

VITA

Ralph Stephen Manuel

Born: November 27, 1964
Hanover, New Hampshire

Educational Experience: Master of Science, College Student Personnel
Indiana State University
Terre Haute, Indiana, 1994

Bachelor of Arts, Psychology,
Wabash College,
Crawfordsville, Indiana, 1987

Professional Director of Admissions
Northeastern Ohio Universities College of Medicine
Rootstown, Ohio, 1999- Present

Acting Director of Admissions
Indiana State University
Terre Haute, Indiana, 1998 - 1999

Associate Director of Admissions
Indiana State University,
Terre Haute, Indiana 1995-1998

Assistant Director of Admissions
Indiana State University,
Terre Haute, Indiana 1990-1995

Admissions Counselor, Wabash College
Crawfordsville, IN, 1988-1990

GENDER DIFFERENCES AND RETENTION CHARACTERISTICS FOR FIRST
GENERATION COLLEGE STUDENTS

A Dissertation
Presented to
The School of Graduate Studies
Department of Educational Leadership,
Administration, and Foundations
Indiana State University
Terre Haute, Indiana

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Ralph Stephen Manuel
December 2001

APPROVAL SHEET

The dissertation of Ralph Stephen Manuel, Contribution to the School of Graduate Studies, Indiana State University, Series III, Number 859, under the title *Gender Differences and Retention Characteristics for First Generation College Students* is approved as partial fulfillment of the requirements for the Doctor of Philosophy Degree.

9/28/01

Date

Todd Tubitt

Committee Chairperson

Greg R. Lee

Committee Member

[Signature]

Committee Member

9/28/01

Date

Ralph S. Conner

For the School of Graduate Studies

ABSTRACT

The purposes of this study were to determine if any significant differences existed between: a) the retention rate of first generation men and first generation women, b) first generation males and first generation females as measured by the SIQ, b) first generation men who persisted and first generation men who did not persist as measured by the SIQ, c) first generation women who persisted and first generation women who did not persist as measured by the SIQ.

The participants of the study were 1026 first generation students who were enrolled at a midwest public university and completed a questionnaire. Additional information was supplied by the university research and testing office

A chi-squared analysis determined there was no difference in retention rates for first generation women and men. A stepwise discriminant analysis was used for the remaining hypotheses. Results showed First generation women and men attend college for different reasons, and men are more tied to financial, occupational and economic goals. Differences existed in what men women viewed as what college is supposed to help you accomplish. The single best predictor of whether a student would be retained or not retained for both the male and female groups was the high school grade point average.

ACKNOWLEDGEMENTS

This dissertation is dedicated in memory of my grandparents Ralph and Francis Manuel, E. Herbert and Jane Warner.

I would like to extend my appreciation to my committee chair Dr. Todd Whitaker, for his support, encouragement, and personal attention. I have learned a great deal from Dr. Whitaker professionally and personally. I would also like to thank the other members of my committee, Dr. Osmon and Dr. Ulm, for their time, patience, and assistance as I wrestled with my dissertation. I would like to thank Dr. Rebecca Libler for her encouragement, kindness, willingness to listen, and support during this program. Dr. Libler continues to be a role model for me.

To Mr. Richard Reihl and Mrs. Leah Sluder, both of you not only encouraged and allowed me to pursue my degree, but also continue to serve as both a mentor and role model. You both taught me how to be a better admissions professional. I would like to thank the 1998-1999 Wednesday Residency group for your continued support, and friendship. When you have friends with you on a long hard journey, it goes smoother and makes it more enjoyable.

To all of the teachers and faculty that I have had throughout my education, I want to thank you. I have been fortunate enough to have some inspiring, caring and committed teachers during my life and I have benefited from them greatly. To all of the faculty and staff in the Educational Leadership, Administration, and Foundations Department, I would like to thank you for helping me and for always putting the students first.

To Dr. Bill Tobin, I am very grateful for all of your help, friendship, laughter, advice, and support. You were an inspiration to me as I trudged up stairs to work on my dissertation. I would like to thank Mrs. Melissa Hughes for being my editor and friend. You were always willing to read, comment, and edit at a moment's notice.

I am grateful to my brothers, Mark, David, and Brad, for your support, encouragement, humor, and laughter just when I needed it. To my parents I owe a debt that I can never repay. You both serve as an inspiration to me and I could never have come this far without your love, support, encouragement, faith and guidance. You actually made me believe I could do it.

To my wife Nicole, the love of my life, thank you for everything. You helped me in so many ways and at so many different times. There are not enough words or space to express all of my thoughts and feelings in trying to thank you. Thank you for your sacrifice, patience, support, encouragement, and love. We did it.

TABLE OF CONTENTS

	APPROVAL SHEET	ii
	ABSTRACT.....	iii
	ACKNOWLEDGEMENTS	vi
	LIST OF TABLES	vii
Chapter		
1.	INTRODUCTION	1
	Statement of the Problem.....	6
	Purpose of the Study	7
	Research Questions.....	7
	Null Hypotheses.....	8
	Definition of Terms.....	8
	Assumptions.....	11
	Delimitations.....	11
	Limitations	12
	Summary and Organization of the Study.....	13
2.	REVIEW OF RELATED LITERATURE	14
	Theories of Retention.....	15
	Women in Higher Education	19
	High School Background.....	24
	Comparison of Retention Rates	26
	First Generation	28
3.	RESEARCH METHODS	32
	Null Hypothesis	33
	Data Sources	34
	Data Collection Process	34

	Instrumentation	36
	Statistical Analysis.....	36
4.	RESULTS	40
	Null Hypothesis One.....	46
	Null Hypothesis Two	48
	Null Hypothesis Three	54
	Null Hypothesis Four.....	57
	Summary of Findings.....	60
	Summary of Descriptive Data.....	60
	Summary of Hypothesis Testing.....	61
5.	SUMMARY OF FINDINGS AND DISCUSSION.....	62
	Introduction.....	62
	Discussion of findings.....	63
	Conclusions.....	68
	Implications.....	69
	Recommendations.....	70
	Summary	72
	REFERENCES	74
	APPENDIXES	78
	A. Spady's Theoretically Based Model.....	79
	B. Spady's Empirical Model.....	81
	C. Tinto's Conceptual Schema.....	83
	D. Pascarella's Conceptual Model	85
	E. Bean's Longitudinal Model.....	87
	F. New Student information Questionnaire	89
	G. Means and Standard Deviations for First Generation Males and Females.....	96
	H. Means and Standard Deviations for Retained and Not Retained Males.....	100

I. Means and Standard Deviations for Retained
and Not Retained Females104

LIST OF TABLES

Table	Page
1	Gender Breakdown of First Generation Students Responses41
2	A Comparison of High School Grade Point Averages Between First Generation Men and First Generation Women.....41
3	A Comparison of High School Class Rank Between First Generation Men and First Generation Women.....42
4	A Comparison of SAT Math Scores Between First Generation Men and First Generation Women.43
5	A Comparison of SAT Verbal Scores Scores Between First Generation Men and First Generation Women.....43
6	A Comparison of First Semester Grade Point Average Between First Generation Men and First Generation Women.....44
7	A Comparison of Second Semester Grade Point Average Between First Generation Men and First Generation Women.....45
8	A Comparison of Third Semester Grade Point Average Between First Generation Men and First Generation Women.....45
9	Prevalence (%) of Retention Among Male and Female First Generation Students.....47
10	Significant Means and Standard Deviations of Predictor Variables as a Function of First Generation Males Compared to First Generation Females48
11	Predictor Variables For First Generation Men and First Generation Women in a Stepwise Discriminant Function Analysis51

12	Classification Analysis for First Generation Students Along Gender Lines.....	53
13	Significant Means and Standard Deviations of Predictor Variables as a function of Retention for Males	54
14	Predictor Variables in Stepwise Discriminant Function Analysis for Retained Males.....	55
15	Classification Analysis for Retained First Generation Male Students.....	56
16	Significant Means and Standard Deviations of Predictor Variables as a function of Retention for Females	57
17	Predictor Variables in Stepwise Discriminant Function Analysis for Retained Females	58
18	Classification Analysis for First Generation Retained Female Students	59

Chapter 1

INTRODUCTION

Education in America has always served as one of the rungs on the ladder towards success. The formulation of this ideal is demonstrated by the Morrill Act in 1862, which gave each state 30,000 acres of land for each state congressional member, with the understanding that the state was supposed to sell the land and create colleges. The Morrill Act was enacted to educate citizens and provide practical education at a low cost. The legacy passed down for generations is the hope that by receiving an education children would have more opportunities, success, and a better life. For students whose parents have not attended college, being the first brings additional challenges in many forms (York-Anderson & Bowman, 1991). By studying first generation college students the goal is to bring more focus to retention and persistence resources and aid. This is especially true today since higher education institutions have retention at the front of their agenda (Eglin, 1999).

