilitate academic success among FGs (Richardson & Skinner, 1992). Comprehensive experiences such as those that lead to an increase in leadership skills (Ting, 1998; Ting, 2003) promote academic success among FGs.

Student Effort is related to the academic success of FGs (Pascarella, Pierson, Wolniak, & Terenzini, 2004). External commitment such as relationships with parents (Horn & Nunez, 2000; York-Anderson & Bowman, 1991) and balancing employment with school work (Billson & Terry, 1982; Bui, 2002; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996) are negatively associated with FG academic success.

Demographic characteristics of FGs work congruently to impede academic success. FGs are more likely to be minorities on college campuses (Choy, 2001; Nunez & Cuccaro-Alamin, 1998). Minority status can impact their academic success (Richardson & Skinner, 1992). FGs who are minorities and recent immigrants experience additional difficulties related to academic success based on English language ability (Kiang, 1992).

Gender can also negatively impact FGs' academic success (Bui, 2002; Kiang, 1992; Inman & Mayes, 1999). Finally, financial need associated with FG status may affect academic success (King, 2002; Somers, Woodhouse, & Cofer, 2004).

This study sought to address the gap in the literature by examining FGs during the crucial period of adjustment comprised of the first year of full-time enrollment (Bui, 2002; Riehl, 1994; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). I examined how five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) predict the academic success of first year, full-time FGs. Furthermore, this study investigated whether there is a relationship between race, gender, language ability, and financial need and these five factors related to the academic success of FGs.

Chapter Three

Methodology

The purpose of this study was to examine what factors predict the academic success of first-year, full-time first generation students (FGs). This study also examined whether there is a relationship between Race, Gender, Financial Need, and Language Ability and factors used to predict the academic success of FGs.

The present study explored five research questions concerning first generation students:

1. Are there significant differences between more academically successful FGs and FGs who are less successful academically on combinations of five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort)?
2. Is there a relationship between Race and five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) used to predict academic success among FGs?
3. Is there a relationship between Gender and five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) used to predict academic success among FGs?
4. Is there a relationship between Financial Need and five factors (Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) used to predict academic success among FGs?
5. Is there a relationship between identified Language Ability (native and non-native speakers of English) and five factors (Student Background Characteristics, Agents

of Socialization, Structural Characteristics, Institutional Environment, and Student Effort) used to predict academic success among FGs?

This chapter describes the method employed in the study. A description of the sampling procedure, the instrumentation, and the procedures used to collect and analyze the data follow.

Sample Selection

The sample was identified from respondents who participated in two national studies. The first study included students who completed the CIRP. The CIRP is an instrument that is administered nationally at higher education institutions to incoming first year students by the Higher Education Research Institute (HERI) at University of California, Los Angeles (UCLA). It is designed to elicit information from participants about their demographic characteristics, attitudes, values, beliefs, and expectations of the college experience (HERI, 2004b). Data are reported back to individual institutions. HERI also stores the results of the survey.

The second study included respondents who participated in the *Your First College Year* (YFCY). The YFCY is an instrument that is administered nationally to college students at the end of their freshmen year through HERI. The survey is designed to draw out information about the academic and personal development of first year college students (HERI, 2004a). It examines students' adjustment, as well as specific academic and extracurricular experiences during the course of their first year. Information is collected on student and academic services on campuses that are designed to meet the needs of first year students. Student interactions with faculty and peers are also reported. The survey provides an opportunity for students to self-report their academic achievement and current academic standing. Similar to the CIRP, data collected from the

YFCY are reported back to individual institutions as well as housed at HERI (HERI, 2004).

Criteria for sample selection required using both national surveys, the YFCY and CIRP. Four criteria were used for sample selection.

First year students enrolled for the 2001-2002 academic year could identify themselves as eligible to participate in this study by their response to two items on the CIRP survey (HERI, 2004b). Various definitions of FG exist (York-Anderson & Bowman, 1991). The definition used for this study most accurately depicts FGs that are at the greatest disadvantage in terms of adjustment to the college environment (Horn & Nunez, 2000). To be considered for this study, respondents needed to indicate on the CIRP that parents fell into the following categories of educational attainment: grammar school or less, some high school, high school graduate, postsecondary school other than college (HERI, 2004b).

This study also sought to examine adjustment as it related to enrollment status. The sample only included full-time students. Part-time students are already at a disadvantage for academic success (Pascarella & Terenzini, 1991). An item on the CIRP asks respondents to indicate whether they are enrolling as a full-time or part-time student. This study used only respondents who indicated they were enrolled full-time without any prior postsecondary education experience (HERI, 2004b).

The CIRP instrument, then, enabled me to identify full-time, FGs who enrolled in college in the fall of 2001. Identification numbers students reported on the CIRP was also key to the sample selection process. Sample selection required selecting FGs who completed the YFCY survey (HERI, 2004a). It is possible for HERI to link students' responses from the CIRP to the YFCY via student identification number. FGs needed to

have completed the YFCY in the spring of 2002 as well as the CIRP in the summer of 2001 to be considered for the sample (HERI, 2004a).

To ensure that only data from willing participants were included in the study, one final item on the YCFY was examined. This item asks for consent from participants. Students are asked permission to use their responses if colleges request data for additional research analyses (HERI, 2002). Only those individuals who provided consent were included in the sample.

Sample selection occurred using two primary methods. First, students who completed the 2001 CIRP survey and whose responses revealed they were full-time, FGs were identified. A list of student identification numbers for these FGs was compiled.

Once the list of full-time, first year FG identification numbers from the CIRP was compiled it was cross-referenced with the 2002 YFCY data. FGs, as identified by the CIRP, who also completed the 2002 YFCY comprised the sample for this study.

This nationally representative sample included all FGs who completed the 2002 YFCY survey and met the selection criteria. The sample for the present study included 2,099 first year, full-time FGs.

Instrumentation

The primary instrumentation for the study was the 2002 YFCY (HERI, 2002). A total of nine questions on the YFCY solicit general demographic information from participants. Demographic items include questions that ask for student identification number, gender, racial characteristics, and whether English is their native language. Two demographic questions gather enrollment information. One question asks students what year they first entered college and what year they entered the institution in which they are currently enrolled. The other question asks students to note their enrollment status (full-

time, part-time, not enrolled). Students are asked to indicate their current level of academic success by reporting their grade point average (GPA) from the term they most recently completed. Choices are A (3.75-4.0), A-/B+ (3.25, 3.74), B-/C+ (2.25-3.24), C (1.75-2.24), or C- or less (1.75 or below). Finally, a question asks students what they think they will do in Fall 2002, participants choose: attending their current institution, attending another institution, or not attending any institution (HERI, 2002).

Factors were defined as variables measured by the 2002 *Your First College Year Survey* data (HERI, 2004). Factors were assigned to five main areas: Student Background Characteristics, Agents of Socialization, Structural Characteristics, Institutional Environment, and Student Effort (Pascarella & Terenzini, 1991).

The YFCY instrument includes 143 statements grouped into 15 different sections. The present study examined items as they relate to five factors of student success (Background Characteristics, Student Effort, Agents of Socialization, Structural Characteristics, and Institutional Environment). Therefore, the descriptions of the 15 sections of the instrument that follow are discussed in terms of those five factors. For each section there is a specific format for the questions and associated responses (HERI, 2002).

The first section of the instrument touches on Agents of Socialization and Institutional Environment. Participants are asked how often they interact with people by phone, email, Instant Messenger, or in person. For all responses students indicate the frequency of interaction as measured by a six-point Likert scale. Choices range from interact daily to never interact. The manner in which interaction takes places is gathered from eight items. The first item asks how often participants speak with faculty during office hours. This item is followed by several other statements including how often

participants interact with faculty (outside office hours), academic advisors, and other college personnel. The frequency of peer interaction is solicited by two items. One asks participants how often they communicate with close friends at the institution where they are enrolled. The other item asks how often they communicate with close friends who are not at the same institution (HERI, 2002).

Students rate their satisfaction with components of the Institutional Environment in the next section of the survey that includes 11 items. A six-point Likert scale is used with options ranging from very satisfied to very dissatisfied. Participants also have the option of choosing no experience with a particular aspect of the institution on the Likert scale provided. Three items ask participants to indicate satisfaction with academic areas such as classroom facilities, computer facilities, and library facilities. Satisfaction with academic advising and tutoring are also rated. Next, participants rate their satisfaction with another aspect of the Institutional Environment, student services. Areas such as student housing, financial aid, student health, psychological counseling, and recreational facilities are rated according to participant satisfaction level. The final area freshmen rate according to satisfaction is their experience with orientation for new students (HERI, 2002).

The YFCY asks students to rate the degree to which they have successfully become familiar with the Institutional Environment during their freshmen year. There are four options participants choose to indicate how successful they have been in response to each statement: completely successful, fairly successful, somewhat successful, and unsuccessful. Freshmen are asked to rate themselves in six different areas including: understanding what professors expect of them academically, developing effective study

skills, adjusting to the academic demands of college, managing time effectively, getting to know faculty, and developing close friendships with other students (HERI, 2002).

In another section of the instrument student Background Characteristics are measured. Participants are asked to rate how they compare on select traits in relation to the average person their age. Students rate themselves on a five-point Likert scale that ranges from the highest 10% to the lowest 10%. A total of 12 items are listed. Items ask about student abilities including academic, artistic, computer, leadership, mathematical, public speaking, and writing. Other items ask students to indicate how they perceive themselves in relation to the average person their age in areas such as physical health, emotional health, intellectual self-confidence, social self-confidence, and self-understanding (HERI, 2002).

Interaction with Agents of Socialization, Background Characteristics, Institutional Environment and Student Effort are measured by another section of the survey. Eleven items ask participants to indicate how often they have engaged in various social and academic activities. Students select frequently, occasionally, or not at all for each item in the section. Two items ask how often they attended a religious service or discussed religion. Academic interactions are captured using items that ask them how often they participated in volunteer or community service work and discussed politics. The survey includes indicators of how participants spend time with peers. Items ask how often participants smoked cigarettes, drank beer, and drank wine or liquor. The Institutional Environment is measured by an item that asks how often participants socialized with someone of another racial/ethnic group. Two items gather information on Student Effort by asking freshmen how often they felt overwhelmed by all they had to do and how often they felt depressed during the past year.

Student Background Characteristics are gathered in a section that has a series of items that solicit information about goals and motivations. Eight items ask participants about the personal importance of several areas. Degree of importance is indicated by choosing one of four options: essential, very important, somewhat important, or not important. Students indicate the importance of career aspirations such as becoming an authority in a field, making theoretical contributions to science, and creating artistic work. Information on the importance of social activism is gathered through items that ask participants to indicate the importance of helping others who are in difficulty, influencing social values, and becoming a community leader. Finally, importance of personal aspirations is rated by participants through two items: integrating spirituality into my life and developing a meaningful philosophy in life (HERI, 2002).

The YFCY includes other items that gauge Student Effort and Institutional Environment. A section asks participants to respond to 12 items by indicating how often (frequently, occasionally, rarely, not at all) they experienced either specific feelings or situations. Statements measure how often during the freshmen year students felt lonely, worried about meeting new people, isolated from campus life, unsafe on campus, worried about health, feeling a need to break away from family to succeed in college, and intimidated by professors. Additional items ask how often students were bored in class and how often courses inspired students to think in new ways. Finally, statements in this section look at whether students have been able to balance external commitments with academic demands including: whether job responsibilities, family responsibilities, and social life interfered with schoolwork (HERI, 2002).

Structural Characteristics of the institution as it relates to the student's college experience is solicited from an item that asks participants to describe their living

arrangements during the past year. Freshmen participants may choose campus housing (college residence hall, suite, or other campus housing), private home/apartment, or other (HERI, 2002).

Institutional Environment is measured in a section with a variety of items that ask students to indicate how often (frequently, occasionally, rarely, not at all) certain activities were included in courses during their freshmen year. Group discussions, student presentations, formal lectures, research projects, multiple drafts of written work, group projects, weekly essay assignments, student evaluations of each other's work, field experiences, community service linked to coursework, student selected topics, laboratory component, and required on-line interaction with professors and classmates are the 13 items addressed in this section (HERI, 2002).

Several factors related to academic success are measured in another section of the instrument including Background Characteristics, Agents of Socialization, Structural Characteristics, and Institutional Environment. Eight items ask participants to indicate whether they have changed their career plans, decided to pursue a different major, declared a major, joined a social fraternity or sorority, enrolled in an honors course, participated in varsity athletics, enrolled in remedial courses, or transferred from another institution. In two final items students indicate if they have taken a college course or seminar specifically designed to help them adjust to college and enrolled in a formal program where a group of students takes two or more courses together (HERI, 2002).

The YFCY includes a section with 13 items that seek to measure Student Effort and Institutional Environment. Participants indicate how often (frequently, occasionally, rarely, not at all) they turned in assignments late, skipped class, came to class late, and turned in course assignments that did not reflect their best work. Participants are asked to

indicate how often they spoke up in class, discussed course content outside of class with students, studied with other students, worked with a professor on a research project, used the Internet for research or homework, and received tutoring. Students also indicate how often they participated in intramural sports, had difficulty getting along with roommates/housemates and how often they sought personal counseling (HERI, 2002).

A section on the YFCY measures whether exposure to the Institutional Environment facilitated cognitive and affective growth during the first year of college (12 items). Participants are asked to compare how they rate currently in comparison to how they rated when they entered college. Students rate themselves on a five-point Likert scale ranging from much stronger to much weaker. Items include cognitive areas such as general knowledge, analytical and problem solving skills, knowledge in a field or discipline, critical thinking skills, and library/research skills. Changes in affective areas such as knowledge of different races or cultures, religious beliefs and convictions, ability to get along with others, ability to work as part of a team, understanding problems in community, national issues, and global issues are also included in the section (HERI, 2002).

One question asks participants if they have concerns about financing their college education. Students have three options they may choose from, one being that they have no concern about financing their education. The other two options are some concern and major concerns (HERI, 2002).

Student Effort and Agents of Socialization are measured in a section that has 16 items that ask participants the hours per week (none, less than one hour, 1-2, 3-5, 6-10, 11-15, 16-20, 21-20, over 30) they spend engaged in certain activities. Social activities such as socializing with friends, partying, participating in student clubs, exercising, and

communicating via e-mail and Instant Messenger are included. Prayer/meditation, reading for pleasure, surfing the Internet, playing video games, and watching TV are other items that examine how students spend their time. There are also items that measure whether external commitments prevent students from engaging in academic and social events. Items include the time spent each week working for pay on campus, working for pay off campus, household/childcare duties, and commuting (HERI, 2002).

Finally, the YFCY includes a section that asks students to rate their satisfaction with seven items related to the Institutional Environment. The five-point Likert scale has options ranging from very satisfied to very dissatisfied. Items include amount of contact with faculty, opportunities for community service, relevance of coursework to everyday life, relevance of coursework to future career plans, overall quality of instruction, overall sense of community among students, and overall college experience (HERI, 2002). A complete copy of the YFCY appears in Appendix A.

Reliability and Validity

Reliability addresses the degree to which an instrument elicits consistent responses (Hinkle, Wiersma, & Jurs, 1988; Suskie, 1996). Different types of reliability can be assessed. For instance, test-retest reliability is an important consideration. Validity addresses the degree to which an instrument accurately measures what it is supposed to measure (Hinkle, Wiersma, & Jurs, 1988; Suskie, 1996). Construct and content validity are two assessments used to determine whether an instrument is valid.