For decades, one out of every three college students drops out by the beginning of their second year, and half the students who begin college leave before completing either a two or four year degree (Gerald, 1992; Tinto, 1993; Pantages & Creedon, 1978). State legislatures have begun to measure and translate success in school funding formulas using retention figures and graduation rates (Eglin, 1999; Niba, 1989). For schools this means increasing retention efforts and programs for students at risk of dropping out.

Schools have a limited amount of money for retention programs. There are a limited number of special advisors and members of the university community to help with the retention, and only so much money can be spent on new and special programs for retention (Tinto, 1982). Ideally, all students would receive special advising, one on one mentoring and counseling, and the help that they need to fully integrate into the college environment, but due to limited funds, this is not the case (Tinto, 1982).

To help identify which students need more help and special programs, subsets of the general student population are created that identify types of students who are at risk of not continuing (Lenning, 1982). These students are at risk of not being retained, or of not graduating, and, therefore, not being successful at the university. A university would typically identify the group of individuals by establishing the overall university rate of persistence and retention and then identifying groups who fell below the norm. The rate of persistence at one campus or higher education institution may be significantly different than the rate at another school and even within the institution itself (Astin, Tsui, & Avalos, 1996). The difference between the university persistence rate and the identified at-risk groups might also vary greatly from university to university. By identifying a subset or special population that is at-risk, the university can then provide services and intervene to try and help members of this subset (Lenning, 1982).

When an at risk subgroup is identified, the next logical step is to determine the common characteristics of the subgroup. By identifying shared characteristics of the at-risk group the next step is to see if those characteristics are tied to the retention and persistence. The type of characteristic then determines the type of intervention.

Intervention can mean anything from special activities, workshops, one on one counseling, a special cohort, academic support, or whatever appears to be appropriate. If an institution intervenes in a careful and timely manner then a significant amount of attrition can be prevented (Pascarella & Terenzini, 1980). Given this information, and the fact that most students leave college during their freshman year or between their freshman and sophomore year (Pascarella & Terenzini, 1980; Tinto, 1993), it is clear that retention efforts must be concentrated on the freshman year.

Researchers have identified characteristics of high risk students as being first generation (Riehl, 1994); disadvantaged (Bowers, 1970; Stanley, 1971); disadvantaged socio-economically, culturally, or in academic background (Moore, 1976; Nisbet, Ruble & Shurr, 1982; Spady, 1970; Stanley, 1971; White & Sadlecek, 1986); the specially admitted (Houston, 1980); and ethnic minorities (Pfeiffer & Sedlacek, 1970; Tracy & Sadlacek, 1984 & 1985). Specifically, the sub group population of first generation students have been demonstrated to have a lower persistence rate, to be less academically prepared, and to graduate at a lower rate than non first generation students (Riehl, 1994).

There have been numerous studies that have focused on gender differences for success, preparedness, retention, and graduation, but there is a paucity of literature on the differences of gender within first generation students (Riehl, 1994; Terenzini et al , 1995). What literature does exist outlines the differences based on simple descriptive differences using percentages and descriptive questions, but no statistical analysis tied to common factor differences or retention. By examining these two subgroups, there can be a determination if one of the groups might need more intervention. We can also determine

if there are any common characteristics in the sub groups, and if these characteristics play a role in persistence or retention.

When retention was first studied researches broke students down by gender. This would appear to be one of the first logical step in studying first generation students. In the early 1970's both Spady and Tinto started their analysis by breaking students down into gender and background characteristics. It was Spady who first constructed a model that took what was then referred to as background characteristics into consideration. Unfortunately, what researchers did then and now is to break down students into gender and background characteristics, but only compare them using simple percentages and not determine if they are any significant differences. There are several studies that demonstrate the differences of background characteristics on retention, persistence and gender (Astin, Tsui, & Avalos, 1996), but the two variables have not been studied against each other to determine if significance exists.

Ironically, as retention and persistence are coming under increasing scrutiny there has recently been attention focused on the imbalance in gender now found at higher education institutions, but that imbalance is the opposite of a few generations ago (Campbell, 1923). Institutions are starting to see the percentages of men decline, and in response taking special efforts to recruit and admit men. This is very different from just 30 years ago, and a far cry from the turn of the century when women were fighting for simply a seat in the class room.

Thirty years ago the "chilly climate" of higher education institutions was exposed and the fact that women were underrepresented in the college classrooms and locked out

of certain majors raised concerns across the country. While certain majors are still dominated by gender (NCES, 1995), the concern for women getting an equal place has been replaced by trying to find men to fill seats in the classroom. Students not attending college, or dropping out of college is not only a problem for the colleges and universities, it is a problem for society (Attinasi, 1992). Pascarella and Terenzini (1991) found evidence that college attendance had a positive effect on learning and cognitive development, attitudes and values, psychological development, moral development, socioeconomic outcomes, quality of life indexes, and intergenerational effects.

The stake that society has is not only from the standpoint of having a more highly educated work force, or highly educated society overall, but also from a Marxist point of view to bring the classes together. The number of students leaving college has a negative impact on American society (Levin, 1972). If the students who succeed are simply those sons and daughters of the elite and those better off financially, then a meritocracy continues. If, however, education is supposed to be the equalizer and should allow those to climb out of their social and economic class, then we must make sure that retention rates and persistence rates are equal across first generation and non first generation students. This will hopefully allow the classes to come closer together in a more productive society overall and then not only would we live in a more equal society, but also a financially more productive one.

The state supports each student attending a public university by subsidizing educational tuition costs. The state has invested money in the student who is attending college, and the student failing to earn a degree is not showing the state any return on the

money invested. To some in state government, persistence rates and graduation rates determine either good or bad investments. The institution not only has a reimbursement issue to face, but the lost revenue of students who drop out and how that impacts the universities dependency on the freshman class and the financial health of the institution (Tinto, 1987).

Retaining a higher number of students allows the university to depend less on the incoming students for the stability of the overall enrollment. Higher retention means that the number of students attending a school is spread out more evenly over each class at the university. Low retention means that the university or college is dependent on bringing in a large number of students each year. By being less dependent on the size of the freshman class, the university might not have to spend as much money on recruitment, or be as vulnerable to a major shift in university enrollment (Sheffield & Meskill, 1974).

Statement of the Problem

For first generation students just reaching the doors of higher education takes a little more effort and resolve (Stage & Hossler, 1989; York-Anderson & Bowman, 1991). If universities are going to be able to better target where the retention dollars are going to help the most, then we need to break down a population that has already been identified as at risk (Riehl, 1996). Identifying the set of characteristics an at risk first generation female or male might possess would allow a university to determine a specific student who is at risk and to offer that student the help that she or he needs to continue. Simple percentage comparisons will not provide the information, the difference in characteristics

need to be significantly different. It is not enough simply to look for differences between the two genders, the next step is to identify significant characteristic differences along gender lines. This will help us determine if the differences across gender have any influence in gender retention rates and persistence.

Purpose of the Study

The purpose of this study was to determine if there were any significant differences between first generation males and females, and to determine if there were any significant differences between first generation men who persist and first generation men who do not persist, and to determine if there were any differences between first generation women who persist and first generation women who do not persist. The study used a pre-enrollment questionnaire given during the new student registration program, matched with information provided by the institutional research and testing office.

Research Questions

Is there a difference in the persistence and retention rate of first generation females and males? Is there a difference in academic background between first generation females and males? Is there a difference in degree aspirations and performance between first generation females and males? What are the characteristics that differentiate first generation men who persist in college with first generation men who do not persist in college? What are the characteristics that differentiate first generation females who persist in college with first generation females who do not persist in college? If the first

generation males and females are not beginning the climb on equal footing concerning common factors or attributes that influence retention, or at risk characteristics can be identified, then institutions can offer targeted academic assistance or appropriate assistance based on the identifiable characteristics.

Null Hypotheses

Ho1: There is no significant difference in retention for first generation males compared to first generation females between the first and second year of college.

Ho2: There are no significant differences in common characteristics, as measured by the SIQ, of first generation males and first generation females.

Ho3: There are no significant differences, as measured by the SIQ, between first generation men who persist, and first generation men who do not persist.

Ho4: There are no significant differences, as measured by the SIQ, between first generation women who persist, and first generation women who do not persist.

Definition of Terms

Common Characteristics. For the purpose of this study common characteristic refers to the variables measured by the SIQ.

Degree Aspirations. For the purpose of this study before students enroll they will be asked to what level they wish to pursue a degree. The types of degree offered range from a certificate to the professional degree's listed. The type of degree is mentioned such as Master's and Doctorate, but not the area.

First Generation Student. A student who has had neither parent enroll at a higher education institution (Terenzini et al , 1995).

Freshman Year Academic Performance. For the purpose of this study this will be measured by the students cumulative grade point average at the end of the freshman year.

Freshman Year. For the purpose of this study the freshman year is comprised of the first fall semester and the following spring semester only. If a student enrolls in courses the summer prior to the first fall, then these courses are included in the freshman year performance.

Freshman Year Experience Survey. (FYE) The survey given during the spring second semester of the freshman year (Appendix G).

High School Class Rank. For the purpose of this study high school class rank is defined as the final high school class rank listed on the high school transcript. The high school class rank will be converted to a percentage for all of the students in the study. The percentage will be represented by the place the student is listed in the class divided by the number of students listed in the class. In a high school, class rank is determined by the students grade point average.

High School Grade Point Average. For the purpose of this study the final cumulative grade point average found on a student's final transcript. The cumulative grade point average is the mean grade point average taken over a student's entire enrollment in high school.

National Standardized Exams. For the purpose of this study the Scholastic Assessment Test (SAT) and ACT are the two exams that will be used.

New Student Advisement and Registration Program. (NSARP) The registration program that brings new students to campus to meet with advisors and to register for fall classes.(Riehl, 1994)

New Student Information Questionnaire. (SIQ) The questionnaire given to new students during New Student Advisement and Registration Program (Appendix F)(Riehl, 1994).

Persistence. Persistence refers to the percentage of students who wish to continue enrollment and complete a degree, and the number that actually do so fall semester to fall semester. This means that students who list that they do not plan on getting a degree, or who plan on transferring, are not included (Dey & Astin, 1993).

Pre-Enrollment Factors. For the purpose of this study this refers to a students academic background, and is made up of a student's high school grade point average, national standardized test scores, and high school class rank. It also includes the level of degree aspirations that a student holds prior to their college enrollment and answers given on the SIQ.

Retention. For the purpose of this study, the number of students who return to the institution from the first fall to the following fall semester. In this study we are examining students whose first term of enrollment was fall of 1997, and if they returned the fall of 1998. We are also including those students who enrolled the fall of 1998 and whether they enrolled the fall of 1999.

Self Prediction of First Semester College Grades. For the purpose of this study, before students begin classes they will be asked to estimate what their grade point

average will be at the end of their freshman year. Students make the estimate on a four point scale.

Assumptions

The existing assumptions of the study were:

1. The information provided by the registrar's office is accurate.
2. The information provided by the students is accurate.
3. The students understood the questionnaire and what was being asked.
4. The first generation population at the institution studied is a representative sample of the first generation student population.

Delimitations

Delimitations of the study existed in the following manner:

1. The time frame of the student sample data collected was over a two year time period from 1997 to 1999.
2. The sample population was from one public university in the state of Indiana.
3. The questionnaire was given in the morning of New Student Advisement and Registration. Students who arrived significantly late, would typically not complete a questionnaire and, thus, were not a part of the sample.
4. The majority of students taking part in New Student Advisement and Registration were traditional age college students.

Limitations

Generalizations from the study were limited to the degree that:

1. A school's population is representative of the population overall.
2. The study was limited to students who turned in the questionnaire and responded to the requested information.
3. The student population studied attended the New Student Advisement and Registration program and registered for classes before the semester began. Students who missed the official registration program, or arrived late to campus were not represented.
4. Students who do not persist or were not retained from one fall to the next are all being considered "withdrawn" or non persisters even though there could be students who had transferred to another school or institution.
5. The limited period of time that the sample population was studied does not account for students who are simply taking a semester off, and plan on returning after sitting out for a semester. Students who returned after "stopping out" during the time period of the study are going to be counted equally to those students who never returned.
6. The study compared students in terms of grade point averages, but not course work. This means that the student groups being compared may not have taken the same courses in either high school or college.
7. All students were considered regardless of whether they were full time or part time.

8. There were some high schools, typically small private ones and home schools, that do not class rank their students. Those students are not reflected in the class rank comparison, but were included in the rest of the study.

Summary and Organization of the Study

The study will be divided into five parts. Chapter One will provide a background of the problem, importance of the study, purpose, the research questions, null hypotheses, definition of terms, assumptions, delimitations, limitations, and organization of the study. Chapter Two will present a literature review, discuss factors related to retention and persistence, and discuss gender research related to the problem. Chapter Three will present the site, sample, means of data collection, instruments used and method of analysis. Chapter Four will present a description of the sample, analysis of the independent factors, and the major finding of the study. Chapter Five will present a summary of the findings, conclusions, practical implications, and recommendations for future research.

Chapter 2

REVIEW OF RELATED LITERATURE

There are three main bodies of literature that are relevant to this study: Research on the post secondary attendance rates and persistence by gender, research on first generation students, and the general theories of student retention and persistence.

A student attrition model can be used to predict which students will drop out (Bean, 1982). For this reason the theoretical models of retention attempt to bridge the gap between academic reasons and non-academic reasons to explain retention and persistence. The reason for this is simple; the majority of students do not leave on institution due to academic failure (Tinto, 1987). While each retention theory identifies academics as a reason for departing from the institution, the different theories of retention and persistence all try to answer the question of why a student in good academic standing would chose to leave. While the major theories of retention and persistence all have an academic component, it is in the area of the non-academic factors that differences begin to emerge. The majority of non-academic factors are associated with background characteristics, social integration with student and/or faculty, student commitment, institutional commitment, and student satisfaction.

Theories of Retention

William Spady developed one of the first theories of student retention and persistence, and is credited with trying to unify the operational definitions used in the field of retention and persistence (Bean, 1982). Spady outlined the different problems that can be found in the definition of dropout: The first definition includes anyone leaving a college at which the individual has registered, while the second definition refers only to individuals who never receive a degree from any college (Spady, 1970). The first definition is the one that is used by most researchers. However, as Spady points out that in research done by Iffert in 1958, approximately 60 percent of the students who leave a school by the first definition, will eventually receive a degree from somewhere (Spady, 1970).

Spady notes that "a growing body of data that suggests that the nature and strength of college goals and orientation are differentially linked to certain outcomes, depending on the sex of the student" (Spady, 1970, p. 72). Spady generalized that there is less economic and social pressure on women, and that for men the occupational structure and their future status in society and economic status depend on finishing college. Spady states that this theory would be supported by more men graduating on time and more men who are still enrolled after four years. Spady cites studies by Bayer (1968) and Trent and Medsker's (1968) as supporting the theory with empirical evidence. Spady asserts that his theory is also supported by evidence from other studies by Lembesis (as cited in Spady, 1970) and Robinson (as cited in Spady, 1970), that found that more women than men leave college voluntarily, and that more men than women are dismissed.

Spady's theory was rooted in Durkeim's theory of social integration (Spady 1971).

Durkeim theorized that suicide resulted from individuals who could not successfully integrate into society. This lack of integration was rooted in not being able to find others who shared similar interests, feelings, and beliefs (Durkeim, 1951). Applying Durkeim's theory to students entering college, Spady asserted that each student will bring to college a different set of background experiences, values, expectations, and goals that have been shaped by the student's environment and past. The more readily adaptable and similar a student's background is to the new college environment the more socially integrated a student will be. Spady referred to the interaction and adaptability of a person's past with the new experiences and environment of college as "normative congruence" (Spady, 1971). Spady attributes to the research of Gurin, Newcomb, & Coke (as cited in Spady, 1970), the dimensions of family and cultural background variables and the academic potential that Spady adds to Durkeim's theory of suicide. Spady asserts that the factors added by the work of Gurin et al (as cited in Spady, 1970) are imbedded and are the foundation of normative congruence.

Spady wanted to determine what characteristics made up the student who was most likely to persist and to use this information as the platform to recruit other students with the same characteristics (Spady, 1970). In the early seventies, Spady used multi-variate analysis to show a relationship between student characteristics for students who continued and those that did not. Spady began his work by studying a student's family background and its impact on a student's academic and social integration. To support the model he developed ten variables: family background, academic potential, friendship support, intellectual development, grade performance, social integration, satisfaction,

institutional commitment, first-year dropouts, and graduation (Spady 1971). Through his model Spady also explored gender differences and built his first theoretical model differences in gender (Spady, 1971, p. 58)(Appendix A). In the 1971 study that created his model Spady separated the results of his ten variables along gender lines. Through his model he created one model that applies to women and one model that applies to men (Appendix B). Spady attributes most of the differences in the model to normative congruence or other simple gender differences.

With the work of Spady serving as a platform, Tinto began his conceptual model for explaining and predicting student dropouts (Bean, 1982; Pascarella & Terenzini, 1980). While Tinto simplified Spady's model and clarified and extended the role of social and academic integration (Appendix C) his most important contribution was to conceptualize the process as a an interactive and a cyclical process. Tinto's concern was not in identifying the descriptors of those at risk of dropping out, but rather the process by which students reached their decision to leave. The Tinto model conceptualized retention as a reaction to the academic and social environment that the student experienced. To Tinto, a student's social integration was the result of the quality of peer group and faculty interactions, and the student's academic integration was a result of academic and intellectual performance. Tinto believed that while background variables are important, it is also the motivation of the student that is important. Motivation of the student meant both to the institution and also to the goal of getting a degree or continuing (Astin, 1975). "Given individual characteristics, prior experiences, and commitments, it is the individual's integration into the academic and social systems of the college that most directly relates to his continuance in that college" (Tinto, 1975, p. 96). Tinto believed that

the integration of the student both in the academic and social systems would affect the student's commitment. If a student had a high academic and social integration he or she would be very committed not only to getting a degree, but also to the institution. If a student was committed only to the institution, but not the goal, then the student would do simply enough to get by and continue. If the student was only committed to getting the degree then a student might transfer to a more prestigious school or a school where getting the degree might be faster, or decide to simply "stick it out" (Astin, 1975) and remain enrolled. Tinto cautioned against dropout inferences from one institution to another due to the differences in types of schools and also student body characteristics. For this, and other reasons, Tinto believed that there were no easy answers or reasons as to why students chose to leave college (Tinto, 1987).