The reliability and validity of the YFCY were established by HERI. The steps taken by HERI regarding the psychometric properties of the instrument are described in this section. A “split-half” reliability analysis was performed to determine reliability coefficients for items on the YFCY. Institutions, rather than individuals, were treated as

the unit of analysis. This method was used because YFCY data are most often reported as national or institutional aggregates (e.g., the percentage of first-year students who are satisfied with college or agree with a particular value statement). Therefore, respondents were randomly divided into two groups per institution. Item-by-item means were calculated for each group and then reliability coefficients were calculated for all items by correlating the means across the institutional sub-samples. Reliability coefficients ranged from .10 to .97 with an average reliability coefficient of .56 (personal communication with HERI, 2004). The complete statement provided by HERI regarding the reliability and validity of the instrument is included in Appendix B.

Regarding validity of the YFCY, HERI focused on two measures of validity: construct validity and content validity. In assessment of validity, the unit of analysis was the student rather than the institution (personal communication with HERI, 2004).

Construct validity of the YFCY instrument was established by conducting a principal components factor analysis of all of the items on the survey. Principal components factor analysis was conducted to determine if survey items that appear to relate to one another actually do cluster statistically (personal communication with HERI, 2004).

Nineteen factors were extracted and rotated using varimax rotation techniques. Even after dropping survey items that loaded at less than .40, more than 100 items from the YFCY instrument were included in these factors. Chronbach's alpha values ranged from .31 to .89 (personal communication with HERI, 2004).

Content validity on the YFCY was established through use of an expert panel. The panelists were familiar with the constructs that the survey measures. Experts were second-year students at UCLA who had completed their first year of college in Spring

2001. Students were invited to participate in one of three focus groups. In each focus group, participants were asked to complete a set of survey questions and then asked to reflect on the clarity and relevance of each question and stem. Additionally, participants were asked to explain their understanding of the response options. Feedback from students in the focus groups indicated a high degree of content validity for the YFCY instrument (personal communication with HERI, 2004).

Reliability and validity procedures were conducted by HERI using a nationally representative sample of both NFGs and FGs. This study used a sub-set of the national data that included only FGs. Therefore, additional steps needed to be taken on the sub-set of the data being used for this study to ensure reliability and validity. Those steps will be described in the Data Analysis section of this chapter.

Data Collection Procedure

Data collection required several steps. First, it was necessary to obtain approval from the Institutional Review Board for Research Involving Human Subjects (IRB) at the researcher's institution (See Appendix C). Once IRB approval was obtained, data collection was a multi-step process.

National data from the 2002 YFCY are stored by HERI at UCLA. I submitted a letter and detailed research proposal to HERI asking for access to the subset of the national data sample that would be needed to complete this study.

The proposal included a brief literature review, purpose of the study and research questions. Specifications for the sample selection criteria were also included in the proposal. I asked for data from YFCY participants who were full-time students and whose parents had not completed a bachelor's degree.

Access to the national data sample was granted by HERI. At HERI's request, I signed a consent form for data use. The form was faxed to HERI and once it was received the data sample was sent via email in an SPSS file according to specifications outlined in the research proposal.

Data Analysis Procedure

Data analysis for this study consisted of several procedures. Since this study used a subset of the national data set, a separate factor analysis was run to ensure reliability and validity. A combination of descriptive statistics and logistic regression was used to analyze the data. SPSS, a statistical software package, generated frequency distributions, means, and logistic regression models.

In preparation for data analysis, a factor analysis was conducted using only the 2,099 FGs who comprised the sample for this study. Factor analysis was used for the 143 items on the YFCY to determine if clusters existed and the number of factors could be reduced (Cramer, 2003; Green & Salkind, 2003). Steps involved in conducting the factor analysis were similar to those used by HERI on the national sample with two notable exceptions.

First, GPA served as the dependent variable for this study. The sample of FG students was divided into two categories based on their response to the 2002 YFCY survey question asking them their GPA (HERI, 2004). The first category was comprised of FGs who indicated they were more successful during their first year of college. The second category was comprised of FGs who indicated they were academically less successful. Greater academic success was defined as a GPA of 1.75 or better. A GPA of below a 1.75 or lower was defined as academically less successful. Therefore, GPA was not included in the factor analysis conducted on the FG sample.

HERI's factor analysis on responses from all participants in the 2002 YFCY study revealed 19 factors. (refer to Table 1). My study grouped factors related to academic success according to Pascarella and Terenzini's model (1991). Therefore, rather than using 19 factors I requested five factors using SPSS. The 19 factors were predicted to load on one of the five factors related to academic success.

Factor analysis on the data set for this study was conducted using a Varimax rotation procedure (Cramer, 2003; Green & Salkind, 2003). The analysis revealed five factors that included 80 of the 143 survey items from the 2002 YFCY.

Table 2 describes the original 19 factors from HERI's factor analysis and explains which of the five factors each variable from the YFCY was predicted to load on based on Pascarella and Terenzini's model (1991). Several of the variables did not load as predicted. Table 2 explains whether the variables either loaded on a different factor or did not load on any of the five.

Table 3 identifies what variables are associated with each of the five factors based on the factor analysis conducted on the data set for this study. The factor loading score is provided for each item (Cramer, 2003; Green & Salkind, 2003). Sixty three (63) items did not load on any factors. The small number of students who responded to these items may be the reason they did not load on any factor. A complete list of the items from the 2002 YFCY and the associated factors used in this study are included in Table 4. Consistency in scores among items that had a loading of at least .3 (Chronbach's alpha) for each factor is also provided in Table 4 (Cramer, 2003; Green & Salkind, 2003). Once the factor analysis was complete sample characteristics were described through the use of frequency distributions and percentages on the demographic variables: Race, Gender, Financial Need, and Language Ability.

Table 1

Correlations between YFCY Items and 19 Factors using 2002 YFCY Data based on National Sample Provided by HERI

Factor and Variable	Factor Loading
Satisfaction with College (Cronbach's alpha = .83)	
Satisfaction: Relevance of coursework to everyday life	.70
Satisfaction: Overall quality of instruction	.70
Satisfaction: Relevance of coursework to future career plans	.68
Satisfaction: Amount of contact with faculty	.64
Satisfaction: Opportunities for community service	.57
Satisfaction: Overall sense of community among students	.56
Satisfaction: Overall college experience	.54
Change in Understanding of Local & Global Issues (Cronbach's alpha = .83)	
Self-rated change: Understanding of national issues	.90
Self-rated change: Understanding of global issues	.89
Self-rated change: Understanding of community problems	.53
Self Confidence (Cronbach's alpha = .82)	
Self-rating: Social self-confidence	.75
Self-rating: Self-understanding	.71
Self-rating: Intellectual self-confidence	.71
Self-rating: Leadership ability	.65
Self-rating: Public speaking ability	.62
Self-rating: Emotional health	.62
Satisfaction with Campus Facilities and Services (Cronbach's alpha = .80)	
Satisfaction: Computer facilities	.68
Satisfaction: Classroom facilities	.67
Satisfaction: Library facilities and other services	.66
Satisfaction: Tutoring and other academic assistance	.58
Satisfaction: Student health center/services	.51
Satisfaction: Financial aid services	.51
Satisfaction: Psychological counseling services	.46

Table 1 (*continued*)

Factor and Variable	Factor Loading
Academic Success (Cronbach's alpha = .77)	
Self-rated success: Adjusting to academic demands of college	.77
Self-rated success: Developing effective study skills	.74
Self-rated success: Managing your time effectively	.71
Self-rated success: Understanding what professors expect	.62
Current GPA	.45
Self-Assessed Cognitive Development (Cronbach's alpha = .77)	
Self-rated change: Analytical and problem-solving skills	.73
Self-rated change: Critical thinking skills	.71
Self-rated change: General knowledge	.68
Self-rated change: Knowledge of a particular field or discipline	.62
Frequency: Courses inspired me to think in new ways	.45
Religiousness and Spirituality (Cronbach's alpha = .76)	
Frequency: Attended a religious service	.77
Hours per week spent praying/meditating	.72
Goal: Integrate spirituality into life	.70
Frequency: Discussed religion	.58
Self-rated change: Religious beliefs and convictions	.58
Student-Centered Classroom Practices (Cronbach's alpha = .75)	
Frequency: Multiple drafts of written work	.74
Frequency: Student evaluations of each others work	.65
Frequency: Weekly essay assignments	.64
Frequency: Research projects	.61
Frequency: Group projects	.47
Frequency: Student presentations/Performances	.45
Frequency: Group discussions	.41
Leadership and Community Orientation (Cronbach's alpha = .75)	
Goal: Influence social values	.70
Goal: Help promote racial understanding	.65
Goal: Help others in difficulty	.63
Goal: Become a community leader	.63

Table 1 (*continued*)

Factor and Variable	Factor Loading
Goal: Become authority in own field	.54
Goal: Develop meaningful philosophy of life	.48
Poor Social and Emotional Adjustment (Cronbach's alpha = .73)	
Frequency: Felt worried about health	.63
Frequency: Felt unsafe on this campus	.60
Frequency: Felt intimidated by professors	.59
Frequency: Felt lonely or homesick	.56
Frequency: Felt worried about meeting new people	.54
Frequency: Felt depressed	.49
Frequency: Felt isolated from campus life	.48
Partying and Socializing (Cronbach's alpha = .71)	
Frequency: Drank beer	.83
Frequency: Drank wine or liquor	.81
Hours per week spent partying	.76
Frequency: Smoked cigarettes	.63
Hours per weeks spent socializing with friends	.43
Interaction with Faculty and Staff (Cronbach's alpha = .68)	
Interacted with faculty during office hours	.74
Interacted with faculty outside of office hours	.72
Interacted with academic advisors or counselors	.62
Interacted with other college personnel	.57
Interacted with TA's during office hours	.49
Academic Disengagement (Cronbach's alpha = .67)	
Frequency: Came late to class	.72
Frequency: Skipped class	.64
Frequency: Turned in "sub par" assignments	.58
Frequency: Turned in course assignment late	.55
External Commitments (Cronbach's alpha = .64)	
Hours per week spent working (for pay) off campus	.70
Hours per week spent commuting	.69

Table 1 (*continued*)

Factor and Variable	Factor Loading
Hours per week performing household/childcare duties	.63
Frequency: That family responsibilities interfered w/schoolwork	.52
Frequency: That job responsibilities interfered w/schoolwork	.51
Familiarity with Computer Technology (Cronbach's alpha = .63)	
Hours per week spent surfing the internet	.81
Hours per week spent communicating via internet	.74
Hours per week spent playing video/computer games	.53
Self-rating: Computer skills	.43
Self-Assessed Cooperativeness and Awareness of Others (Cronbach's alpha = .61)	
Self-rated change: Ability to get along with others	.65
Self-rated change: Ability to work as part of a team	.64
Self-rated change: Knowledge of different races/cultures	.53
Academic Abilities (Cronbach's alpha = .60)	
Self-rating: Academic ability	.68
Self-rating: Mathematical ability	.66
Enrolled in honors course	.51
Current GPA	.47
Physical Health and Athletic Involvement (Cronbach's alpha = .58)	
Hours per week spent exercising or participating in sports	.77
Participated in varsity/intercollegiate athletics	.74
Self-rating: Physical health	.57
Frequency: Participated in intramural sports	.54
Interaction with Fellow Students (Cronbach's alpha = .56)	
Frequency: Studied with other students	.68
Frequency: Discussed course content with students outside of class	.61
Hours per week participating in student clubs/groups	.61
Frequency: Participated in volunteer or community service work	.58
Self-rated success: Developing close friendships	.57
Joined a social fraternity or sorority	.42

Table 2

98 YFCY Items from Fall 2002 Dataset, Predicted FG Factor, Actual Assignment of Item to FG Factor, and Items that Did Not Load on Any FG Factor

2002 HERI Factors Variable	Predicted FG Factor	Loads on Other Factors	Does Not Load on FG Factor
Satisfaction with College			
Satisfaction: Relevance of coursework to everyday life	IE		
Satisfaction: Overall quality of instruction	IE	IE	
Satisfaction: Relevance of coursework to future career plans	IE		
Satisfaction: Amount of contact with faculty	IE		
Satisfaction: Opportunities for community service	IE	IE	
Satisfaction: Overall sense of community among students	IE		
Satisfaction: Overall college experience	IE	IE	
Change in Understanding of Local & Global Issues			
Self-rated change: Understanding of national issues	IE		
Self-rated change: Understanding of global issues	IE		
Self-rated change: Understanding of community problems	IE		
Self Confidence			
Self-rating: Social self-confidence	BC		
Self-rating: Self-understanding	BC		
Self-rating: Intellectual self-confidence	BC		
Self-rating: Leadership ability	BC		

Table 2 (*continued*)

2002 HERI Factors Variable	Predicted FG Factor	Loads on Other Factors	Does Not Load on FG Factor
Self-rating: Public speaking ability	BC		
Self-rating: Emotional health	BC		
Satisfaction with Campus Facilities and Services			
Satisfaction: Computer facilities	IE		
Satisfaction: Classroom facilities	IE		
Satisfaction: Library facilities and other services	IE		
Satisfaction: Tutoring and other academic assistance	IE		X
Satisfaction: Student health center/services	IE		X
Satisfaction: Financial aid services	IE		X
Satisfaction: Psychological counseling services	IE		X
Academic Success			
Self-rated success: Adjusting to academic demands of college	SE		
Self-rated success: Developing effective study skills	SE		
Self-rated success: Managing your time effectively	SE		
Self-rated success: Understanding what professors expect	SE		
Current GPA	-		
Self-Assessed Cognitive Development			
Self-rated change: Analytical and problem-solving skills	IE		
Self-rated change: Critical thinking skills	IE		
Self-rated change: General knowledge	IE		
Self-rated change: Knowledge of a particular field or discipline	IE		

Table 2 (*continued*)

2002 HERI Factors Variable	Predicted FG Factor	Loads on Other Factors	Does Not Load on FG Factor
Frequency: Courses inspired me to think in new ways	IE		
Religiousness and Spirituality			
Frequency: Attended a religious service	BC		X
Hours per week spent praying/meditating	BC		X
Goal: Integrate spirituality into life	BC		
Frequency: Discussed religion	BC		X
Self-rated change: Religious beliefs and convictions	BC		X
Student-Centered Classroom Practices			
Frequency: Multiple drafts of written work	IE		X
Frequency: Student evaluations of each others work	IE		X
Frequency: Weekly essay assignments	IE		X
Frequency: Research projects	IE		
Frequency: Group projects	IE		
Frequency: Student presentations/Performances	IE		X
Frequency: Group discussions	IE		
Leadership and Community Orientation			
Goal: Influence social values	BC		
Goal: Help promote racial understanding	BC		X

Table 2 (*continued*)

2002 HERI Factors Variable	Predicted FG Factor	Loads on Other Factors	Does Not Load on FG Factor
Goal: Help others in difficulty	BC	IE	
Goal: Become a community leader	BC	IE	
Goal: Become authority in own field	BC	IE	
Goal: Develop meaningful philosophy of life	BC		X
Poor Social and Emotional Adjustment			
Frequency: Felt worried about health	SE		
Frequency: Felt unsafe on this campus	SE		
Frequency: Felt intimidated by professors	SE		
Frequency: Felt lonely or homesick	SE		
Frequency: Felt worried about meeting new people	SE		
Frequency: Felt depressed	SE		
Frequency: Felt isolated from campus life	SE		
Partying and Socializing			
Frequency: Drank beer	AS		
Frequency: Drank wine or liquor	AS		
Hours per week spent partying	AS		
Frequency: Smoked cigarettes	AS		
Hours per weeks spent socializing with friends	AS		
Interaction with Faculty and Staff			
Interacted with faculty during office hours	AS	IE	