The next two models of retention build on the foundation of both Spady (1971) and Tinto (1975). It is easy to note how Pascarella's conceptual model for research on student and faculty informal contact (1980) builds upon the previous retention models of Spady and Tinto (Appendix D). In Pascarella's model social integration, especially informal contact with faculty, and institutional factors affect the academic side or educational outcomes of the student. Pascarella notes the two-way influence of many variables and the interaction of those variables, and conceptualizes withdrawal as a longitudinal process that is interactive. For example, a student's grades can affect other college experiences such as the interaction in the classroom, with peers, with faculty and administrators. Pascarella developed the institutional factors in the conceptual landscape of retention models.

Bean's Longitudinal Model of factors that affect retention decisions (1990) are in some ways an extension of the earlier models, but Bean refers to his as a 'causal' model. Bean also adds the specific category of intent to leave. Bean criticized Spady's and Tinto's model as having too many broad categories and no directional causality. His criticism of the other models is that there is no distinction made between what determines the student attrition (analytic variables) and what are correlates of student attrition (demographic variables) (Bean, 1980). Without making a distinction between these two in a student attrition model, the model is useless. Bean based his model on the organizational turnover model of Price and Mueller (as cited in Bean, 1982) and believed that students left school for the same types of reasons that employees left work. Through the use of path analysis Bean developed a retention model for both men and women (Appendix E). Bean cites specific sub-categories under each area taken into consideration to allow for the operational definitions to remain clear.

Looking at these models that serve as the basis for almost all retention and persistence studies it can be noted that the models have several commonalities. Each of the models outline the importance of pre-existing conditions, such as academic and family background. Each of the models identifies retention and persistence as a longitudinal process. The majority of models then focus on factors that influence a student during the enrollment period such as social and academic experience.

Women in Higher Education

In the 1850's there was a surge in the higher education movement in the United States. Not only did the number of colleges and universities increase, but also the

opportunities for women to attend both single sex institutions and co-ed schools. In 1866 Emily Davis wrote The Higher Education of Women and argued that many common beliefs concerning women in education were not true, and that an educated woman could be a better mother, wife and companion for her husband. Davies outlined that the common belief suggested a 'natural' order of things: The natural order maintained that the man is the one who is charge of the household, and that the women's role was that of mother and wife. The beliefs sprang from and were supported by Christian religion. Other common beliefs held that women were emotional and apt to not be as logical and objective as men. Women were led by the heart, and men by the head, that a women's place was to comfort, and a man's to protect and provide. Davis attacked the common beliefs and tried to argue that educated women could be better community citizens. Davis further argued that if an educated man is better than an uneducated man, then the same should apply in the case of women. If the goal of society is to lift everyone up, and to have a civil and just society, then it would benefit everyone to have a society in which everyone is educated.

In the 1920's Doak Campbell provided statistical arguments for women achieving higher education. Campbell wrote in hope of 'contributing to the better education of the 600,000 women enrolled in the higher education institutions of America (Campbell, 1923, introduction). Campbell surveyed 1,500 women graduates of colleges and universities and broke the results down into four areas, college women and homemaking, college women and vocations, college women and vocational interests, and considerations involving the curriculum revision. Campbell's effort was to break "the assumptions, often freely made, that colleges, particularly women's colleges, are

dangerous agencies for reducing the marriage rate" (p. 8) and to demonstrate that educated women have the same marriage rate as non-educated women. Campbell also tries to dispel other common myths such as "contrary to many popular beliefs, they have borne children at a rate that would give little support to the idea that college education of women is a certain means of reducing the birth rate" (p. 16), and Campbell noted that educated women who had children wished that they had taken more courses in home economics.

Campbell also sheds light on the status of women at the turn of the century in his chapter on vocation. Campbell points out the fact that while women do not attend college with the thoughts that the typical women's areas are where they will work when they graduate, it is often the jobs that they end up with. The percentages show that while women aspired or planned on careers outside of education and clerical fields, it is where they often ended up. The author points out that this is because of the limited careers that are available and open to women. The concern is that eventually the field of education will be overrun with too many applicants. Teaching will not be able to supply enough jobs, so the talents of individuals will be wasted and the supply will force the wages for teachers to plummet due to the oversupply. Women who had hoped for or planned for other careers such as medicine, soon found upon graduation that these less traditional career fields were not possible. While Campbell argues for opening the doors of education for more women he also insists that women need to be allowed to take more courses that will help them be successful when they graduate.

While the beliefs and attitudes of Davies and Campbell might seem ancient history, the same role biases and treatment of women is found through the statistical

research of Myra and David Sadker in Failing at Fairness: How America's Schools Cheat Girls. In examining the American School system in the 1980's the Sadkers find that we have not come as far as some believe in tearing away the traditional beliefs and views of women in society. In the research conducted by the Sadkers' we find a stunning portrait of the role bias and treatment of women. "most teachers are stunned to see themselves teaching subtle gender lessons along with math and spelling"(p. 46). The Sadkers' research indicated that professors tended to comment on the appearance of female students. Teachers would complement the female students in terms of the student's dress, hairstyle, and physical appearance. This reinforces the stereotype and belief that women need to concentrate on their appearances, and less on their minds. It is a distraction and reinforces the individual is not just a student, but being judged on their appearance.

Sadkers' research indicated that when young women are "reinforced for passivity, their independence, and self-esteem suffer" (p. 44). Teachers consistently would call on male students and make positive comments towards their responses. Female students were normally not called upon, and if called upon, were interrupted or not paid attention to. It is almost as if they were treated like they were not in the classroom. Over time, this type of treatment has to cause women to wonder if they belong in the college environment, and it has to offer them less of a supportive environment (Sadker & Sadker, 1994).

"At Iowa State, 65 percent of female students said that they had been the target of sexist comments, and 43 percent said professors flirted with them" (Sadker & Sadker, 1994, p. 172). This type of hostile environment is completely detrimental. However, aside from this, it sends the message not only to the student offended, but to all the others that

she tells that the teacher thinks of her in that way. The teachers are not providing an environment that is one where the thoughts and ideas can be expressed. Their female sexual role is being exploited.

The effects on the career aspirations are evident from the research. "At first the researchers were surprised that so many (women) arrived on campus with clear ambitious career goals, but after awhile they found a gradual but persistent drop in professional aspirations" (Sadker & Sadker, 1994, p. 185). Gender differences with regards to choosing an academic major begin during the freshman year (Astin, Korn, & Mahoney, 1994). In looking at the environment it is no wonder that women start to question if they want to pursue a career when they can not even find support for it at the undergraduate level.

Two prime examples of gender roles interfering with the educational experience are: "Many women experience a campus climate reminiscent of an earlier time when courtship was more important than careers" (Sadker & Sadker, 1994, p. 186). and "in interviews for limited number of medical schools openings, women were often asked to respond to illegal questions about marriage plans and children" (Sadker & Sadker, 1994, p. 190).

The questions that Davies raised, Campbell combated, and that the Sadkers quantified are all dealing with the traditional role of women in society and how that relates to women achieving and attending higher education. The common opinions concerning women in society that Davies and Campbell describe are clear, and their description of how it interfered with women attending and graduating from higher education institutions still exist today. The Sadkers confirmed that the role that women in

our society have pervades and stains the educational landscape. As noted in the discussion of retention theory, even Spady (1970) explained part of the difference in dropout behavior along cultural gender lines, " it is fairly clear, for example, despite the recent upsurge of feminist rhetoric that men face the necessity of establishing a position in the occupational structure on which their future income and status depend. For women, on the other hand, the decision to pursue a career is less often dictated by social or economic necessity" (Spady, 1970). This type of thinking in the research of retention occurred only thirty years ago.

Less than 100 years ago women were struggling to achieve a seat in the classrooms of higher education (Campbell, 1920). Currently women are the majority and their presence is growing stronger. While some argue with conclusions derived from the figures, few can argue with the tremendous progress that has been made within the last generation of American women. As we begin a new century, the face of the average college student is now a woman.

High School Background

In high school women on average perform higher than men in reading, writing, and take more credits in academic subjects (NCES, 1995), and have not only a higher grade point average overall, but also in english, math, social studies, natural sciences (ACT, 1999). Women are generally better prepared for college than men (ACT, 1999; NCES, 1992).

Being better prepared is extremely important because studies on college retention demonstrate that a the student's average grade in high school is the strongest predictor of

college grades (Astin, Tsui, & Avalos, 1996). High school grade point average is a significant predictor of retention, and the higher the grade point average the more likely it is that the student will be retained to graduation (Astin, Korn, & Green, 1987; Cambiano, Denny & Vore, 1999). Students with low secondary school grade point averages are considered " at-risk" and have the greatest risk of attrition (Ronco, 1996). Since women typically have a higher high school grade point average than men they are then more likely to persist. In terms of any type of standardized national exam, on the SAT exam women have consistently received scores that are lower on both the verbal and math section of the exam but have narrowed the gap in scores considerably (NCES, 1995: NCES, 1999).

A higher proportion of women (90%) graduate from high school than men (86%) by age 29 (Mortanson, 1999), and 69 percent of women compared to 64 percent of the men. attempt post secondary education (Mortanson, 1999; NCES, 1995). Educators have a variety of reasons for the gap, Daniel Kindlon (as cited in *Women in Higher Education*, 2000) asserts that boys lag behind girls as early as grade school due to impulse control and the differences in maturity. Lester Thurow (as cited in *Women in Higher Education*, 2000) believes that men will take jobs that do not require a degree because they are more economically driven and opportunistic. In the same article, Zell Miller (as cited in *Women in Higher Education*, 2000) agrees, "who in his right mind would want to go into debt for the privilege of reading Beowulf when he can make \$30,000, a year in air-conditioner maintenance right out of high school" (as cited in *Women in Higher Education*, 2000). It appears that a booming economy is the reason for the low male graduation rate and attendance rates.

Comparison of Retention Rates

Starting in the late 1980's more women were likely to go directly to college after high school than men (NCES, 1995 - Table 172; NCES, 1992), and since 1979 the number of women enrolled in higher education has exceeded the number of men (NCES, 1995). Not only are women the most common face on the average national campus, but since 1996 more women were enrolled across both private and public, four year and two year, full time and part time in all types of colleges and universities except private two year schools part time (Lewin 1998; NCES, 1999). It is not that women are attending only one type of institution; Women are the majority across a vast array of different types of campuses. It is only on the professional school campus that women have not made as much progress as elsewhere. While women are gaining ground, as of 1996 they still accounted for less than 45 percent of the women in first-professional schools (NCES, 1996).

Beginning in 1986 women have been earning more than 50 percent of all associate, bachelor's, and master's degrees (1986 National Center for Education Statistics, U.S. Department of Education, Digest of Education Statistics, 1997, Table 244, p. 261). Men, however, earn more professional degrees than women (1986 National Center for Education Statistics, U.S. Department of Education, Digest of Education Statistics, 1997, Table 244, p. 261). Studies have confirmed that women have a higher four year graduation rate than men (Astin, 1971,1975,1982,1993; NCES, 1995) and also a higher graduation rate at six and nine years (Astin, Tsui, & Avalos, 1996). After four years women are more likely to either have their degree, or continue to be enrolled and working toward the degree than men (NCES, 1992). In fact, the four year graduation rate of

women (43.2%) is higher than the nine year graduation rate of men (43.0%) (Astin, Tsui, & Avalos, 1996). Not only was the graduation difference noted, but also the differences for why students dropped out.

This difference in graduation rates is one that has expanded over the last thirty years. Bayer's 1968 national sample showed that women graduated at a seven percent higher rate after five years (Bayer, 1968). While Trent and Medsker (1968) found similar graduation results, they also found that there was a significant difference in the number of men still pursuing a degree after four years than women. In 1967 the seven year graduation rate comparison of men and women were very close, with men at 50 percent and women at 47 percent (Sewell & Shah, 1967).

One difference that Astin (1975) noted that is not true today is intent. For freshmen on college campuses in 1975 more men than women initially planned on receiving at least a four-year degree. Today women are more often listing that they plan on graduating with at least a four-year degree (Astin, 1998; NCES, 2000). This trend for intent is also the same for graduate degrees. For freshmen in 1966, 40.3 percent of women aspired to graduate degrees compared to 58.4 percent of men. Although as a percentage there are now more men and women who aspire to a graduate degree, women have surpassed men in this category. For freshman in 1996 it is 67.7 percent of women who aspire to a graduate degree compared to 65.3 percent of the men (Astin, 1998).

In his seminal piece on retention in 1975 Preventing Students From Dropping Out Astin noted the difference in drop out reasons and rates. Astin noted that women not only persist at a five percent higher rate and are more likely to complete the college degree, but also that men cited poor grades and boredom more often as reasons for dropping out of

college (Astin, 1975). Astin noted back in 1975, as is true today, women received better grades in high school and in college (Astin, 1975). Instead of boredom and grades, "marriage family responsibilities, or pregnancy" were the most common reasons women gave for dropping out of school (Astin, 1975, p. 15). Being married while in college increased a woman's chance of dropping out of college by 11 percent, but for men decreased the chance of dropping out by eight percent. Another difference is that women were likely to let financial considerations influence their decision to persist (Astin, 1975).

Not only are attendance rates for the genders different, but also the reasons that they attend college. Men are more likely to go to college to make money and women are more likely to attend for general education and the appreciation of ideas (Astin, 1990). Spady (1970) alluded to this same type of reasoning in 1970 and said that men might attend college out of a sense of necessity to provide for their future family. Spady suggested that women in the late sixties and early seventies were not subjected to the same social and economic pressures to finish college and could pursue the degree for the sake of knowledge itself (Spady, 1970).

First Generation

Unfortunately, "while a daunting literature exists on the relation between parent's education and college choice, persistence, and performance, surprisingly little is known specifically about first-generation students" (Terenzini et al., 1995, p. 5). This is surprising since 43 percent of the students who begin higher education are first generation (NCES, second follow-up BPS: 90/94). The literature that is available on first generation college student pre-college background characteristics portrays a population that is at a

disadvantage for success in college. As early as 1968 Trent and Medsker (1968) investigated the influence of first generation (paternal) on college attendance rates and found that not only did it effect whether a student would enroll in higher education, but also whether the student would walk away with a diploma.

In pre-college math, reading, and critical thinking skills there is a significant difference between first generation students and non-first generation students (Terenzini et al., 1995). There is a significant difference in first generation students level of family commitment, personal commitment, and overall knowledge of college (NCES, 1992; York-Anderson & Bowman, 1991). First generation students face the obstacle of a perceived difference of parental support (Billson & Terry, 1982; York-Anderson & Bowman, 1991), and there is a positive significant relationship between the educational level of a parent, and the expected educational attainment they have for their child (Billson & Terry, 1982; Stage & Hossler, 1989; York-Anderson & Bowman, 1991).

Part of the difference in first generation persistence and retention could be explained by the income level of the family. Families that had one or more parent with a college degree had a higher income, and higher educational expectations for there children (Gruca, 1989; NCES, 1992; Spady, 1971). The lower expectations might play a role in the fact that first generation students are less likely to apply to or be enrolled at a four year institution two years after high school graduation (NCES, 1992). Students with a higher socio-economic background tend to persist and graduate at a higher rate than students with lower socio-economic backgrounds (Astin, 1964; Bowman & Yorkman, 1991; Eckland, 1964).

A review of literature for first generation students enrolled in post secondary education revealed (Pantages & Creedon, 1978; Spady, 1970; Tinto, 1975) that parents educational level is positively related to student retention, persistence, and graduation (NCES, 1992; Terenzini et al., 1995). First generation students were found to drop out at a higher rate (Riehl, 1994) and to have lower levels of social and academic integration (Billson & Terry, 1982). First generation students are less likely to have received a degree, two year, four year, or certificate after four years (44.2%) compared to students whose parents had some college (50.6%), or students whose parents graduated from college (58.8%) (U.S. Department of Education, National Center for Educational Statistics, 1989-90 Beginning Post secondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.). First generation students are less likely to still be enrolled after four years (10.7%), compared to students whose parents had some college (14.5%), or whose parents graduated from college (16.9%) (U.S. Department of Education, National Center for Educational Statistics, 1989-90 Beginning Post secondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System). First Generation students are less likely to have earned a four year degree after four years (16.0%) compared to students whose parents had some college (27.7%), or whose parents graduated from college (41.0%) (U.S. Department of Education, National Center for Educational Statistics, 1989-90 Beginning Post secondary Students Longitudinal Study, Second Follow-up (BPS:90/94), Data Analysis System.). As a note in this study, there were more female students who were first generation (57.3%) and who had parents with some college (54.4%), and more males who had parents with college degrees (51.9%).

Women perceive a lack of parental support combined with a lower self-prediction of ability (Clark & Zehr, 1993; Richman, Clark, & Bowman, 1985) and other studies have shown that parental support is higher for sons than daughters (Hoffman, 1977; Peterson, 1982). This is important since not only do first generation women receive a lack of support due to gender, but also face an additional lack of perceived parental support due to being first generation (Anderson, Bowman, & Tinto, 1972; Hoffman, 1977). This perceived lack of support is significant since intent to get a degree and family and friends have a positive influence on persistence to graduation (Staats & Partlo, 1990). The importance of self-perceptions of academic ability are related to persistence in degree attainment (House, 1992) and for overall success (Nisbet, Ruble, & Schurr, 1982).