Table 2 (*continued*)

2002 HERI Factors Variable	Predicted FG Factor	Loads on Other Factors	Does Not Load on FG Factor
Interacted with faculty outside of office hours	AS	IE	
Interacted with academic advisors or counselors	AS	IE	
Interacted with other college personnel	AS	IE	
Interacted with TA's during office hours	AS	IE	
Academic Disengagement			
Frequency: Came late to class	SE		
Frequency: Skipped class	SE	AS	
Frequency: Turned in "sub par" assignments	SE		
Frequency: Turned in course assignment late	SE		
External Commitments			
Hours per week spent working (for pay) off campus	SE	SC	
Hours per week spent commuting	SE	SC	
Hours per week performing household/childcare duties	SE	SC	
Frequency: That family responsibilities interfered w/schoolwork	SE		
Frequency: That job responsibilities interfered w/schoolwork	SE		
Familiarity with Computer Technology			
Hours per week spent surfing the internet	SE		X
Hours per week spent communicating via internet	SE		X
Hours per week spent playing video/computer games	SE		X
Self-rating: Computer skills	BC		X

Table 2 (*continued*)

2002 HERI Factors Variable	Predicted FG Factor	Loads on Other Factors	Does Not Load on FG Factor
Self-Assessed Cooperativeness and Awareness of Others			
Self-rated change: Ability to get along with others	IE		
Self-rated change: Ability to work as part of a team	IE		
Self-rated change: Knowledge of different races/cultures	IE		
Academic Abilities			
Self-rating: Academic ability	BC		X
Self-rating: Mathematical ability	BC		X
Enrolled in honors course	BC		X
Current GPA	-		
Physical Health and Athletic Involvement			
Hours per week spent exercising or participating in sports	AS		
Participated in varsity/intercollegiate athletics	AS		
Self-rating: Physical health	BC	BC	
Frequency: Participated in intramural sports	AS		
Interaction with Fellow Students			
Frequency: Studied with other students	IE		
Frequency: Discussed course content with students out of class	IE		
Hours per week participating in student clubs/groups	IE	IE	
Frequency: Participated in volunteer or community service work	IE	IE	
Self-rated success: Developing close friendships	AS		X

Joined a social fraternity or sorority AS X

Note: IE = Institutional Environment BC = Background Characteristics AS = Agents of Socialization SE = Student Effort SC = Structural Characteristics

Table 3

2002 YFCY Loadings on Five FG Factors Based on Responses from FGs (N= 2,099)

Items	IE Factor 1	SE Factor	BC Factor 3	AS Factor 4	SC Factor 5
Interacted with faculty during office hours	.306				
Interacted with faculty outside of office hours	.322				
Interacted with other college personnel	.308				
Interacted with your family					-.342
Satisfaction: Classroom facilities	.458				
Satisfaction: Computer facilities	.303				
Satisfaction: Library facilities and services	.313				
Satisfaction: Academic advising	.385				
Satisfaction: Student housing					.664
Satisfaction: Orientation for new students	.348				
Self-rated success: Understanding what professors expect		-.411			
Self-rated success: Developing effective study skills		-.421			
Self-rated success: Adjusting to academic demands		-.442			
Self-rated success: Managing time effectively		-.408			
Self-rated success: Getting to know faculty	.422				
Self-rated success: Developing close friendships with students				.305	
Self-rating: Emotional health			-.449		
Self-rating: Leadership ability			.641		
Self-rating: Physical health		-.333			
Self-rating: Public speaking ability			.580		
Self-rating: Intellectual self-confidence			.630		
Self-rating: Social self-confidence			.660		

Table 3 (continued)

Items	IE Factor 1	SE Factor 2	BC Factor 3	AS Factor 4	SC Factor 5
Self-rating: Self-understanding			.573		
Self-rating: Writing ability			.348		
Frequency: Smoked cigarettes				.343	
Frequency: Drank beer				.721	
Frequency: Drank wine or liquor				.690	
Frequency: Felt overwhelmed		.402			
Frequency: Felt depressed		.526			
Goal: Becoming authority in own field			.329		
Goal: Influencing social values	.326		.387		
Goal: Helping others in difficulty	.338				
Goal: Becoming a community leader					
Goal: Integrating spirituality into life					
Frequency: Felt lonely or homesick		.426	.328		
Frequency: Felt worried about meeting new people		.319			
Frequency: Felt isolated from campus life		.369			
Frequency: Felt need to break away from family to succeed		.311			
Frequency: Felt unsafe on this campus		.356			
Frequency: Felt worried about health		.436			
Frequency: Felt intimidated by professors		.433			
Frequency: Felt courses inspired new thinking	.424				
Frequency: Felt job interfered with schoolwork		.323			
Frequency: Felt family interfered with schoolwork		.368			
Frequency: Felt social life interfered with schoolwork		.366			

Table 3 (continued)

Items	IE Factor 1	SE Factor 2	BC Factor 3	AS Factor 4	SC Factor 5
First Year Primary Living Place					-.812
Frequency: Group discussions	.358				
Frequency: Student presentations and performances	.364				
Frequency: Research projects	.309				
Group Projects	.346				
Frequency: Community service linked to coursework	.330				
Frequency: Student-selected topics	.351				
Frequency: Turned in course assignment late		.350			
Frequency: Spoke up in class			.416		
Frequency: Discussed courses with other students	.335				
Frequency: Studied with other students	.316				
Frequency: Came late to class		.306		.400	
Frequency: Skipped class					
Frequency: Turned in "subpar" assignments		.392		.300	
Participated in intramural sports		.309			
Didn't get along with roommate(s)					
Self-rated change: General knowledge	.434				
Self-rated change: Analytical and problem-solving skills	.430				
Self-rated change: Knowledge of particular field	.427				
Self-rated change: Critical thinking skills	.487				
Self-rated change: Knowledge of different races/cultures	.367				
Self-rated change: Ability to get along with others	.409				
Self-rated change: Library/research skills	.388				
Self-rated change: Ability to work as part of team	.437				

Table 3 (continued)

Items	IE Factor 1	SE Factor 2	BC Factor 3	AS Factor 4	SC Factor 5
Self-rated change: Understanding of community problems	.447				
Self-rated change: Understanding of national issues	.362				
Self-rated change: Understanding of global issues	.348				
Hours per week spent socializing with friends				.510	
Hours per week spent exercising or sports				.401	
Hours per week spent partying				.749	
Hours per week spent working for pay off campus					-.581
Hours per week spent on household/childcare duties					-.492
Hours per week spent commuting					-.644
Satisfaction: Amount of contact with faculty	.526				
Satisfaction: Opportunities for community service	.466				
Satisfaction: Relevance of coursework to life	.601				
Satisfaction: Relevance of coursework to career	.585				
Satisfaction: Overall quality of instruction	.590				
Satisfaction: Overall sense of community among students	.456				
Satisfaction: Overall college experience	.478				

1 = Institutional Environment 2 = Student Effort 3 = Background Characteristics 4 = Agents of Socialization

5 = Structural Characteristics

Table 4

Factor Analysis Results 2002 YFCY Data Using FGs

Factor and Variable	Highest Factor Loading Above .300
Institutional Environment (Cronbach's alpha = .88)	
Interacted with faculty during office hours	.306
Interacted with faculty out of office hours	.322
Interacted with other college personnel	.308
Satisfaction: Classroom facilities	.458
Satisfaction: Computer facilities	.303
Satisfaction: Library facilities/services	.313
Satisfaction: Academic advising	.385
Satisfaction: Orientation for new students	.348
Self-rated success: Getting to know faculty	.422
Goal: Helping others in difficulty	.326
Frequency: Courses inspired new thinking	.424
Frequency: Group discussions	.358
Frequency: Student presentations/performances	.364
Frequency: Research projects	.309
Frequency: Group projects	.346
Frequency: Community service linked to coursework	.330
Frequency: Student-selected topics	.351
Frequency: Discussed course with other students	.335
Frequency: Studied with other students	.316
Self-rated change: General knowledge	.434
Self-rated change: Analytical/problem-solving skills	.430
Self-rated change: Knowledge of particular field	.427
Self-rated change: Critical thinking skills	.487
Self-rated change: Knowledge of different races/cultures	.367
Self-rated change: Ability to get along with others	.409
Self-rated change: Library/research skills	.388
Self-rated change: Ability to work as part of a team	.437
Self-rated change: Understanding of community problems	.447
Self-rated change: Understanding of national issues	.362
Self-rated change: Understanding of global issues	.348

Table 4 (*continued*)

Factor and Variable	Factor Loading
Satisfaction: Amount of contact with faculty	.526
Satisfaction: Opportunities for community service	.466
Satisfaction: Relevance of coursework to life	.601
Satisfaction: Relevance of coursework to career	.585
Satisfaction: Overall quality of instruction	.590
Satisfaction: Overall sense of community among students	.456
Satisfaction: Overall college experience	.478
Student Effort (Cronbach's alpha = .59)	
Self-rated Success: Understanding what professors expect	-.411
Self-rated Success: Developing effective study skills	-.421
Self-rated Success: Adjusting to academic demands	-.442
Self-rated Success: Managing time effectively	-.408
Self-rating: Physical Health	-.333
Didn't get along with roommate(s)	.309
Frequency: Turned in "subpar" assignments	.392
Frequency: Came late to class	.306
Frequency: Turned in course assignment late	.350
Frequency: Social life interfered with schoolwork	.366
Frequency: Felt lonely or homesick	.426
Frequency: Felt worried about meeting new people	.319
Frequency: Felt isolated from campus life	.369
Frequency: Felt need to break away from family to succeed	.311
Frequency: Felt unsafe on this campus	.356
Frequency: Felt worried about health	.436
Frequency: Felt intimidated by professors	.433
Frequency: Felt overwhelmed	.402
Frequency: Felt depressed	.526
Frequency: Job interfered with schoolwork	.323
Frequency: Family interfered with schoolwork	.368

Table 4 (continued)

Factor and Variable	Factor Loading
Background Characteristics (Cronbach's alpha = .83)	
Frequency: Spoke up in class	.416
Goal: Integrating spirituality into life	.328
Goal: Becoming authority in own field	.329
Goal: Influencing social values	.387
Goal: Becoming a community leader	.470
Self-rating: Emotional health	.449
Self-rating: Leadership ability	.641
Self-rating: Public speaking ability	.580
Self-rating: Intellectual self-confidence	.630
Self-rating: Social self-confidence	.660
Self-rating: Self-understanding	.573
Self-rating: Writing ability	.348
Agents of Socialization (Cronbach's alpha = .71)	
Self-rated success: Developing close friendships with students	.305
Hours per week spent socializing with friends	.510
Hours per week spent exercising or sports	.401
Hours per week spent partying	.749
Participated in intramural sports	.300
Frequency: Skipped class	.400
Frequency: Smoked cigarettes	.343
Frequency: Drank beer	.721
Frequency: Drank wine or liquor	.690
Structural Characteristics (Cronbach's alpha = .22)	
Frequency: Interacted with close friends elsewhere	-.342
First Year Primary Living Place	-.812
Hours per week: Working for pay off-campus	-.581

Table 4 (*continued*)

Factor and Variable	Factor Loading
Hours per week: Household/childcare duties	-.492
Satisfied with: Student Housing	.664
Hours per week spent: Commuting	-.644

Logistic regression was used to determine whether the five factors are significant predictors of academic success among FGs. Logistic regression was used because the dependent variable (more academically successful, less successful academically) was a dichotomous variable (Green & Salkind, 2003).

Randomly selected split-halves was used to create the logistic regression sample. To address the first research question the data were run to identify regression models for academically more successful and academically less successful FGs. Logistic regression allowed me to determine whether there were significant differences between academically more successful and academically less successful FGs on the five factors (Green & Salkind, 2003).

Next, logistic regression was used to address the remaining research questions. Four additional regression models were conducted. In each case, one demographic variable (Race, Gender, Financial Need, Language Ability) was added to each of the models generated to address the research questions. The technique allowed me to determine whether there is a relationship between Race, Gender, Financial Need, and Language Ability and factors related to academic success among FGs (Green & Salkind, 2003).

In conclusion, the purpose of this study was to examine what factors predict the academic success of first-year, full-time FGs. Furthermore, this study examined whether there is a relationship between Race, Gender, Financial Need, and Language Ability and factors related to academic success among FGs. The methodology described in this chapter was deemed sufficient to address the research questions posed in the study.

Chapter Four

Results of Study

The purpose of this chapter is to report the findings from the data analysis, following the procedures outlined in Chapter Three. First, the sample is described by looking at participants in relation to characteristics the literature indicates are associated with first generation students (FGs). This is followed by an examination of the demographic variables as they pertain to the respondents of this study. Then findings related to each of the five research questions are described.

Characteristics Associated with First Generation Students

The data set for this study provided an opportunity to look at the entering characteristics of the 2,099 FGs who comprised the sample. However, the number of FGs in higher education in general is much higher and these respondents might have differed in some important ways from other FGs. The literature describes ways in which FGs may be at a disadvantage for academic success during their first-year of college due to characteristics they possess prior to enrollment. The sample for this study was examined to determine whether they reflected some of those same characteristics.

As noted previously, the sample for this study was a sub-set of those who participated in the Fall 2001 administration of the *Cooperative Institutional Research Program* (CIRP) survey and the Spring 2002 administration of the *Your First College Year* (YFCY) survey. Both surveys are administered by the Higher Education Research Institute (HERI). The CIRP served primarily to identify the FGs included in this sample as that is the one of these two surveys that asks participants to report the education level of their parents.

The CIRP is a nationally administered survey that is designed to elicit information from participants about their demographic characteristics, attitudes, values, beliefs, and expectations of the college experience (HERI, 2004b). HERI reports annually on national norms revealed by the CIRP survey.

The data set provided by HERI for this study had FGs' responses to the 2002 administration of the YFCY. Also included were the FGs' responses to the 2001 CIRP. Therefore, it was possible to compare the FGs' responses to the 2001 CIRP to the 2001 national norms for the CIRP as reported by HERI. This comparison provided an opportunity to see if the sample for this study reflected characteristics and indicators the literature suggests are generally found among FGs. National norms, as reported by HERI, do not make a distinction between the number of NFGs and FGs that are included in the statistical analysis used to determine the national norms for the CIRP survey. Therefore, the following comparison between FGs' responses on the CIRP and the CIRP national norms is meant to illustrate areas in which FGs differ from national norms in relation to the literature.

The literature emphasizes six major areas in regard to the differences between FGs and non-first generation students (NFGs). As identified in Chapter Two, academic preparation prior to college enrollment (Choy, 2001; Hahs-Vaughn, 2004; Riehl, 1994; Warburton, Bugarin, & Nunez, 2001), psychological variables that relate to self-concept (Bryson, Smith, & Vineyard 2002; Jackson, Smith, & Hill, 2003; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Sedlacek, 2004), degree aspirations (Hahs-Vaughn, 2004), financial need (Bui, 2002; Somers, Woodhouse, & Cofer, 2004), enrollment patterns (Choy, 2001), and demographic characteristics (Bui, 2002; Choy, 2001; Ishitani, 2003;

Kiang, 1992; Nunez & Cuccaro-Alamin, 1998) are ways in which FGs differ from national norms. Characteristics such as these impact the academic success of FGs during college (Ishitani, 2003). Data about the FGs in this study and the national CIRP norms were examined to see if the participants differed in some important way. When it was not possible to determine whether FGs differed from 2001 national norms as presented by the CIRP, additional data sources were examined.

In terms of academic preparation prior to enrollment, the FGs used in this study appear to be similar to 2001 national norms in relation to two distinct areas: high school preparation and standardized test scores. Trends relative to this sample should be interpreted within the context of the literature.

First, FGs in this sample appear to have similar academic preparation to those included in the 2001 national CIRP norms (HERI, 2001). Table 5 illustrates FGs have about the same number of years of English, Mathematics, Physical Science, and Biological Science courses when compared to 2001 national norms. Literature regarding FG high school academic preparation stresses it is the level of course FGs take, rather than the number of courses that influences academic success (Horn & Nunez, 2000). Therefore, care should be taken when interpreting this finding.

In terms of standardized test scores, the literature describes FGs as having lower scores (Riehl, 1994). It was possible to determine the average FG Scholastic Aptitude Test (SAT) score from the data set provided by HERI for the sample used in this study. However, HERI did not report 2001 national norms in regard to SAT score for the CIRP. Therefore, I felt it was necessary to examine another source that did report national averages in regard to 2001 SAT score. When compared to national norms as presented by

Table 5

Characteristics of FG Participants Compared to 2001 National Data Set (N=2,062)

Characteristic	First Generation %	National %
High School Preparation		
English (4 years)	98.2	97.9
Mathematics (3 years)	98.4	98.1
Physical Science (2 Years)	53.4	57.8
Biological Science (2 years)	42.9	44.1
Need Tutoring or Remedial Work		
English	12.2	9.3
Mathematics	24.5	24.4
Writing	15.0	11.3
Above Average or Highest 10%		
Academic Ability	63.0	67.9
Intellectual Self-confidence	51.9	58.9
Social Self-confidence	42.8	50.7
Self-understanding	48.7	55.5
Understanding of Others	60.9	65.6
Writing Ability	36.6	45.9
Highest Academic Degree Aspiration		
Bachelor's	26.0	23.3
Master's	46.3	43.1
Financial Need		
Family Resources		
None	14.9	20.1
Less than \$1,000	17.8	12.5
\$1,000-\$2,000	19.8	15.1
\$3,000-\$5,999	18.5	14.6
\$6,000-\$9,999	13.4	12.1
\$10,000 +	15.6	25.6
My Own Resources		
None	17.2	38.9
Less than \$1,000	34.4	27.5
\$1,000-\$2,000	34.5	23.4
\$3,000-\$5,999	9.8	7.0
\$6,000-\$9,999	2.6	1.8
\$10,000 +	1.6	1.3
Aid Need Not Be Repaid		
None	10.0	36.1
Less than \$1,000	8.6	8.2
\$1,000-\$2,000	15.9	17.2
\$3,000-\$5,999	17.5	14.3
\$6,000-\$9,999	17.5	10.4
\$10,000 +	30.5	13.9

Table 5 (continued)

Characteristic	First Generation %	National %
Aid Must Be Repaid		
None	20.7	55.2
Less than \$1,000	5.4	4.3
\$1,000-\$2,000	26.3	16.5
\$3,000-\$5,999	22.1	11.9
\$6,000-\$9,999	15.7	6.6
\$10,000 +	9.8	5.6
Other		
None	84.0	95.0
Less than \$1,000	7.1	2.1
\$1,000-\$2,000	4.6	1.3
\$3,000-\$5,999	1.9	0.6
\$6,000-\$9,999	1.4	0.3
\$10,000 +	1.1	0.6
Very Important in Influencing Decision to Attend this College		
I was offered Financial Assistance	51.8	33.2
I was Offered		
A Merit-Based Scholarship	31.9	21.6
A Need-Based Scholarship	25.2	12.3
English Speaking Ability		
English is Native Language	88.5	91.9
English is not Native Language	11.5	8.1

Table 6

*Average SAT Scores of FG Participants Compared to 2001 National Average
(N=2,062)*

Characteristic	First Generation Sample	National
Combined Average SAT	1073	1020
Average Verbal SAT Score	531	506
Average Math SAT Score	542	514

the national College Board, FGs in this sample had slightly higher standardized test scores (College Board, 2001). Refer to Table 6 for these results.

FGs rate themselves slightly lower in several areas related to self-concept (Bryson, Smith, & Vineyard 2002; Jackson, Smith, & Hill, 2003; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Sedlacek, 2004). When compared to 2001 national norms as reported by the CIRP, FGs reflect this characteristic (HERI, 2001). FGs who comprised the sample used for this study rated themselves lower in relation to others in academic ability, intellectual self-confidence, social self-confidence, self-understanding, understanding of others, and writing ability. Similar to the national norms, FGs did not see themselves as needing additional tutoring and remedial work in college prior to enrollment (refer to Table 5).

The literature describes FGs as having lower degree aspirations than peers (Hahs-Vaughn, 2004). In relation to the 2001 national norms reported by HERI (2001), FGs do not appear to have lower degree aspirations than their peers (refer to Table 5).

In regard to Financial Need, several distinct differences between FGs in this data set and 2001 CIRP national norms were evident (HERI, 2001). Table 5 illustrates FGs who comprise the data set for this study require more family financial resources, more of their own financial resources, and more aid to pay for the cost of college than the national sample. More FGs indicated they would borrow money for college. This is consistent with the literature in regard to the financial need FGs demonstrate (Bui, 2002; Somers, Woodhouse, & Cofer, 2004).

There are two noteworthy characteristics that surfaced in regard to the FGs in this sample. FGs indicated a higher portion of their aid was coming from aid that need not be

repaid than peers nationally. Furthermore, when compared to peers nationally, FGs in this sample were more likely to indicate that being offered a need-based scholarship and/or a merit-based scholarship was very important in influencing their decision to attend the college where they enrolled for their first year (refer to Table 5).

Enrollment patterns are another area identified by the literature as having an effect on the academic success of FGs while enrolled in college (Choy, 2001). Interestingly enough, among this sample, FGs were more likely to enroll at private institutions. National norms on the 2001 CIRP survey are not reported in regard to whether entering freshmen are more likely to enroll at public or private institutions. However, other sources of national norms pertaining to freshmen enrollment indicate students are more likely to enroll at public institutions rather than private colleges during their first year of enrollment (National Center for Education Statistics, 2004). In light of this statistic, FGs in this sample differ substantially from the national norm as they are more likely to enroll at private institutions. Results are reported in Table 7.

Finally, demographic characteristics are another area in which FGs differ from their peers nationally. FGs in this sample are more likely than peers nationally to be non-native speakers of English (refer to Table 5).

As discussed above, FGs in this sample reflect several characteristics associated with FGs in the literature. For instance, FGs in this sample demonstrate a high degree of financial need and tend to have a lower self-concept upon entering college. Furthermore, a larger percentage of FGs indicate English is not their native language when compared to 2001 national norms. Because demographic characteristics in relation to the academic

Table 7

*Enrollment Comparison of FG Participants Compared to 2001 National Average
(N=2,062)*

Institutional Type	First Generation Sample %	National %
Public	35	66
Private	65	34

success of FGs is one area that is examined by this study, further attention is paid to the demographics of the participants in this study in the next section.

Demographic Profile of Respondents

The next step in data analysis required examining the demographic profile of respondents specifically in relation to the purpose of this study. Because reported first-semester grade point average (GPA) served as the dependent variable of interest, responses related to this item were examined. Participants who indicated they did not receive first semester grades, and therefore did not have a grade point average at the time they completed the YFCY, were removed from the data set. The resulting sample for this study included 2,062 first generation students (FGs). Following this examination, descriptive statistics were used to provide the demographic profile of the respondents who comprised the data set.

The demographic profile of respondents is limited to those variables that are of interest to this study. These included participants' parent's level of education well as Race, Gender, Financial Need, and English Speaking ability.

The largest number of respondents (n=1443) indicated their mother was a high school graduate (70%). This was followed by respondents who indicated the highest level of education received by their mother was some postsecondary education other than college (13.1%), some high school (9.4%), and finally grammar school or less (7.5%). Similar findings were repeated when asked the educational level of their father. The largest number of respondents indicated that their father was a high school graduate (66.9%). This was followed by respondents who indicated the highest level of education

received by their father was some postsecondary education other than college (12.4%), some high school (12.9%), and finally grammar school or less (7.8%).

Respondents are mostly White (76.1%). African Americans (7.5%) comprise the next largest group of respondents. Participants are mostly female (65.6%) as compared to male (34.4%). A large proportion of participants indicate having financial need (79.3%). The majority are native speakers of English (88.5%). Table 8 reports the demographic characteristics of the sample.

Once the demographic profile of respondents was completed, data analysis addressed the remaining research questions. The first research question was answered using logistic regression.

Logistic Regression Analysis

A logistic regression model was tested to answer the first research question posed in the study. This question sought to identify significant predictors that distinguish between more academically successful FGs and FGs who were less academically successful.

The objective of the logistic regression analysis was to determine if five factors (Institutional Environment, Structural Characteristics, Agents of Socialization, Student Effort and Background Characteristics) distinguish more academically successful students from less academically successful students. Findings from the logistic regression analysis are reported in this section.

Logistic regression estimates the predicted probability of a category occurring. This category can be a binary variable having only two options. The logistic regression equation defines probability in terms of odds. Odds are calculated by dividing the

Table 8

Demographic Characteristics of FG Participants (N=2,062)

Demographic Characteristic	N	%
Education Level of Mother		
Grammar or less	154	7.5
Some High School	194	9.4
High School Graduate	1443	70.0
Some Postsecondary	271	13.1
Education Level of Father		
Grammar or less	161	7.8
Some High School	266	12.9
High School Graduate	1380	66.9
Some Postsecondary	255	12.4
Racial Characteristics*		
White	1569	76.1
African American	154	7.5
American Indian	20	1.0
Asian American	124	6.0
Native Hawaiian/Pacific Islander	15	.7
Mexican American	105	5.1
Puerto Rican	38	1.8
Other Latino	70	3.4
Other	73	3.5
Gender		
Male	706	34.4
Female	1349	65.6
Financial Need		
None	357	20.7
Financial Need	1364	79.3
English Speaking Ability		
English is Native Language	1811	88.5
English is not Native Language	236	11.5

*Percentage for racial characteristics equals more than 100% due to participants who classified themselves in more than one racial category

probability of a category occurring by the probability of it not occurring (Cramer, 2003). In this study, the outcome of interest is FG academic success. P_i is the probability that a FG is more academically successful and $1-P_i$ is the probability that a FG is less academically successful.

Therefore, first semester GPA was coded to serve as the bivariate dependent variable. FGs with a more successful GPA (1.75 and above) were coded as a 1. FGs who were less academically successful, having a GPA of 1.75 and below, were coded as 0.

Factor scores from the five factors derived through the factor analysis (Institutional Environment, Structural Characteristics, Agents of Socialization, Student Effort and Background Characteristics) formed a set of independent variables, X_i . The intercept, a , and the estimated coefficients, B , for each of the independent variables are included in the model (Cramer, 2003).

In logistic regression, coefficients are used to calculate the logged odds. The logged odds are converted into odds that are then used to calculate the predicted probability of a case (Cramer, 2003). Because the outcome of logistic regression is estimated in log-form, in this case the equation predicted the log-odds of being academically successful. The regression coefficients represent the change in the log-odds according to a one unit change in the values of the predictor variables (Cramer, 2003).

The odds-ratio provides a more intuitive interpretation of one-unit changes in the independent variables. The odds-ratio is the number by which one multiplies the odds of a category occurring for a change of one unit in a predictor variable controlling for any other predictors (Cramer, 2003; Hosmer & Lemeshow, 1989). In this study, the odds-ratio represents the odds of being academically successful given a unit change in the

independent variable. The statistical software package used to analyze the data, SPSS, includes odds-ratios in addition to the beta coefficients for each of the independent variables included in the model.

There were several coefficients in the logistic regression analysis that were negative. A negative logistic regression coefficient indicates there is a decrease in the log-odds of academic success. In other words, the higher this ratio is, the less likely the student will be academically successful. When this occurs the inverse of the odds-ratios should be taken in order to put the odds-ratios for the negatively-related coefficients on the same metric as the odds-ratios produced when estimated coefficients are positive (DesJardins, 2001). The inverse odds-ratio was calculated and added to the presentation of results for the final significant model in this analysis.

The data set of 2,062 respondents was comprised of 1,988 more academically successful FGs and 74 academically less successful FGs. Due to the disproportionately high number of more academically successful FGs to academically less successful FGs weighted samples were used to correct this. The sample was weighted to create a proportionate number of more academically successful FGs (N=1,988) to academically less successful FGs (N=1992). Once weighting the sample was completed, analysis moved on to the logistic regression model (Howser & Lemeshow, 1989).

Crossvalidation was used to create and validate the logistic regression sample. That is, the data set was randomly split to create two groups. Group One, the analysis sample, was used to generate the model. Group Two, the holdout sample, was used to validate the predictive ability of the model generated by the first group (DesJardins, 2002).

Using the analysis sample, a forward stepwise logistic regression model was estimated to answer the first research question posed in the study. Forward stepwise logistic regression was used to enter the variables because a stepwise procedure includes or removes variables based on their importance. Importance is defined in terms of their statistical significance of the coefficient for the variable. In logistic regression the errors are assumed to follow a binomial distribution, and significance is assessed by the likelihood ratio chi-square test. The most important variable in statistical terms will be the one that produces the greatest change in the log-likelihood relative to a model (Howser & Lemeshow, 1989).

The five factors from the factor analysis (Institutional Environment, Agents of Socialization, Structural Characteristics, Student Effort, and Background Characteristics) served as the predictor variables. Predictors were entered based on the most significant score statistic with a p of .05 or less and were removed from the model if the p of the -2 log likelihood test was greater than .10.

Student Effort entered the model first ($\chi^2 = 217.976$, $p=.000$). This variable was followed by Agents of Socialization ($\chi^2 = 102.447$, $p=.000$), Institutional Environment ($\chi^2 = 32.886$, $p=.000$) and Structural Characteristics ($\chi^2 = 23.029$, $p=.000$).

The probability of FG academic success as denoted by a GPA of 1.75 or above was positively associated with Institutional Environment and Structural Characteristics. Academic success was negatively associated with Agents of Socialization and Student Effort (refer to Table 9).

Table 9

*Results of Logistics Regression Analysis of FGs in Analysis Sample, Group One
(N= 2,208)*

Steps	Factors	Beta Coefficient	Standard Error	Wald Statistic	p-value	Odds Ratio	Inverse Odds
Step 4	STUEFF	-.652	.050	170.726	.000	.521	1.91
	AGNTSOC	-.452	.50	80.005	.000	.637	1.56
	INSTENV	.312	.047	44.790	.000	1.183	
	STRUC	.273	.057	22.704	.000	1.314	

The coefficient estimate for Student Effort (Step 4) is -.652. This coefficient estimates that FGs who report the behaviors exhibited in variables associated with Student Effort have a log-odds of being academically successful that are -.652 units lower. Thus, a one unit increase in the factor Student Effort reduces the odds of academic success by -65.2%. Another way to interpret this is through the inverse odds ratio (DesJardins, 2001). FGs have a 1.91 times higher chance of being less successful academically in relation to variables associated with Student Effort. Results are reported in Table 9. At this point readers are encouraged to refer to Table 4 introduced in Chapter Three for the list of variables that contributed to the factor scores used in this regression analysis.

Examining the remaining variables provides a more complete picture of factors that predict the academic success of FGs. The coefficient estimate for Agents of Socialization is -.452. Using the inverse odds ratio, FGs have a 1.56 times higher chance of being less successful academically based on their reporting of variables associated with the factor Agents of Socialization. The coefficient estimate for Institutional Environment is .312. The odds of academic success for FGs who report positive experiences related to the Institutional Environment are 1.367 higher (or 36.7%). Likewise, Structural Characteristics is positively associated with academic success. The odds of FG academic success are 1.314 times higher when considering positive experiences with variables related to Structural Characteristics.