Several studies compare first generation students to non-first generation students regarding their college experiences and the effect of those experiences on college persistence (Attinasi, 1989; Bean & Metzner, 1985; Billson & Terry, 1982; Richardson & Skinner, 1992; Skinner & Richardson, 1988). The first year experience studies indicate that first generation students have lower levels of social and academic integration and are at a higher risk of dropping out. During the freshman year, first generation students were more likely to complete fewer hours, work more hours off campus, receive less support and encouragement from friends, and to have experienced discrimination (Terenzini et al., 1995). The Terenzini et al. study also noted more first generation females than males.

Chapter 3

RESEARCH METHODS

Beginning with the first theories of retention, the goal has always been to explain why students who are in good academic standing choose not to continue enrollment at an institution. The general assumption of these theories is that the admissions office has admitted students who are capable of actually being able to do the work. When differences between group retention and the institutional norm exist, one of the first areas examined is for differences in academic background. If differences in academic background do not exist then it is logical to assume that other differences within the individuals or between them exist. Were the students who left less motivated? What other obstacles, such as finances, might have presented themselves?

The second area examined in student retention would be experiences that the student has after arriving at school. This assumes that retention is a longitudinal process, and that the interactions the student has with the educational environment play a role in retention. Tinto (1975) identified the two areas of academic and social interaction that play a role in student retention. The search is always to find those areas of differences that explain the withdrawal pattern. The purpose of this study was to examine and compare first generation student gender differences and also to determine if differences existed for

first generation men who persisted with those who do not, and if differences existed between first generation women who persisted and those who do not.

The design involved the following basic procedures:

1. Locating a school that had a significant population of first generation students of both genders.
2. Identify those students who were first generation and determine their prior preparation for college through the use of a questionnaire and database.
3. Based on gender, collect perceptions of how the students regarded their own preparation for college, and how they believed that they will do over the course of the semester in terms of grade point average.
4. Collected by gender first generation students actual performance as measured through their cumulative grade point average at the end of the second and third semester.
5. Collected by gender first generation students who persisted and who were retained from one fall term to the next fall term.

Null Hypotheses

Ho1: There is no significant difference in retention for first generation males compared to first generation females between the first and second year of college.

Ho2: There is no significant differences in common characteristics, as measured by the SIQ, for first generation males and first generation females.

Ho3: There are no significant differences, as measured by the SIQ, between first generation men who persist and first generation men who do not persist.

Ho4: There are no significant differences, as measured by the SIQ, between first generation women who persist and first generation women who do not persist.

Date Sources

Population

A mid-sized carnegie II institution was identified as having the number of first generation students required. The university has approximately 11,500 students. It is a public university that is comprised of a college of Arts and Sciences and five professional schools. The University has a graduate enrollment of approximately 1,500 and includes students at both the Master's and Doctorate level. Over the last ten years this university has moved from an open admissions policy to a policy that is considered moderately selective.

Data Collection Process

During the New Student Advisement and Registration Program (NSARP) students completed a new Student Information Questionnaire (SIQ). The SIQ survey is cross sectional and was delivered by hand to all of the participants by the university's research and testing office during the morning program of NSARP. Students were given forty five minutes to complete and return the voluntary questionnaire during the NSARP program and were told that the survey was going to be used for research. Students returned the survey as they left the room.

The SIQ consists of 115 questions that were broken down into the areas of general information, family background, secondary school background, and college learning expectations. The majority of questions were multiple choice and the questionnaire took approximately 30 minutes to complete. The SIQ has been utilized for over a decade and while initially developed as a general information gathering device, it contains most of the pre-enrollment information required for this study. This study sample consisted of all students who indicated that they were first generation. The student indicated the highest educational level achieved by his/her mother (Question 11), and the highest education level of his/her father (Question 12). The information on incoming students that were not included on the SIQ, such as gender, high school grade point average, high school class rank, and standardized test scores, was obtained utilizing institutional resources and institutional databases. The office of institutional research provided the information from the University database. A complete copy of the SIQ can be found in Appendix F.

High School grade point averages, class ranks, and standardized test scores were compared based on information recorded by the admissions office using official high school transcripts and was provided by the university research and testing office. First year grade point averages were obtained from the university's research and testing office via the registrar's office. The names and ID number of students who returned for the second fall semester were also supplied by the research and testing office via the registrar's office. There was no requirement in terms of the number of hours enrolled for a student to be included in this study. This meant that students who were not necessarily full time for one or both semesters were included in this study. The information from the

SIQ and the information obtained from the registrar's was matched on a one to one basis using the student ID number.

Instrumentation

The SIQ (Appendix F) was used to collect the perceptions of new students concerning their background, reasons for enrolling, and attitudes and beliefs. The general categories of the SIQ are: a) general information, b) family background, c) secondary school background, d) College learning expectations, e) choice of college.

The categories ranged from 10 questions under the general information section to 57 questions under the choice of college section. The original implementation of the SIQ was as a tool in a retention study.

Statistical Analysis

For the first hypothesis, a Chi-Squared test was used to determine if there were any significant difference in retention for first generation males compared to first generation females. The remaining hypotheses were tested utilizing discriminant analysis. As noted by Terenzini (1982), discriminant analysis provides more information than a multivariate analysis of variance (MANOVA). Huberty (1975, p. 545) summarizes discriminant functions into four areas:

1. Separation - determining within group differences with regards to the group variable centroid. The centroid refers to the group means of the variable on a multi-plane level.

2. Discrimination - determining the variable contribution to the group separation.
3. Estimation - degree of or relationship between the variable and group membership and estimates of the distances between centroids for the group and subgroups.
4. Classification - determining the 'rules' or variables to assign individuals to groups or populations.

In trying to assess the differences of two groups that are grouped by dichotomous categorical dependent variables discriminant analysis is called for (SPSS, 1998). Therefore, a discriminant analysis was used to determine if there were significant differences in common characteristics between first generation males and first generation females. Discriminant analysis was used to determine if there were significant differences between first generation men who persisted and those who did not, and used to determine if there are any significant differences between first generation women who persisted and those who did not. Discriminant analysis provided a comparison of the variables along gender, both within the genders for the common characteristics, and between the genders for the persisters versus the non-persisters. Discriminant analysis involves deriving the linear combination of two (or more) independent variables that will discriminate best between the defined groups (Hair et al., 1987). This is achieved by the statistical decision rule of maximizing the between group variance relative to the within-group variance. This relationship is expressed as the ratio of between-group to within-group variance. The

linear combinations for a discriminant analysis are derived from the equation summarized by (Hair et al., 1987):

$$Z = W_1X_1 + W_2Y_2 + W_3Y_3 + \dots + W_{11}X_{11}$$

where

Z = the discriminant score

W = the discriminant weights

X = the independent variables

Discriminant analysis also provided results regarding classification, which indicated how well group membership can be predicted by each of the variables. Discriminant analysis provided the opportunity to evaluate how well each variable distinguished between the groups, and indicate which were the most powerful discriminating variables.

The variables used to distinguish among or between the two groups are referred to as "discriminating variables". In this study the questions on both the SIQ, and the data provided by the university's research and testing office was used as the discriminating variables. Discriminant analysis requires that the variables used to distinguish the groups be at least on an interval or ratio scale, that no variables are linear combinations, and that no variables be perfectly correlated (Klecka, 1980). It is recommended that there be at least 100 in the total sample before dividing the sample into two or more groups for analysis (Hair et al., 1987, p. 83). Due to the large number of predictors, a step wise

approach was utilized. Due to the length of the questionnaire and the size of the sample, when an answer was left blank by a student, the overall group mean was inserted into the answer.

On the SIQ, questions that were eliminated due to not being on a Likert scale, or not being appropriate were questions 105 through 111, 132, 131, 21 and 27. All of the questions were modified from a scale using letters to a numerical scale.

Chapter 4

RESULTS

The purpose of this study was to determine if first generation men and women persist at different rates, and which variables, as measured by the new student information questionnaire (SIQ), predict first generation men retained or first generation men not retained; first generation women retained or first generation women not retained; and the difference between first generation men or first generation women. Discriminant analysis uses variables to predict or classify group membership. The predictors when used together to separate groups are referred to as discriminant functions (Tabachnick & Fidell, 1996). A stepwise discriminant analysis was used to determine if there were any variables that could distinguish between, or categorize, the groups being studied.

Of the 4048 students who completed the SIQ for the fall semesters of 1997 and 1998, 1026 students were identified as first generation. The gender breakdown for all of the students who completed the SIQ was 1889 (46.6%) male and 2159 (53.3%) female, of the first generation students, 414 (40.4%) were male and 612 (59.6%) were female (Table 1).

Table 1

Gender Breakdown of First Generation Students Responses

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	414	40.4	40.4	40.4
Female	612	59.6	59.6	100.0
Total	1026	100.0	100.0	

In regard to grade point average we find that first generation women have a higher grade point average than men (Table 2). This is consistent with the research comparing the total college freshmen population of women and men (NCES, 1992). Grade point average is one of the strongest predictors of college grades (Astin, Tsui & Avalos, 1992).

Table 2

A Comparison of High School Grade Point Averages Between First Generation Men and First Generation Women

	n	<u>M</u>	<u>SD</u>	<u>Percentile</u>		
				25%	50%	75%
Men	410	2.69	.63	2.34	2.70	3.10
Women	600	2.88	.65	2.53	2.93	3.30
Total	1010	2.80	.65	2.44	2.82	3.22

Since the high school class rank is computed using grade point averages, first generation women on average have a higher class rank than first generation men (Table 3). This difference in class rank is consistent with the overall class rank differences found in the population (NCES, 1999).

Table 3

A Comparison of High School Class Rank Between First Generation Men and First Generation Women

	n	<u>M</u>	<u>SD</u>	<u>Percentile</u>		
				25%	50%	75%
Men	413	54.53	21.56	38.50	55.00	69.00
Women	611	62.65	22.47	47.00	65.00	81.00
Total	1010	2.80	22.45	43.00	62.00	77.00

While first generation women had a higher high school grade point average and a higher high school class rank, the average first generation men had a higher SAT math and verbal score (Tables 4 and 5). This apparent contradiction is reflected and consistent with the literature and research comparing college men and women (NCES, 1995 & 1999).

Table 4

A Comparison of SAT Math Scores Between First Generation Men and First Generation Women

	n	<u>M</u>	<u>SD</u>	<u>Percentile</u>		
				25%	50%	75%
Men	366	404.45	189.68	380.00	460.00	520.00
Women	540	378.63	188.02	350.00	430.00	497.50
Total	906	389.06	189.01	360.00	440.00	510.00

Table 5

A Comparison of SAT Verbal Scores Between First Generation Men and First Generation Women

	n	<u>M</u>	<u>SD</u>	<u>Percentile</u>		
				25%	50%	75%
Men	366	391.64	183.01	370.00	440.00	510.00
Women	540	381.31	186.05	350.00	440.00	500.00
Total	906	385.49	184.79	360.00	440.00	510.00

In regard to the academic performance as measured by grade point average during the first, second, and third semester of college, first generation women performed better

than first generation men (Table 6 through 8). By separating the grade point averages by quartiles we find that 25% of the first generation men are receiving less than a “C” average after one semester. For the first generation women we find that 25% are receiving at least a “C” average or below after one semester.

Table 6

A Comparison of First Semester Grade Point Average Between First Generation Men and First Generation Women

	n	<u>M</u>	<u>SD</u>	<u>Percentile</u>		
				25%	50%	75%
Men	403	2.42	1.00	1.89	2.63	3.16
Women	581	2.68	1.01	2.16	2.87	3.45
Total	984	2.57	1.01	2.03	2.76	3.34

By continuing to breakdown the average grade point averages that first generation men and first generation women are receiving as they progress through their freshman year, the same trend is found in the second semester (Table 7). First generation men continue to have 25% who are not receiving at least a “C” average. In fact in comparing the grade point average of the bottom 25% from the first semester to the second semester, there is a decrease in grades. For first generation women the trend in grade point average between the first semester and second semester for the bottom quartile has also been in a downward direction.

Table 7

A Comparison of Second Semester Grade Point Average Between First Generation Men and First Generation Women

	n	<u>M</u>	<u>SD</u>	Percentile		
				25%	50%	75%
Men	354	2.31	1.11	1.70	2.61	3.12
Women	514	2.59	1.04	2.03	2.79	3.40
Total	868	2.47	1.08	1.91	2.68	3.29

For the comparison of the third semester grade point average, the trend continues to be that a quarter of the first generation men are receiving less than a “C” average grade. These first generation male students have been enrolled for three semesters and continue to enroll and earn less than “C” grades. For the first generation women it is clear that the bottom quarter is now earning better than “C” grades in their coursework.

Table 8

A Comparison of Third Semester Grade Point Average Between First Generation Men and First Generation Women

	n	<u>M</u>	<u>SD</u>	Percentile		
				25%	50%	75%
Men	272	2.48	1.00	1.91	2.66	3.25
Women	416	2.78	.95	2.34	2.96	3.5
Total	688	2.67	.98	2.12	2.81	3.40

For first generation men and women the first two semesters outline a serious academic problem for a quarter of the population. By the third semester the first generation women have had an increasing grade point average, but the first generation men are still struggling.

With regard to retention, of the 1026 first generation students 691 (67%) completed three continuous semesters, and 335 (33%) students did not. Of the 691 students who completed three continuous semesters, 275 (39.8%) were male, and 416 (60.2%) were female. If we break down the retention by gender, out of the 414 first generation males there were 275 (66.4%) who completed three continuous semesters, and 139 (33.6%) who did not. It is interesting to note that 25 percent of first generation men are not receiving average grades of a “C” after three semesters, when combined with the information that roughly a third of the first generation men have already dropped out. In the first generation female population of 612, there were 416 (68%) who completed three continuous semesters, and 196 (32%) who did not.

Null Hypothesis One

It was hypothesized that there was no significant difference in the retention rate of first generation males compared to first generation females. A chi-squared analysis was performed to determine if there was a significant difference.

A chi-squared generates expected frequencies against those that are observed frequencies. If the observed are similar to the expected then the value of X^2 is small and the null hypothesis is retained. If the observed frequency is not similar to the expected frequency then the value of X^2 is large, and the null hypothesis is rejected. The

relationship between the observed and expected frequencies is determined by the equation for X^2 (Tabachnick & Fidell, 1996):

$$\sum_{ij} (f_o - F_e)^2 / F_e$$

The expected cell frequencies are generated from the column and row sum (Tabachnick & Fidell, 1996):

$$\text{Where Cell } F_e = (\text{row sum}) (\text{column sum}) / N$$

The hypothesis is tested such that the variable in the row, in this case retention, is independent of the variable in the column, gender. If the difference between the observed frequency and expected frequency is small, resulting in a small X^2 , then the two variables are determined to be independent of one another. A large difference in the observed and expected frequencies would produce a large X^2 , and would indicate that the two variables are related.

Table 9

Prevalence (%) of Retention Among Male and Female First Generation Students

Retention	Male (n = 414)	Female (n= 612)	X^2 (1)
Retained	275	416	.604

*** p < .05

The results of the Chi-squared analysis found in table 9 indicate that there is no statistically significant relationship between retention and gender. Therefore, we can not

determine with confidence that there is a difference in retention rates between first generation males and first generation females.

Null Hypothesis Two

It was hypothesized that there are no significant differences, as measured by the SIQ, between first generation male and first generation female students. A stepwise discriminant analysis was performed to determine which variables could discriminate between the two groups.

The first step in the discriminant analysis is to calculate the means and standard deviations for each group. A complete comparison of the means and standard deviations of all the variables used in the SIQ for both genders can be found in Appendix B. Table 10 provides a comparison of the means and standard deviations that were significantly different.

Table 10

Significant Means and Standard Deviations of Predictor Variables as a Function of First Generation Males Compared to First Generation Females

Predictor variable	Male		Female		Total	
	M	SD	M	SD	M	SD
Traveled more the 100 miles from home	3.48	1.12	3.34	1.09	3.40	1.10
When did you decide to attend college?	2.75	1.91	2.31	1.80	2.48	1.86
Best estimate of family income last year	6.26	3.26	5.85	3.24	6.01	3.25
How many children do your parents have?	2.82	1.14	3.00	1.31	2.93	1.24
How much time during your senior year did you spend Doing homework?	2.17	0.86	2.52	1.02	2.38	0.97
Socializing with friends?	4.27	1.64	3.81	1.50	3.99	1.57
Participating in school sponsored sports?	3.18	1.92	2.54	1.71	2.80	1.82
Doing volunteer work?	1.28	0.67	1.45	0.73	1.39	0.71
Exercising on your own time?	2.27	1.25	1.87	0.86	2.03	1.06