Results from this initial stepwise logistic regression led to examination of the Wald Statistic. The Wald Statistic provides an indication of which of the variables in the model may or may not be significant (Howser & Lemeshow, 1989). Since the overall goal is to obtain the best fitting model while minimizing the number of parameters, the next step is to fit a reduced model containing only variables thought to be significant and compare it to the full model containing all the variables (Howser & Lemeshow, 1989). The new model, with fewer variables, is then compared to the old model through examination of the Wald Statistic. The estimated coefficients for the remaining variables in the new model should also be compared to those from the full model making sure the variables coefficients have not changed markedly in magnitude (Howser & Lemeshow, 1989). Based on the examination of the Wald Statistic for Step Four of the logistic model using the analysis sample, I determined the factor Structural Characteristics needed to be removed, since the variable made only a minimal contribution to the model predicting academic success.

In addition, the percent of academically successful FGs correctly classified by the model changed only a minimal amount when Structural Characteristics was removed. Table 10 illustrates the number of correct classifications. Step Four of Table 10 indicates the number of correct classifications with the factor Structural Characteristics included in the model at 67.8%. Step Three shows that without the factor Structural Characteristics, the number of correctly classified academically successful FGs is relatively the same at 67.7%.

Table 10

Observed and Predicted Frequencies for Academic Success of First Logistic Regression Analysis of FGs in Analysis Sample, Group One (N= 1,390)

Observed	Predicted		% Correct
	Less Successful	More Successful	
Step 3			
Less Successful	881	306	74.2
Successful	407	615	60.2
Overall % Correct			67.7
Step 4			
Less Successful	881	306	74.2
Successful	405	616	60.3
Overall % Correct			67.8

Another stepwise forward logistic regression model was estimated without the variable Structural Characteristics. Step Three of this stepwise process provided the final logistic regression model estimated to predict the academic success of FGs (refer to Table 11). In this model, Student Effort entered first ($\chi^2 = 217.976$, $p=.000$). This was followed by Agents of Socialization second ($\chi^2 = 102.447$, $p=.000$), and Institutional Environment third ($\chi^2 = 32.886$, $p=.000$). Results are reported in Table 11.

After fitting a logistic model, the emphasis shifts from the assessment of the significance of estimated coefficients to interpreting their values (Hosmer & Lemeshow, 1989). The statistic used to determine whether the predictors included in the model are a good fit to the data is the -2 log Likelihood (Hosmer & Lemeshow, 1989). The -2 log likelihood value for this study including the three factors is 2508.442. This is an improvement from the -2 log likelihood of 2758.1 for the model containing only one factor.

After these precautions were taken, the model was examined to determine whether it was capable of correctly classifying FGs according to academic success. One summary of the predictive ability of the model is a table of the hits and misses of the prediction rule (DesJardins, 2002; Menard, 1995). The logistic regression model was validated using the holdout Sample, Group Two. Validation took place by using coefficient estimates of the analysis sample, Group One, to produce the predicted probabilities for each participant in the holdout sample (DesJardins, 2002). The statistically significant model proved to be valid correctly classifying 62.8% of the FGs when the three significant factors (Institutional Environment, Agents of Socialization, and Student Effort) were included in the model (refer to Table 12).

Table 11
Results of Second Logistic Regression Analysis of FGs in Group One (N=1,390)

Steps	Factors	Beta Coefficient	Standard Error	Wald Statistic	p-value	Odds Ratio	Inverse Odds Ratio
Step 3	STUEFF	-.655	.050	147.658	.000	.519	1.92
	AGNTSOC	-.447	.050	80.202	.000	.639	1.56
	INSTENV	.258	.045	32.723	.000	1.294	

Table 12
Observed and Predicted Frequencies for Academic Success (N= 3,890)

Actual	Predicted Group One			Predicted Group Two		
	Less Success	More Success	% Correct	Less Successful	More Successful	
Less Successful	804	383	67.7	575	230	71.4
Successful	325	697	68.2	291	674	69.8
Overall % correct			68.0			62.8

Ultimately, the model proved to be predictive of academic success. However, these predictions should be interpreted with caution due to the weighting that was used to create the sample.

Once creating and validating the logistic model was completed, data analysis then turned to the four remaining research questions. To answer these research questions the validated model including the three significant variables (Institutional Environment, Student Effort, and Agents of Socialization) were used in four separate analyses. The entire weighted sample (Group One and Group Two) was used to create the remaining logistic regression models. Therefore, the weighted sample included 3,980 FG respondents.

Race

The second research question sought to determine whether there was a relationship between race and factors used to predict academic success among FGs. To answer this question Race was entered to the previously estimated logistic regression model that included the factors Institutional Environment, Agents of Socialization, and Student Effort. Because Race is a categorical variable, several additional steps needed to be taken before adding it to the logistic regression model.

First, each racial category was marked separately in the data set. Respondents were asked to mark the category according to their corresponding race. Upon data entry, participants were coded as either having not marked that category (1) or having marked that category (2) for each racial indicator. Therefore, there were nine separate variables (White, African American, American Indian, Asian American, Native Hawaiian/Pacific

Islander, Mexican American, Puerto Rican, Other Latino, Other) and all participants were either coded 1 (i.e., not being White, African American, etc.) or 2 (being White, African American, etc.) for each variable.

The statistical software package, SPSS, used in this study for data analysis is capable of handling categorical variables. This is done as long as the researcher indicates the variables being entered into the logistical model in SPSS are categorical. Therefore, each racial category was entered into the forward stepwise logistic regression equation and I indicated that it was a categorical variable upon entry into SPSS. The dummy variable reference category was not being a member of a racial group (0 = White, 1=not White). Nine dummy variables, one for each racial category, were entered into the logistic regression model. In addition to the nine dummy variables for racial category, the four statistically significant factors (Institutional Environment, Agents of Socialization, and Student Effort) were entered into the logistic regression model.

The results provided by the logistic regression model answered the second research question. The model indicated there is a significant relationship between academic success and being Mexican American, African American, or Asian American in relation to three significant factors: Institutional Environment, Student Effort, and Agents of Socialization (refer to Table 13).

In the final logistic model, Step Ten, being Mexican American produces a coefficient estimate of -1.239. Thus, being a Mexican American FG results in a 3.44 times higher chance of being academically less successful than those FGs who are not

Table 13
Results of Logistic Regression Analysis of FGs Including Race (N= 3,978)

Steps	Factors	Beta Coefficient	Standard Error	Wald Statistic	p-value	Odds Ratio	Inverse Odds Ratio
Step 10	Mexican American	-1.239	.151	67.577	.000	.290	3.44
	AGNTSOC	-.719	.041	306.213	.000	.487	2.05
	STUEFF	-.669	.038	309.659	.000	.512	1.95
	African American	-.659	.136	23.403	.000	.517	1.93
	Asian American	.353	.162	4.742	.029	1.424	
	INSTENV	.346	.039	79.996	.000	1.413	

Mexican American. The variable African American produced a coefficient estimate of -.659. Thus, being an African American FG means a 1.93 times higher chance of being academically less successful than those FGs who are not African American. The variable Asian American produces a coefficient estimate of .353. Alternatively, being an Asian American FG results in a 1.42 times higher chance of being academically more successful.

The remaining variables in Step Ten of the logistic model remained consistent with the previously estimated logistic model in terms of positive and negative contributions to the odds of academic success. For instance, the coefficient for Institutional Environment was .346. Thus, the odds of being academically successful for FGs who report variables associated with the factor Institutional Environment are 41% higher. The coefficient estimate for Student Effort is -.669. Using the inverse odds ratio, FGs have a 1.95 times higher probability of being academically less successful when variables associated with the factor Student Effort are reported. The coefficient estimate for Agents of Socialization remained negative at -.719. Using the inverse odds ratio, FGs have a 2.05 times higher chance of being less successful academically when variables associated with the factor Agents of Socialization are reported.

Recall the sample was weighted to create a proportionate number of more academically successful FGs to academically less successful FGs. Adding the three significant factors and two racial variables increased the predictive ability of the model. In the final significant logistic regression model, Step Nine, the percent of cases correctly classified increased to 71.3% overall (refer to Table 14).

Table 14
Observed and Predicted Frequencies for Academic Success of FGs Incorporating Race
 (N= 3,978)

Observed	Predicted		% Correct
	Less Successful	More Successful	
Less Successful	1455	536	73.1
Successful	604	1383	69.6
Overall % correct			71.3

The estimated logistic model incorporating Race answered the second research question. Data analysis proceeded to the third research question.

Gender

The third research question sought to determine whether there is a relationship between Gender and factors used to predict academic success among FGs. Gender was entered to the validated logistic regression model. Because Gender is a categorical variable, several additional steps needed to be taken before adding it to the logistic regression model. Entering Gender into the logistic regression model in SPSS required indicating that it was a categorical variable so that SPSS would create a dummy variable. The reference category was Female. Once this was completed, Gender was entered into the logistic regression equation along with the factors Institutional Environment, Student Effort, and Agents of Socialization.

The results provided by the logistic regression model answered the third research question. The model indicates there is a significant negative relationship between academic success and being Male in relation to three factors: Institutional Environment, Student Effort, and Agents of Socialization (refer to Table 15). Student Effort was entered first ($\chi^2 = 445.132$, $p=.000$), Agents of Socialization second ($\chi^2 = 331.713$, $p=.000$), Gender third ($\chi^2 = 159.354$, $p=.000$), and Institutional Environment fourth ($\chi^2 = 22.353$, $p=.000$).

In the final significant model, Step Four, being Male produces a coefficient estimate of $-.865$. Being a male FG means a 2.37 times higher chance of being academically less successful than female FGs. The coefficient estimates for the remaining

Table 15
Results of Logistic Regression Analysis of FGs Including Gender (N= 3,972)

Steps	Factors	Beta Coefficient	Standard Error	Wald Statistic	p-value	Odds Ratio	Inverse Odds Ratio
Step 4	Male	-.864	.076	130.272	.000	.421	2.37
	STUEFF	-.741	.038	386.267	.000	.477	2.09
	AGNTSOC	-.564	.039	130.272	.000	.569	1.75
	INSTENV	.173	.037	22.365	.000	1.189	

significant variables in the model remained consistent with previous results in relation to contributing positively or negatively to academic success of FGs. For instance, the coefficient estimate for Institutional Environment is .173. Thus, the odds of being academically successful for FGs who report variables associated with the factor Institutional Environment are 1.189 times (or 18%) higher. The coefficient estimate for Student Effort is -.741. Using the inverse odds ratio, FGs have a 2.09 times higher chance of being academically less successful in relation to this factor. The coefficient estimate for Agents of Socialization is -.564. Using the inverse odds ratio, FGs have a 1.75 times higher chance of being academically less successful in relation to reporting variables associated with this factor.

Due to sample weighting, there were a proportionate number of more academically successful FGs to academically less successful FGs. Prior to including any variables in the model, FG respondents had a roughly equivalent chance of being classified as more academically successful (49.9%) or academically less successful (50.1%). Adding the three significant factors and Gender increased the predictive ability of the model. In the final significant logistic regression model, Step Four, the number correctly classified increased to 67.7% overall (refer to Table 16).

The estimated logistic model incorporating Gender answered the third research question. Data analysis proceeded to the fourth research question.

Financial Need

The fourth research question sought to determine if there is a relationship between financial need and factors used to predict academic success among FGs. Financial need

Table 16
Observed and Predicted Frequencies for Academic Success of FGs Incorporating Gender
 (N= 3,972)

Observed	Predicted		% Correct
	Less Successful	More Successful	
Less Successful	1302	689	65.4
Successful	594	1387	70.0
Overall % correct			67.7

was entered into the validated logistic regression model along with Institutional Environment, Agents of Socialization, and Student Effort.

Because Financial Need is a categorical variable several additional steps needed to be taken before adding it to the logistic regression model. Entering Financial Need into the logistic regression model in SPSS required indicating that it was a categorical variable so that SPSS would create a dummy variable. The reference category was No Financial Need. FGs were marked as having Financial Need if they indicated using aid that must be repaid to compensate for college costs. FGs were marked as having No Financial Need if they indicated they did not have to use aid that must be repaid to compensate for college costs. Once this was completed Financial Need was entered into the logistic regression equation along with the factors Institutional Environment, Student Effort, and Agents of Socialization.

The results provided by the logistic regression model answered the third research question. The model indicates there is a significant relationship between academic success and Financial Need in relation to three factors: Institutional Environment, Student Effort, and Agents of Socialization (refer to Table 20). Student Effort was entered first ($\chi^2 = 389.992$, $p=.000$), Agents of Socialization second ($\chi^2 = 212.665$, $p=.000$), Institutional Environment third ($\chi^2 = 733257$, $p=.000$), and Financial Need fourth ($\chi^2 = 4.646$, $p=.031$). Results are reported in Table 17.

In the final significant model, Step Four, having Financial Need produces a coefficient estimate of .203. FGs who indicate Financial Need means a 1.226 times higher chance of being more academically successful than FGs who do not indicate Financial Need. The coefficient estimates for the remaining significant variables in the

Table 17

Results of Logistic Regression Analysis of FGs Including Financial Need (N= 3,319)

Steps	Factors	Beta Coefficient	Standard Error	Wald Statistic	p-value	Odds Ratio	Inverse Odds Ratio
Step 4	STUEFF	-.680	.039	303.763	.000	.507	1.97
	AGNTSOC	-.568	.041	193.918	.000	.567	1.76
	INSTENV	.333	.039	174.259	.000	1.395	
	Financial Need	.203	.094	4.641	.031	1.226	

model remained consistent with previous results in relation to contributing positively or negatively to academic success of FGs. For instance, the coefficient estimate for Institutional Environment is .333. Thus, the odds of being academically successful for FGs who report variables associated with the factor Institutional Environment are 1.395 times (or 39%) higher. The coefficient estimate for Student Effort is -.680. Using the inverse odds ratio, FGs have a 1.97 times higher chance of being academically less successful in relation to this factor. The coefficient estimate for Agents of Socialization is -.568. Using the inverse odds ratio, FGs have a 1.76 times higher chance of being academically less successful in relation to reporting variables associated with this factor.

Due to sample weighting, there were a proportionate number of more academically successful FGs to academically less successful FGs. Prior to including any variables in the model, FG respondents had a roughly equivalent chance of being classified as more academically successful (49.9%) or academically less successful (50.1%). Adding the three significant factors and Financial Need increased the predictive ability of the model. In the final significant logistic regression model, Step Four, the number correctly classified increased to 66.4% overall (refer to Table 18).

The estimated logistic model incorporating Financial Need answered the fourth research question. Data analysis proceeded to the fifth and final research question.

English Speaking Ability

The final research question sought to determine if there is a relationship between identified language ability (native and non-native speakers of English) and factors used to predict academic success among FGs. English Language ability was entered into the validated logistic regression model.

Table 18

Observed and Predicted Frequencies for Academic Success of FGs Incorporating Financial Need (N= 3,319)

Observed	Predicted		% Correct
	Less Successful	More Successful	
Less Successful	1034	613	62.8
Successful	503	1169	69.9
Overall % correct			66.4

Because English Speaking Ability is a categorical variable, several additional steps needed to be taken before adding it to the logistic regression model. Entering English Speaking Ability into the logistic regression model required indicating that it was a categorical variable so that SPSS would create a dummy variable. The reference category was Native Speaker of English. Once this was completed, Non-Native Speaker of English was entered into the logistic regression equation along with the previously identified factors Institutional Environment, Student Effort, and Agents of Socialization

Results from the final logistic regression model, Step 4, demonstrate English Language ability has a significant relationship when used in conjunction with the three factors. Student Effort was entered first ($\chi^2 = 441.935$, $p=.000$), Agents of Socialization second ($\chi^2 = 320.836$, $p=.000$), Institutional Environment third ($\chi^2 = 49.626$, $p=.000$), and English Speaking ability fourth ($\chi^2 = 10.228$, $p=.001$).

In the final significant model, Step Four, being a non-native speaker of English produces a coefficient estimate of $-.358$. Thus, FGs who indicated English was not their native language had a 1.43 times higher chance of being academically less successful than native English language speakers (refer to Table 19).

The coefficient estimates for the remaining significant variables in the model remained consistent with previous results in relation to contributing positively or negatively to academic success of FGs. For instance, the coefficient estimate for Institutional Environment is $.269$. Variables associated with the factor Institutional Environment increase the odds of academic success by 1.30 (or 30%). The coefficient estimate for Student Effort is $-.663$. Using the inverse odds ratio, the chances FGs will be academically less successful are increased by 1.94 when variables associated with

Table 19

Results of Logistic Regression Analysis of FGs Including English Speaking Ability (N= 3,857)

Steps	Factors	Beta Coefficient	Standard Error	Wald Statistic	p-value	Odds Ratio	Inverse Odds Ratio
Step 4	AGNTSOC	-.672	.040	288.081	.000	.510	1.96
	STUEFF	-.663	.037	329.122	.000	.515	1.94
	INSTENV	.269	.036	55.259	.000	1.309	
	Non-native English Spkr	-.358	.112	10.213	.001	.699	1.43

Student Effort are present. The coefficient estimate for Agents of Socialization is $-.672$. Using the inverse odds ratio, FGs have a 1.96 (96%) times higher chance of being academically less successful when variables associated with the factor Agents of Socialization are present.

Weighting the sample created a proportionate number of more academically successful FGs to academically less successful FGs. Prior to including any variables in the model, FG respondents who were more academically successful (49.9%) were roughly equivalent to the number who were academically less successful (50.1%). Adding the three significant factors and English Speaking increased the predictive ability of the model. In the final significant logistic regression model, Step Four, the number correctly classified increased to 66.2% overall (refer to Table 20).

The steps taken during data analysis proved sufficient to answer the research questions posed for this study. Interpretation and discussion of results is offered in the following chapter.

Table 20

Observed and Predicted Frequencies for Academic Success of FGs Incorporating English Speaking Ability (N= 3,857)

Observed	Predicted		% Correct
	Less Successful	More Successful	
Less Successful	1149	728	61.2
Successful	575	1405	71.0
Overall % correct			66.2

Chapter Five

Discussion

This study was designed to address the gap in the literature regarding factors and demographic variables that predict the academic success of first-year, first generation students. A national data set comprised of first-year, full-time, first generation students (FGs) was used as the sample for the study. FGs were placed into two categories based on their self-reported first semester grade-point average (GPA). The two categories used in this study were more academically successful FGs (1.75 or above) and FGs who were less academically successful (below a 1.75). A validated logistic regression model was used to determine whether there were significant differences between more academically successful FGs and less academically successful FGs on three factor scores (Institutional Environment, Student Effort, and Agents of Socialization). Demographic variables including Race, Gender, Financial Need, and English Speaking Ability were added to four separate logistic regression models to determine if there was a relationship between each of the four demographic variables and the three factor scores (Institutional Environment, Student Effort, and Agents of Socialization) related to academic success.

The purpose of the chapter is to discuss the results within the context of the literature. Implications for future practice, research, and policy are also suggested.

Discussion

Results of this study are first discussed in relation to the initial research question regarding factors that predict the academic success of FGs during the first year of enrollment. The discussion then covers results from the study in regard to the remaining

research questions concerned with predicting the academic success of FGs in relation to both factors and demographic variables.

Factors that Predict Academic Success of FGs

The first research question posed in this study explored factors related to the academic success of FGs. To explore this question a factor analysis was first conducted on the data set. Based on Pascarella and Terezini's (1991) model five major factors were developed using SPSS including: Institutional Environment, Background Characteristics, Structural Characteristics, Agents of Socialization, and Student Effort. A logistic regression model was estimated using the five factor scores. During validation of the model, the results revealed three of the five factor scores distinguish between more academically successful and less academically successful FGs. There are significant differences between more academically successful FGs and FGs who are academically less successful in relation to three factors: Institutional Environment, Student Effort, and Agents of Socialization.

Association with the factor Institutional Environment increased the probability of first-year FG academic success. These results are best interpreted within the context of the variables that comprise the Institutional Environment factor score. Variables fall into five main areas.

First, Institutional Environment is comprised of variables that indicate how FGs are interacting with the college campus. FGs who report they interact with faculty and other college personnel were more likely to experience academic success.

Additional items that comprise the Institutional Environment factor score ask FGs to indicate their satisfaction with several areas of the college campus including academic

experiences, social experiences, and campus facilities. FGs who are satisfied with academic experiences such as the amount of contact they have with faculty, the quality of instruction, and the relevance of coursework to their lives and career have increased odds of academic success. In addition, FGs who are satisfied with facilities such as classrooms, computer labs, and the library have a higher probability of academic success. Satisfaction with the sense of community among students and overall college experience is also associated with an increased probability of academic success among FGs.

The Institutional Environment factor score was also comprised of variables that indicate whether FGs are successful at adjusting to the academic demands of the first year of college. The higher FGs rated their success in understanding what professors expect, developing effective study skills, adjusting to academic demands, and getting to know faculty the greater the odds of FGs' academic success.

Variables that indicate the frequency with which FGs participate in several activities during their first year of enrollment is a fourth component of the Institutional Environment factor score. The more frequently FGs participate in group discussions, student presentations and performances, research projects, group projects, discuss courses with other students, and study with other students the higher the probability of academic success.

Finally, the Institutional Environment factor score was composed of variables that indicate the degree to which FGs felt they changed in certain ways since entering college. FGs who report they are stronger in cognitive and affective areas such as general knowledge, critical thinking skills, and knowledge of different races and cultures after their first semester of college increase their odds of academic success.

Overall, the frequency and degree to which FGs have positive experiences with the Institutional Environment increases the odds of FG academic success. Student Effort was another factor that distinguished between more academically successful FGs and FGs who are academically less successful. Results from this study demonstrate Student Effort is related to an increased probability that a FG student will be academically less successful. This finding is intuitive when examining the results in the context of variables that comprise the factor score for Student Effort. Variables fell into three main categories.

First, the Student Effort factor score is composed of variables that measure how frequently FGs engage in behavior counterproductive to academic success. For instance, FGs who frequently turn in "sub par" and late assignments, come to class late, and allow their social life to interfere with schoolwork have a greater probability of being academically less successful.

Furthermore, Student Effort is comprised of variables that reveal how much energy FGs are exerting in regard to establishing support networks during their first year of college. For instance, the higher the frequency with which FGs feel homesick, worry about meeting new people, feel isolated from campus life, are intimidated by professors, feel the need to break away from family to succeed, feel unsafe on campus, worry about their health, and are overwhelmed and depressed the higher the probability they are academically less successful. The probability of being academically less successful is also related to FGs who report not getting along with their roommate during the first semester of college.

The final area that comprises the factor score for Student Effort is the ability of FGs to manage external commitments. FGs for whom a job, family, and social life

frequently interfere with schoolwork have increased odds of being academically less successful.

Agents of Socialization was the third factor score that distinguished between more academically successful FGs and academically less successful FGs. The Agents of Socialization factor score is comprised of several variables that indicate how FGs are their spending time. For instance, variables ask FGs to rate how successful they were at developing close friendships with students during their first semester of college. In addition, Agents of Socialization is comprised of items that ask the number of hours per week FGs spent socializing with friends and partying. The more time per week engaged in these behaviors, the greater the odds FGs are academically less successful. Furthermore, the higher the frequency with which FGs report skipping class, smoking cigarettes, and drinking beer, wine or liquor the greater the probability FGs are academically less successful.

These findings are interesting for several reasons. First, they suggest three factors rather than the five proposed initially are significantly related to FG academic success. In addition, the findings illustrate the importance of Institutional Environment, Student Effort, and Agents of Socialization as factors that distinguish between more academically successful FGs and those who are academically less successful.

The significance of these three factors points to the importance associated with how FGs are interacting with the Institutional Environment. The availability of faculty and college personnel affects FG academic success. In addition, increased satisfaction with academic experiences, social experiences, and campus facilities found in the Institutional Environment contributes to the academic success of FGs. FGs who are able

to navigate the academic demands posed during the first year of college have a higher probability of academic success. Furthermore, the odds of academic success are also increased among FGs who are part of an institutional environment that encourages frequent interaction with peers through academically related activities. Finally, an institutional environment that encourages meaningful growth in cognitive and affective skills and knowledge of other racial groups increase the odds of academic success for FGs.

Student Effort illustrates the importance of two areas during the first year of college. The amount of effort FGs exert towards establishing support through a social network among peers affects academic success. It is also possible to predict academic success is by the degree to which FGs make an effort to become academically engaged during their first semester of enrollment.

FGs who have difficulty adjusting to challenges such as new living situations are more likely to be less successful academically. The inability to establish a support network because FGs are having difficulty being away from home, moving away from family members, and interacting with professors and peers contributes to academic difficulty and leads to being academically less successful.

The significance of Student Effort as it relates to academic success is illustrated by the degree to which FGs are academically engaged. The findings suggest that FGs must be able to effectively manage their time and create a balance between social activities, external commitments such as family and work, and academic assignments in order to experience academic success.

Finally, the third significant factor, Agents of Socialization, suggests the importance of peer influences on FGs' academic success. FGs who spend more time socializing and engaged in negative activities with peers such as partying where alcohol is prevalent are more likely to experience academic difficulty.

The findings from the primary research question illustrate three factors that are significantly related to the academic success of FGs. The additional research questions were designed to determine if demographic variables coupled with the three factors distinguished between more academically successful FGs and FGs who are academically less successful.

Demographic Variables

The remaining research questions were answered by creating four separate logistic regression models. Findings allowed the researcher to determine whether there was a significant relationship between each demographic variable and the three factors used to predict the academic success of FGs.

The second research question in this study sought to determine whether there was a relationship between Race and three factors used to predict academic success (Institutional Environment, Student Effort, and Agents of Socialization). A logistic regression model was estimated to determine whether the demographic variable Race and the three factors distinguish between academically more successful FGs and academically less successful FGs. Findings reveal that being African American (AA) and Mexican American (MA) along with the factors Institutional Environment, Student Effort, and Agents of Socialization increases the probability FGs will be academically less

successful. Specifically, the three factors plus the variable of Race successfully predicted academic success in 70.9% of cases.

These findings are interesting for several reasons. They suggest that FGs who are AA and MA are more likely to experience academic difficulty during their first year of college. This takes on added significance because most FGs are AA and Hispanic. In addition, FGs who are AA and MA are more likely to be minorities on college campuses (Choy, 2001). The significance of the demographic variables in the model illustrates that being AA and MA affects the way in which Institutional Environment, Student Effort, and Agents of Socialization predict the academic success in relation to these minority groups.

During the first year of college Race may lead to decreased satisfaction with variables in the Institutional Environment such as campus facilities. AA and MA FGs may find academic experiences less relevant to their lives. Given that many FGs attend predominately White institutions (PWIs) where social activities favor the dominant culture, MA and AA FGs may be less satisfied with social experiences provided by the Institutional Environment. Furthermore, Race may be a factor that limits the frequency with which first year AA and MA FGs interact with faculty members and other campus personnel who are predominantly White. When considering Student Effort, being a minority may increase the likelihood AA and MA FGs are having difficulty adjusting to new living situations and establishing a support network. Many minority students have grown up in minority cultures and college is the first predominantly White environment to which they have had to adjust. Minority status may also mean FGs who are AA and MA have difficulty maintaining academic engagement as they attempt to seek support

from external sources such as family. Family members do not have any college experience and may be unable to provide the kind of support minorities need to succeed academically in college. AA and MA FGs, who have little prior exposure to the campus environment (Choy, 2001), may be more vulnerable to negative Agents of Socialization that increase their exposure to behaviors associated with partying and alcohol.

The next research question sought to determine whether there was a relationship between Gender and three factors related to academic success (Institutional Environment, Student Effort, and Agents of Socialization). A logistic regression model was estimated to determine whether the demographic characteristic Gender and the three factors distinguished between academically successful FGs and academically less successful FGs. Results from this research reveal that being Male along with Institutional Environment, Student Effort, and Agents of Socialization increases the probability that FGs will be academically less successful. The three factors plus the variable of Gender successfully predicted academic success in 67.9% of cases.

These findings suggest that FGs who are Male are more likely to experience academic difficulty during the first-year of full-time enrollment. This finding is interesting in that it suggests FGs' gender affects the relationship Institutional Environment, Student Effort, and Agents of Socialization have with the academic success of FGs.

When considering Institutional Environment, Male FGs may be less satisfied with the overall college experience during their first semester freshman year. FGs who are male may have more difficulty understanding what professors expect, developing effective study skills, and adjusting to academic demands thereby decreasing their

likelihood of academic success. This may be due to the fact that the academic preparation men receive prior to enrollment is different from females or that their motivation for attending college is not directly associated with academic success. In relation to Student Effort, Male FGs may engage more frequently in behaviors counterproductive to academic success than do their female counterparts. For instance, FGs who are Male may be unfamiliar with how to manage their time within the context of the college environment. More emphasis may be placed on establishing social networks rather than academic activities. The increased amount of social activity among Male FGs may expose them to negative Agents of Socialization during their first semester of enrollment. Male FGs may be more likely to frequently skip class and drink alcohol placing them at a greater risk for academic success.

The fourth research question sought to determine whether there was a relationship between Financial Need and three factors related to academic success (Institutional Environment, Student Effort, and Agents of Socialization). A logistic regression model was estimated to determine whether the demographic characteristic Financial Need and the three factors distinguished between academically successful FGs and academically less successful FGs. Results revealed that there is a relationship between Financial Need and the three factors scores for Institutional Environment, Student Effort, and Agents of Socialization among FGs. This suggests FGs who have Financial Need are more likely to experience academic success when considered in relation to the three significant institutional factors mentioned previously: Institutional Environment, Student Effort, and Agents of Socialization. It is possible that this particular finding was an artifact of the

sample employed in the study. A large percentage of FG participants in this study report a portion of their financial aid was coming from sources such as grants and scholarships.

The final research question sought to determine whether there was a relationship between English Speaking Ability and three factors related to academic success (Institutional Environment, Student Effort, and Agents of Socialization). A logistic regression model was estimated to determine whether there was a relationship between the demographic characteristic English Speaking Ability and the three factors that distinguish between more academically successful FGs and academically less successful FGs. Results reveal that being a non-native speaker of English along with Institutional Environment, Student Effort, and Agents of Socialization increases the odds FGs will be academically less successful. Specifically, the three factors plus the variable English Speaking Ability successfully predicted academic success in 66.4% of cases.

FGs who are non-native speakers of English are more likely to experience academic difficulty. English speaking ability is significantly related to the way in which Institutional Environment, Student Effort, and Agents of Socialization predict the academic success of FGs.

FGs who are non-native speakers of English may find it more difficult to interact with faculty and other college personnel within the Institutional Environment who are native English speakers. Language ability may also limit the degree to which FGs participate in academic activities during their first year of enrollment. For instance, non-native speakers of English may find it more difficult to participate in group discussions, student presentations and performances, research projects, and group projects. Language barriers and cultural differences associated with some non-native speakers of English

may cause problems in discussing courses with other students and studying with other students. Non-native speakers of English may also find variables associated with Student Effort prevent them from being academically successful. Language ability may limit their ability to establish support networks leading them to feel homesick, worried about meeting new people, isolated from campus life, intimidated by professors, and overwhelmed. Finally, Agents of Socialization during the first year of enrollment may affect the academic success of non-native English speaking FGs as they may be less likely to develop close friendships with students during their first semester of college.

Findings from this study present several interesting points as it relates to the academic success of FGs. These findings both support and contradict prior research.

Relationship of the Findings to Prior Research

Two main themes emerge when examining findings from this study in relationship to prior research. First, findings from this study relate to prior research on the academic success of FGs in regard to three factors (Institutional Environment, Student Effort, and Agents of Socialization). Next, findings from this study relate to prior research on demographic variables and the academic success of FGs. These two areas will be discussed in this section.

Prior Research on FG Academic Success and Three Factors

Results from the research question that examined factors related to the academic success of FGs contained findings that contradict prior research. The current study found three significant factors (Institutional Environment, Student Effort, and Agents of Socialization) distinguished between more academically successful FGs and academically less successful FGs. Results of the study contradict, to a degree, the

theoretical model that proposes five factors are related to the academic success of college students (Pascarella & Terenzini, 1991). Two factors did not prove to be significantly related to the academic success of FGs in this study (Background Characteristics and Structural Characteristics).

Prior research suggests Background Characteristics provide students with a sense of self (Bryson, Smith, & Vineyard, 2002; Sedlacek, 2004) and coping mechanisms (Jackson, Smith, & Hill, 2003) allow students to navigate the unfamiliar college environment. However, in this study, Background Characteristics as defined by variables that represent self-concept, psychological state, and aspirations (Pascarella & Terenzini, 1991) did not have a measurable impact on the ability to predict the academic success of FGs.

Contradictory findings were also seen in regard to the factor Structural Characteristics. Prior research suggests Structural Characteristics indirectly influence a student's college experience (Pascarella & Terenzini, 1991). In this study, Structural Characteristics, as defined by the YFCY variables used in the factor score, did not prove to be significantly related to academic success of FGs.

There were several findings from this study that support prior research in relation to the three significant factors used to predict FGs' academic success. Previous research had found that Institutional Environment (Cheng, 2004; Eimers, 2000; Richardson & Skinner, 1992), Student Effort (Bauer & Liang, 2003; Kuh, 1999; Kuh & Hu, 2001; Pascarella, Pierson, Wolniak, & Terenzini, 2004), and Agents of Socialization (Berger & Milem, 2002; Eberhardt, Rice, & Smith, 2003; Mayo, Murguia, & Padilla, 1995) are factors that predict the academic success of non-first generation students (NFGs). Results

from the current study complement previous findings as they suggest similar factors predict the academic success of FGs during their first year of full-time enrollment.

Positive contributions Institutional Environment can make to NFG academic success have been documented in prior literature. Institutional Environments that incorporate relevant academic experiences and provide quality instruction contribute to academic success (Eimers, 2001). Academic success is also promoted by daily experiences that create a sense of satisfaction with the Institutional Environment (Cheng, 2004; Eimers, 2000). In addition, academic success is attributed to students who have managed to adjust to academic demands within the Institutional Environment (Nisbett, Ruble, & Schurr, 1982). Institutional Environments that encourage growth in cognitive and affective skills encourage academic success (Pascarella & Terenzini, 1991). This study reveals that similar variables are related to the academic success of FGs. Results also validate prior research that has shown interaction with faculty and mentors facilitates academic success among FGs (Richadrson & Skinner, 1992).

Results from the current study suggest Institutional Environment is a factor that predicts the academic success of first year full-time FGs. FGs' satisfaction with campus facilities along with an academically engaging Institutional Environment increases the odds FGs will be academically successful. Furthermore, the probability of academic success among FGs increases when they have an opportunity to interact with faculty and are able to adjust to the academic demands of the Institutional Environment.

Likewise, prior research documents how Student Effort and Agents of Socialization can predict academic success among NFGs and FGs. This study supports

these conclusions and suggests that similar conclusions can be drawn in terms of how these factors predict the academic success of FGs.

Prior research illustrates how Student Effort affects academic success for NFGs. For instance, the more time engaged in academically purposeful activities the greater the chances of academic success (Bauer & Liang, 2003; Kuh, 1999; Kuh & Hu, 2001). Previous studies have also documented that FGs who spend more time engaged in academic assignments are more likely to reap positive rewards such as academic success (Pascarella, Pierson, Wolniak, & Terenzini, 2004).

Balancing school work with social activities (Bauer & Liang, 2003), employment (Furr & Elling, 2000; Furr & Elling, 2002; Lundberg, 2004) and family (Kuh, 2003) is important for academic success among NFGs. Previous research demonstrates Student Effort is particularly important for FGs in terms of ability to balance academic demands with external commitments such as employment (Billson & Terry, 1982; Bui, 2002; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996).

Findings from this study support these conclusions. Student Effort is a factor that distinguishes between more academically successful FGs and academically less successful FGs. FGs who are unable to balance external commitments with academic demands and devote more time to social rather than educationally purposeful activities have greater odds of being academically less successful.

Finally, prior research documents how Agents of Socialization predicts the academic success of NFGs. This study illustrates similar factors predict the academic success of FGs.

Studies illustrate that interaction with peers outside of class socialize the student to the college experience (Berger & Milem, 2002; Eberhardt, Rice, & Smith, 2003; Mayo, Murguia, & Padilla, 1995). Likewise, negative socialization to the college environment through the use of alcohol and other stimulants is linked to decreased academic success (DeBerard, Spielmans, & Julka, 2004).

Findings from this study support these conclusions. FGs who spend more time socializing with friends and engage in partying (which includes frequent use of alcohol) are at greater odds of being academically less successful.

This study both supports and contradicts previous research in regard to factors that predict the academic success of FGs. This study also provides further information in regard to demographic variables that affect the academic success of FGs.

Prior Research on FGs Academic Success and Demographic Variables

Findings from this study support and contradict previous research as it relates to demographic variables that predict FGs' academic success. Race, Gender, Financial Need, and English Speaking Ability have been examined to determine whether there is a relationship between these variables and the three significant factors that distinguish between more academically successful FGs and FGs who are academically less successful.

Prior research has indicated FGs who are racial minorities are more likely to experience academic difficulty (Richardson & Skinner, 1992; Somers, Woodhouse, & Cofer, 2004). Findings from this study support this conclusion. Specifically, the results suggest African American FGs and Mexican Americans FGs have a higher probability of being academically less successful.

Prior studies reveal that being a female FG may lead to academic difficulty (Bui, 2002; Kiang, 1992; Inman & Mayes, 1999). This study provides contradictory evidence in regard to previous research. Results from the current study suggest being a male FG is related to an increased probability of being academically less successful.

Research indicates Financial Need may have a significant relationship with the academic success of FGs (Somers, Woodhouse, & Cofer, 2004). In this study the Financial Need had a significant relationship with the academic success of FGs when other factors such as Institutional Environment, Student Effort, and Agents of Socialization are present. It should be noted that FGs in this sample indicated that a large portion of their financial need was met by aid that did not need to be repaid. This aid included grants and scholarships that were very important in influencing their decision to enroll at their institution. These findings with respect to financial need, therefore, should be interpreted with caution.

English Speaking Ability has also been associated with being academically less successful (Kiang, 1992). This study supports this conclusion in regard to FGs. Results from the study suggest FGs who are non-native speakers of English have greater odds of being academically less successful during their first year of college.

This study was designed to address a gap in the literature by providing information regarding factors related to the academic success of FGs during the first year of enrollment. In addressing this gap, implications for future practice, research, and policy are presented.

Implications for Future Practice, Research, and Policy

Findings from this study have several implications for FGs' academic success during their freshmen year. Results point to specific actions that can be taken before FGs enroll in college as well as programs that can be developed by student affairs professionals and academic administrators once FGs have enrolled in college.

To start, high school guidance counselors should work closely with FGs in making choices as to where to enroll in college. Careful attention should be paid to the institutional environment of the college FGs choose to attend. Guidance counselors may increase the odds of academic success among FGs by helping them select institutions that provide opportunities for interaction with faculty and other college personnel. Areas to examine are faculty to student ratios, monitoring mentorship programs offered at colleges, or looking for institutions that report data related to student engagement with college personnel and faculty.

College admissions staff should monitor the degree to which FGs who enroll at their institution are satisfied with facilities offered on campus. Monitoring satisfaction with these areas will allow admissions staff to gauge how FGs are responding to the campus environment. These data can allow for more expansive campus tours to be designed for FGs who may not be aware of the facilities that are offered because they lack prior exposure to a college campus.

Student affairs staff at colleges and universities responsible for orientation may wish to design special sessions for FGs. During such sessions, staff can assist FGs by teaching them how to manage their time. This would encourage FGs to gain a clear picture of how they will need to allot time for academic and social activities as well as

possible employment during their first year. Orientation programs can also serve to socialize FGs to the college environment by providing in-depth information about resources available to new students such as academic support services, counseling centers, recreational facilities, and student life centers. Doing so may encourage FGs to become involved in activities more quickly during their first year that ultimately increase their overall satisfaction with the campus environment.

Student affairs professionals, such as those in student activity offices, can create specific programs for FGs that facilitate adjustment to the new environment and allow FGs to develop support networks. Offering programs in locations and at times non-resident freshmen FGs can attend would encourage first year FGs who do not live on campus to interact with other first year students in a positive environment.

Programs through diversity or multicultural centers on campus can also be developed that pair first year FGs with older students who can serve as peer mentors. Particularly useful would be programs that target groups of FGs who are more at-risk in terms of academic success such as males, non-native speakers of English, AAs, and MAs.

Student affairs professionals in student activities offices may want to provide opportunities for FGs to interact with peers in academically related activities. Clubs and organizations should be encouraged to design activities that incorporate materials and subjects currently being covered within freshmen classes into their programs. Furthermore, academically related activities that invite faculty and encourage faculty participation outside of the classroom would benefit first year FGs. If freshmen residence halls host these events, resident advisors might target FGs who live on-campus and encourage their participation.

Student affairs professionals in academic support offices can also work to shape the first year activities of FGs to facilitate academic success. Designing first year programs for FGs that cover study skills, expectations of professors, and tips for how to meet the academic demands presented in college would be useful. Programs should also monitor class attendance and student effort in terms of the academic engagement of first year FGs. Early warning programs that alert staff to FGs who might be engaging in risky academic behaviors might enable them to intervene in time to help students avoid failure.

Deans and department heads might also find the results of the study useful. They may want to pay careful attention to how their programs meet the academic needs of first year AA and MA FGs. Furthermore, academic administrators may wish to pay attention to the academic needs of Male FGs. Programs that pair AA, MA, and male FGs with faculty mentors who share similar demographic characteristics might be developed within departments to encourage meaningful interaction.

In addition, deans and department heads may wish to consider what opportunities classes provide for group discussion, student presentations and projects, and group projects. First year students often enroll in larger, general education classes. Faculty should be encouraged to incorporate activities that go beyond lectures into these classes. Alternatively, deans and department heads may wish to rethink the class sizes they create and opt instead to create smaller, more intimate classes for first year students that are more naturally designed to incorporate the activities associated with academic success among FGs.

Deans and department heads may also wish to provide training for faculty who teach freshmen students. Training sessions that address how to design class materials that

are engaging for FGs who are non-native speakers of English, MA, and AA would be useful in facilitating the academic success of these first year students. Inviting college personnel who have experience with English as a Second Language as well as those who can articulate the needs of minority students to the training sessions would also encourage the academic success of FGs, particularly those who are more at-risk.

In addition to the implications for practice, results from the study have implications for future research. The present study examined factors that distinguish between more academically successful FGs and academically less successful FGs during the first year of full-time enrollment. Furthermore, this study examined whether there is a relationship between the three factor scores and four demographic variables (Race, Gender, Financial Need, and English Speaking Ability) and the academic success of FGs. This study employed quantitative techniques. A future study might explore one of these factors or demographic variables in relation to the academic success of FGs in greater depth through qualitative techniques such as interviews. Doing so might allow for a deeper and more comprehensive understanding of factors that affect the academic success of FGs. For example, the findings suggest that interaction with faculty affects academic success among FGs during their first year. A qualitative study could explore specifically what types of interaction are important and could focus on male, AA, or MA FGs. A first-hand account of these details from FGs would enrich the current findings by providing information about what topics are addressed during interaction and how frequently that interaction occurs.

This study collected information about the academic standing of FGs at the end of the first semester of the first year of college. Further studies may wish to look at FGs'

longitudinal academic success over several semesters. Examining how FGs are faring academically at different points in their college career might allow for a better understanding of factors that ultimately lead FGs to obtain a college degree.

The relationship between significant factors and demographic variables was looked at separately in this study. A future study may wish to look at whether a combination of demographic variables and factors are significantly related to FGs' academic success. Doing so might reveal confounding effects between demographic variables that affect FG academic success.

This study looked at the significance of three broad areas related to academic success. Additional research could more fully explore one factor. For instance, by focusing on Student Effort and incorporating alternative measurements of this concept a more complete picture of variables that affect the academic success of first year FGs could be revealed. This could be done through instruments that measure student motivation, adjustment, or time management skills. Administering instruments such as these to first-year FGs would provide an in-depth portrait of FGs. Such studies could be further delineated by race and gender to render specific information about Student Effort in relation to sub-groups of FGs.

Results from this study indicated that a large number of FGs in this sample were enrolled at private institutions during their first year of college. Future studies could examine differences in academic success between FGs who enroll at private and public institutions. Such a study could reveal differences between institutional types in regard to the relationship between Institutional Environment, Student Effort, Agents of Socialization, demographic variables and FGs' academic success.

Finally, this study used data that were self-reported by first year FGs as related to the impact of Institutional Environment, Student Effort, and Agents of Socialization on academic success. A future study might approach the academic success of first-year FGs by using information reported by institutional officials in regard to activities offered to FGs. A study such as this would provide a comparison in regard to what is currently being done by institutional officials to facilitate academic success of FGs and the actual experience of FGs during their freshmen year.

Results also have implications for future policy. Implications are evident for policymakers at the institutional level in academic support services positions and in financial aid offices. Policymakers who are responsible for enrollment management and those who control funding also may use the results from this study.

Policymakers in academic support services may wish to target FGs based on gender, race, and their English speaking ability. Policies designed to encourage FGs who are males, AA, MA, and non-native speakers of English to enroll in specially designed seminars could provide such students with additional support. This support could facilitate academic success among groups of FGs who may otherwise be more at-risk academically. One policy that might encourage such enrollment would be to invite them to participate on an individualized basis during an on-campus visit prior to the start of freshman year. Personal contact such as this by institutional officials may capture the interest among students in these groups more than a blanket announcement or form letter advertising special academic support sessions.

Policymakers responsible for financial aid may want to take note of the fact that FGs in this sample were offered a significant amount of need-based aid that did not need

to be repaid. That may explain why financial need was related to the academic success of FGs. Financial aid officers may wish to develop a policy that would allocate grants and scholarships to FGs who demonstrate significant financial need.

Enrollment managers may wish to develop policies that encourage satisfaction among FGs with the Institutional Environment. For instance, the amount of contact FGs have with faculty and other college personnel might be increased if faculty and staff were given incentives to initiate such interaction.

Policymakers who are responsible for funding programmatic interventions for FGs may wish to consider which programs would target areas most closely associated with FG academic success. Policymakers could develop a reward system for student activity offices that develop and implement programs housed in first year residence halls, student life centers, or diversity and multicultural life offices that target the needs of FGs.

Findings from this study present several implications for future practice, research, and policy. However, this study was not without limitations.

Limitations of the Study

Initial delimitations of this study were addressed in Chapter One. By the conclusion of the research project, several other limitations related to this study were identified.

One was the definition of FGs that was used. This study defined FGs as a full-time, first-time students who indicated the highest level of education received by their mother and father was: grammar school or less, some high school, high school graduate, or some postsecondary education other than college. If a different definition of FG was used, results may have been different.

I decided to use five factors based on Pascarella and Terenzini's model (1991). If another theoretical model had been used that called for more factors, survey items may have loaded differently on more factors. Likewise, another limitation posed by this study is related to the creation of the factors used to predict academic success. The factors were created through a principal components factor analysis. If some other technique had been used to create the factors, other variables may have proven to be associated with the five areas presented by the theoretical model. If either of these steps were done differently, this could have changed the factors and ultimately may have changed the results of the model used to predict academic success.

In this study, academic success was defined as a GPA of 1.75 or above. If academic success had been measured by the number of credit hours successfully completed or level and degree of difficulty of courses enrolled in during the first semester freshmen year the number of more or less academically successful FGs might have been different. Considering a different definition of academic success may have led to a different relationship among the factors and demographic variables considered in this study.

Logistic regression was used for statistical analysis in this study. If a different approach had been used to predict academic success during data analysis results regarding the significant factors associated with academic success may have differed in some way. For example, if linear regression had been used to predict FGs' GPA, results may have revealed a more detailed analysis of FGs' academic standing in regard to the five factors used in this study.

Finally, a national data set was used for this study that may have posed a limitation. If results had been broken down by institutional selectivity, geographic region, or by some other means results may have been different. For example, this study used descriptive statistics to look at institutional type (public or private), the type of financial aid received by first year FGs, and academic preparation prior to enrollment. This analysis proved helpful for determining whether this sample reflected characteristics the literature associated with FGs. Looking at selectivity or the geographic region of the college might have provided further information as to whether FGs in this sample were truly representative of FGs nationally.

While there were several limitations, this study did provide a significant amount of information regarding factors and demographic variables that predict the academic success among FGs during the first year of full-time enrollment. Literature prior to this study has focused on explaining the academic success of FGs during college within the context of standardized test scores, academic preparation prior to enrollment, and outcomes at the end of the four years of college. Furthermore, most prior studies have compared FGs to NFGs.

This study is unique in that results captured specific variables within the institutional environment that higher education institutions can affect to influence the academic success among FGs during the first year of enrollment. Creating an engaging college environment that facilitates academically based interaction between faculty and FGs, and peers and FGs will increase the likelihood of academic success among FGs. An academically successful first year of college increases the probability FGs will persist to degree completion.

Factors identified in this study that predict the academic success of FGs are not surprising. While these factors may appear to be common sense to groups who deal exclusively with college students on a daily basis, they may be less intuitive to FGs who have no prior experience with the college environment. Furthermore, FGs may be at a greater risk for exposure to factors that negatively affect their academic success as they rely on peers to socialize them to the college experience. Institutional officials can make use of the information provided in this study to create specific programs designed to socialize FGs to the college environment prior to enrollment through an inclusive orientation program that targets the needs of first year FGs.

Furthermore, this study highlights demographic variables that impact the likelihood of academic success among FGs. Institutional leaders can utilize this information to continue to create environments on college campuses that are attuned to the needs of male, non-native speakers of English, AA, and MA FGs. Institutional officials can call upon specific offices on campus such as those familiar with the needs of non-native speakers of English and minorities, specifically AA and MA students, to work with academic administrators to create an environment that facilitates the academic success of first year FGs using the results of the study.

Beyond the immediate college campus, the results of this study also provide more information regarding the theoretical model proposed by Pascarella and Terenzini (1991). When considering first-year, full-time FGs, this study shows that the Institutional Environment, Student Effort, and Agents of Socialization are factors that work in combination to explain the academic success of FGs. Furthermore, these three factors are

more important for academic success among FGs during their first year than Background Characteristics and Structural Characteristics as defined in this study.

First-year, full-time, FGs who are exposed to an academically engaging college environment that promotes satisfaction with the overall college experience will more than likely find themselves positioned for continued academic success throughout their college career. Higher education institutions that make an effort to socialize FGs to college through well-thought out programs prior to enrollment and during their freshman year have a greater likelihood of producing FGs who continue to be academically successful. In combination with factors that promote academic success, institutions that make a concerted effort to provide matriculating FGs with need-based aid in the form of scholarships and grants will experience reciprocal benefits as FGs are more likely to finish their first year of college positioned to continue their college education. Furthermore, freshmen FGs who are male, African American, Mexican American, and non-native speakers of English enrolled at institutions who take purposeful action to create a supportive and inclusive environment for themselves are more likely to be academically successful.

Ultimately, FGs who are successful during their first year of college are more likely to persist to graduation. Obtaining a college degree will allow higher education institutions to continue to serve states and communities as benefits are reaped from an educated citizenry that is representative of the changing demographic population in the United States.

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Appendix A:
2002 Your First College Year Survey

6. Are you: (Mark all that apply)

- White/Caucasian
- African American/Black
- American Indian/Alaska Native
- Asian American/Asian
- Native Hawaiian/Pacific Islander
- Mexican American/Chicano
- Puerto Rican
- Other Latino
- Other

7. Is English your native language?

- Yes No

8. Since entering this college, how successful have you felt at:

(Mark one for each item)

	Completely Successful	Fairly Successful	Somewhat Successful	Unsuccessful
Understanding what your professors expect of you academically	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing effective study skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adjusting to the academic demands of college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Managing your time effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting to know faculty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing close friendships with other students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Rate yourself on each of the following traits as compared with the average person your age. We want the most accurate estimate of how you see yourself.

(Mark one for each item)

	Highest 10%	Above Average	Average	Below Average	Lowest 10%
Academic ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Artistic ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mathematical ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public speaking ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-confidence (intellectual)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-confidence (social)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Since entering this college, how often (Frequently, Occasionally, or Not at all) have you: (Mark one for each item)

	Frequently	Occasionally	Not at all
Attended a religious service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in organized demonstrations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smoked cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drank beer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drank wine or liquor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt overwhelmed by all you had to do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt depressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in volunteer or community service work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discussed politics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Socialized with someone of another racial/ethnic group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discussed religion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Indicate the importance to you personally of each of the following:

(Mark one for each item)

	Essential	Very Important	Somewhat Important	Not Important
Becoming an authority in my field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Influencing social values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping others who are in difficulty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a theoretical contribution to science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating artistic work (painting, sculpture, decorating, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing a meaningful philosophy of life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping to promote racial understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming a community leader	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrating spirituality into my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Since entering this college, how often (Frequently, Occasionally, Rarely, or Not at all) have you felt:

(Mark one for each item)

	Frequently	Occasionally	Rarely	Not at all
Lonely or homesick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worried about meeting new people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Isolated from campus life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A need to break away from your family in order to succeed in college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unsafe on this campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worried about your health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intimidated by your professors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bored in class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That your courses inspired you to think in new ways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That your job responsibilities interfered with your schoolwork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That your family responsibilities interfered with your schoolwork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That your social life interfered with your schoolwork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Where did you primarily live while attending college this past year? (Mark one)

- College residence hall, suite, or other campus housing
- Private home or apartment
- Other

14. Please indicate how often (Frequently, Occasionally, Rarely, or Not at all) each of the following has been included in your courses at this institution. (Mark one for each item)

Frequently
Occasionally
Rarely
Not at all

- Group discussions
- Student presentations or performances
- Formal lectures
- Research projects
- Multiple drafts of written work
- Group projects
- Weekly essay assignments
- Student evaluations of each other's work
- Field experience or internship
- Community service linked to coursework (service learning)
- Student-selected topics
- Laboratory component
- Required on-line interaction with professors and/or classmates

15. Since entering this college have you: (Mark all that apply)

- Changed your career plans
- Decided to pursue a different major
- Declared your major
- Joined a social fraternity or sorority
- Enrolled in an honors course
- Participated in varsity/intercollegiate athletics
- Enrolled in a remedial/developmental course
- Transferred from another institution
- Taken a college course or seminar specifically designed to help first-year students adjust to college (e.g., freshman seminar, student success seminar, University 101)
- Enrolled in a formal program where a group of students takes two or more courses together (e.g., FIG, learning cluster, learning community, linked courses)

16. Since entering this college, indicate how often (Frequently, Occasionally, Rarely, or Not at all) you: (Mark one for each item)

Frequently
Occasionally
Rarely
Not at all

- Turned in course assignment(s) late
- Spoke up in class
- Discussed course content with students outside of class
- Studied with other students
- Came late to class
- Skipped class
- Received tutoring
- Worked with a professor on a research project
- Used the Internet for research or homework
- Turned in course assignments that did not reflect your best work
- Participated in intramural sports
- Had difficulty getting along with your roommate(s)/housemate(s)
- Sought personal counseling

17. Compared with when you entered this college, how would you now describe your: (Mark one for each item)

Much Stronger
Stronger
No Change
Weaker
Much Weaker

- General knowledge
- Analytical and problem-solving skills
- Knowledge of a particular field or discipline
- Critical thinking skills
- Knowledge of people from different races/cultures
- Religious beliefs and convictions
- Ability to get along with others
- Library/research skills
- Ability to work as part of a team
- Understanding of the problems facing your community
- Understanding of national issues
- Understanding of global issues

Appendix B:
Psychometric Properties of the YFCY Survey Instrument

Psychometric Properties of the YFCY Survey Instrument

To determine the psychometric properties of the Your First College Year (YFCY) survey instrument, staff at the Higher Education Research Institute (HERI) performed a series of analyses designed to assess split half reliability, construct validity, and content validity. All reliability and construct validity analyses were conducted using data collected via the 2001 YFCY survey at 50 pilot institutions that were weighted to approximate the responses we would expect if all students in the mail-out sample had completed the survey. Data for the content validity analyses draw from student focus groups that were held in October 2001.

Reliability

Put simply, reliable instruments are consistent and dependable. Reliability is an estimate of the amount of error in a measurement. In technical terms Cohen and Swerdlik (1999) describe reliability as a “proportion that indicates the ration between the true score variance on a test and the total variance” (p. 146). The total observed variance in a measure is the sum of the true variance and the error variance. The closer the total observed variance is to the true variance among survey responses, the smaller the error and the more reliable the instrument. That is, if the true variance can be presumed to be relatively stable over time, error is suggested when a respondent’s answers vary across multiple administrations of a single instrument (or across parallel versions of that instrument).

We performed a “split-half” reliability analysis to determine reliability coefficients for the items on the YFCY instrument.¹ We opted to treat institutions, rather than individuals, as the unit of analyses, since YFCY data are most often reported as national or institutional aggregates (e.g., the percentage of first-year students that are satisfied with college or agree with a particular value statement). Therefore, we randomly divided respondents into two groups per institution and calculated item-by-item means for each group and then calculated reliability coefficients for all items by correlating the means across the institutional sub-samples. Generally speaking, the reliability coefficients ranged from .10 to .97 with an average reliability coefficient of .56. These findings suggest that the YFCY instrument is moderately reliable, although these statistics should be viewed as conservative estimates given the generally small respondent counts at the pilot

¹ “Test-retest” reliability, in which individuals’ survey responses are correlated across two independent administrations, often is used to estimate an instrument’s reliability. “Split-half” reliability, which involved correlating the two halves of a scale administered once, is an appropriate alternative to test-retest reliability “when it is impractical or undesirable to assess reliability with two texts or to have two test administrations” for reasons such as time or expense (Cohen & Swerdlik, 1999, p. 153). Repeated administrations also run the risk of being affected by actual (i.e., true score) changes in the phenomenon measured by the item.

institutions included in these analyses, as well as the small number of pilot institutions themselves.

Validity

In general, validity analyses assess the extent to which an instrument measures what it purports to measure. However, the question of validity depends, of course, on which particularly type of validity evidence one is seeking. As for predictive validity, there are numerous books and journal articles that demonstrate the predictive power of all of the student surveys under the Cooperative Institutional Research Program, which includes the Freshman Survey, YFCY, and the College Student Survey (CSS). Therefore, with respect to the YFCY instrument, HERI staff focused on two other measures of validity: construct validity and content validity. In our assessment of validity, the unit of analyses was the student rather than the institution.

Construct Validity

According to Light, Singer, and Willet (1990), construct validity “refers to the degree to which a measure actually assesses the underlying theoretical construct it is supposed to assess” (p. 156). To evaluate the construct validity of the YFCY instrument, HERI staff conducted a principal components factor analysis of all of the items on the survey to determine if survey items that seem to “fit together” on the surface actually do cluster statistically.

In these analyses, fourteen factors were extracted and rotated using varimax rotation techniques. Even after dropping survey items that loaded at less than .40, over 100 items from the YFCY instrument were included in these factors. Chronbach’s alpha values ranged from .31 to .89. Overall, the variables group together in ways that we anticipated. Similar factor analyses were repeated on 2002 YFCY data to yield 19 factors that contained over 100 items from the instrument (Chronbach’s alpha values ranging from .42 to .83) and on 2003 YFCY data resulting in 23 factors containing nearly 120 measures from the instrument (Chronbach’s alpha values ranging from .50 to .86). These results indicate that the YFCY instrument appears to measure several constructs that are intuitively logical.

Content Validity

Content validity refers to how well an instrument’s items sample “behavioral representative of the universe of behavior the test was designed to sample” (Cohen & Swerdlik, 1999, p. 177). To assess content validity, it is recommended to rely on a panel of experts who are familiar with the constructs that the survey measures. Our experts were second-year students at UCLA who had completed their first year of college in Spring 2001. These students were invited to participate in one of three focus groups. In each focus group, participants were asked to complete a set of survey questions and then asked to reflect on the clarity and relevance of each

question and stem. Additionally, participants were asked to explain their understanding of the response options. Overall, the feedback from students in these focus groups indicated a high degree of content validity for the YFCY instrument.

References

Cohen, R.J. & Swerdlik, M.E. (1999). Psychological testing and assessment: An introduction to tests and measurement. Mountain View, CA: Mayfield Publishing Company.

Light, R.J., Singer, J.D., & Willet, J.B. (1990). By design: Planning research on higher education. Cambridge, MA: Harvard University Press.

Appendix C:

IRB Approval




Dr. David M. Moore
IRB (Human Subjects) Chair
Assistant Vice President for Research Compliance
CVM Phase II- Duckpond Dr., Blacksburg, VA 24061-0442
Office: 540/231-4991; FAX: 540/231-6033
email: moored@vt.edu

DATE: December 8, 2004

MEMORANDUM

TO: Joan B. Hirt Educational Leadership & Policy St. 0302
Catherine T. Amelink WLPS 0132

FROM: David Moore 

SUBJECT: **IRB Exempt Approval:** "Predicting the Academic Success of First Generation Students" IRB # 04-624

I have reviewed your request to the IRB for exemption for the above referenced project. I concur that the research falls within the exempt status. Approval is granted effective as of December 8, 2004.

Virginia Tech has an approved Federal Wide Assurance (FWA00000572, exp. 7/20/07) on file with OHRP, and its IRB Registration Number is IRB00000667.

cc: File