Partying?	2.21	1.43	1.91	1.10	2.03	1.25
What were your usual grades in high school?	3.58	1.38	3.08	1.41	3.28	1.42
How much individual attention did you receive from you high school teachers after class?	2.14	0.66	1.99	0.66	2.05	0.67
Solve problems creatively	2.02	0.94	2.26	0.91	2.17	0.93
Express your thoughts in writing	2.34	1.11	1.94	1.00	2.10	1.07
Solve an algebra problem	2.23	1.07	2.38	1.08	2.32	1.08
Discuss intelligently current world events	2.40	1.00	2.61	0.94	2.53	0.97
Discuss intelligently national politics	2.68	1.03	2.82	1.03	2.76	1.03
Find information over the World Wide Web	2.09	1.01	2.34	1.04	2.24	1.04
Use the library to gain information	2.01	0.98	1.86	0.88	1.92	0.93
Work with others on school projects	1.82	0.86	1.62	0.78	1.70	0.82
Learning about a variety of topics	2.19	0.91	2.03	0.82	2.09	0.86
Making more money	1.47	0.73	1.60	0.80	1.55	0.77
Becoming an educated person	1.48	0.68	1.28	0.50	1.36	0.59
Becoming more cultured	2.26	1.06	1.89	0.89	2.04	0.98
Improving study skills	1.98	0.96	1.66	0.70	1.79	0.83
Preparing for graduate/professional school	2.42	1.22	2.02	1.06	2.18	1.15
Developing social networks	2.37	1.07	2.14	0.93	2.23	0.99
Finding a boyfriend/girlfriend/spouse	3.19	1.22	3.62	1.10	3.45	1.17
Keeping a boyfriend/girlfriend	3.08	1.28	3.56	1.21	3.37	1.26
Developing intellectually	1.59	0.68	1.36	0.53	1.45	0.60
Learning to live and interact with people	1.78	0.85	1.48	0.73	1.60	0.79
Best describes your attitude toward studying for your high school classes	4.30	1.30	3.90	1.18	4.06	1.25
Think critically	1.65	0.66	1.53	0.67	1.58	0.67
Respect the views of others	1.97	0.75	1.76	0.72	1.85	0.74
Develop close relationships with others	2.21	0.82	2.06	0.81	2.12	0.82
Be sensitive to the feelings of others	2.36	0.90	2.16	0.89	2.24	0.90
Be independent	1.57	0.72	1.30	0.56	1.41	0.64
Develop greater ability to choose moral and ethical behavior	2.01	0.84	1.75	0.77	1.85	0.81
Establish your identity	1.89	0.81	1.61	0.74	1.72	0.78
Develop social skills	1.85	0.73	1.67	0.69	1.74	0.71
Develop a meaningful philosophy of life	2.22	0.90	1.99	0.84	2.08	0.87
Develop leadership skills	1.80	0.73	1.65	0.68	1.71	0.70
Understand and appreciate people who come from cultures other than your own	2.10	0.86	1.78	0.74	1.91	0.80
Communicate with others more effectively	1.76	0.69	1.58	0.61	1.66	0.65
At campus events such as sports or sponsored speakers/concerts	2.65	1.41	2.41	1.06	2.51	1.22
Participating in fraternity/sorority events	1.78	1.19	1.64	1.04	1.70	1.10
Socializing with friends made before coming to college	3.19	1.62	2.93	1.34	3.04	1.46
Exercising	2.86	1.27	2.49	1.10	2.64	1.19
Doing volunteer community service	1.45	0.63	1.62	0.67	1.55	0.66
Doing church work	1.42	0.70	1.54	0.75	1.49	0.73
Which area will be most difficult for you?	3.62	1.70	4.06	1.85	3.88	1.80
Your third most difficult academic area	4.13	2.25	4.58	2.39	4.40	2.34

Parents	2.45	0.94	2.22	0.96	2.31	0.96
Get tutoring help in specific courses	1.89	0.74	1.79	0.64	1.83	0.68
Be satisfied with your college	1.50	0.54	1.41	0.54	1.45	0.54
Be gainfully employed during the school year	1.92	0.75	1.75	0.68	1.82	0.71

Note. All of the above differ significantly at $p < .05$

An analysis using univariate F-ratios for each of the variables on the SIQ for the entire group, compared the group means to the gender means to determine which of the gender's means and standard deviations were significantly different. First generation males and females differ significantly with regard to the mean and standard deviation on 56 of the 113 SIQ variables (Table 10). Variables that have significant means might discriminate between genders.

The stepwise approach begins by choosing the single best discriminating variable, then pairing the first variable with all of the remaining variables until the second variable is chosen. The second variable is chosen on the basis that it provides the largest increases in the ability to discriminate in combination with the first variable. Each additional variable is chosen using this same type of attempt to maximize the discriminating power, or the assignment of cases to the correct group. A variable must have an F (F to enter) value of at least 3.84 to enter into the stepwise. The variables that are not selected in the discriminating function in the stepwise analysis did not increase the ability to discriminate the groups. As additional variables are added, new combinations of variables may create a situation whereby previous variables are removed, due to no longer aiding in discriminating group differences (Hair et al., 1987). The variable is removed when the F (F to remove) value falls below 2.71.

The results of the stepwise discriminant analysis yielded 33 variables that discriminated between the two groups (Table 11). A variable discriminates well when the variance between the groups is large relative to the variance within the groups (Hair et al., 1987). Of the 56 SIQ variables that were significantly different for first generation males and females, only 33 of the variables had large enough F values to be used to discriminate between the two groups.

To obtain the discriminating power of each variable in a discriminate analysis a Wilks' lambda was calculated. The Wilks' lambda indicates how much of the variance is unexplained and its largest value is 1.0. The larger the Wilks' lambda, the larger the amount of variance left unexplained, and the less discriminating power. For the stepwise analysis of first generation males and first generation females the Wilks' lambda value of .63 indicates that 63 percent of the variance in the discriminant function between the two groups is unexplained.

Table 11

Predictor Variables For First Generation Men and First Generation Women in a Stepwise Discriminant Function Analysis

Step	Predictor Variable	Variables in Discriminant Function	Wilks's λ	Equivalent \underline{F} (1, 120)
1	Be independent	1	0.959	44.23
2	Exercising on your own time?	2	0.923	42.41
3	How much time during your senior year did you spend doing homework?	3	0.890	42.03
4	Finding a boyfriend/girlfriend/spouse	4	0.862	40.85
5	Express your thoughts in writing	5	0.837	39.63

6	Solve problems creatively	6	0.809	39.98
7	Learning to live and interact with people	7	0.792	38.09
8	What were your usual grades in high school?	8	0.776	36.77
9	Find information over the World Wide Web	9	0.761	35.53
10	Participating in school sponsored sports?	10	0.748	34.22
11	Improving study skills	11	0.736	33.00
12	Getting a more enjoyable job	12	0.728	31.49
13	Doing volunteer work?	13	0.721	30.12
14	Which area will be most difficult for you?	14	0.715	28.81
15	Your third most difficult academic area	15	0.708	27.83
16	Develop an expertise in a given subject area	16	0.701	26.84
17	Understand and appreciate people who come from cultures other than 17 your own		0.694	26.10
18	Get along with others	18	0.687	25.48
19	Work with others on school projects	19	0.681	24.85
20	Traveled more than 1,000 miles from home	20	0.675	24.21
21	Traveled more the 100 miles from home	21	0.667	23.84
22	Keeping a boyfriend/girlfriend	22	0.662	23.23
23	Establish your identity	23	0.658	22.60
24	Percentage of decision / Parents	24	0.655	21.96
25	# of friends from high school attending ** this year	25	0.651	21.44
26	Discuss intelligently current world events	26	0.648	20.87
27	Doing church work	27	0.645	20.31
28	Exercising	28	0.642	19.81
29	Preparing for graduate/professional school	29	0.640	19.34
30	What is the highest degree that you intend to attain?	30	0.635	19.03
31	When did you decide to attend college?	31	0.633	18.61
32	Developing intellectually	32	0.630	18.21
33	Learning to live and interact with people	Removed	0.631	18.73

The eigenvalue is a measure of how well the discriminant function differentiates the two groups. The eigenvalue provides a ratio of between-groups sums of squares to the within group sums of squares of the functions and is the total variance between the groups existing in the discriminating variables. The lower the eigenvalue, the less the discrimination. The eigenvalue for the first generation males not retained and retained is .132.

The predictive ability of the discriminant function is referred to as classification. The classification demonstrates the discriminant functions ability to correctly classify group membership. The formula used for the classification is (Hair et al., 1996):

$$T = \frac{p-5}{\sqrt{.5(1-.5)}} \frac{1}{N}$$

Table 12 outlines the ability of the SIQ variables to correctly discriminate between first generation females and males. These results indicate that approximately 78 percent of the students would have been correctly classified. First generation females are more likely to be classified correctly than first generation males. Likewise, first generation males are more likely to be incorrectly classified as females, than first generation females are incorrectly classified as male. With two groups, by chance we would have a 60 percent correct classification rate.

Table 12

Classification Analysis for First Generation Students Along Gender Lines

Actual group membership		n	Predicted group membership			
			Male		Female	
Count			N	%	N	%
Male		414	314	75.8	100	24.2
Female		612	128	20.9	484	79.1

Note. Overall percentage of correctly classified cases = 77.8%.

Null Hypothesis Three

The third null hypothesis stated that there was no significant difference as measured by the SIQ between the first generation males that were retained and first generation males that were not retained. A complete comparison of the means and standard deviations of all the variables used in the SIQ for both retained and not retained males can be found in Appendix C. Table 14 provides a comparison of the means and standard deviations that were significantly different.

Table 13

Significant Means and Standard Deviations of Predictor Variables as a Function of Retention for Males

Predictor variable	Not Retained		Retained		Total	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
# of friends from high school attending ** this year	2.74	0.80	2.95	0.82	2.91	0.82
Socializing with friends?	4.68	1.85	4.09	1.56	4.21	1.64
What were your usual grades in high school?	3.78	1.46	3.42	1.35	3.50	1.38
Ability to lead a group discussion	2.06	0.85	2.33	0.96	2.27	0.95
Solve problems creatively	1.73	0.89	2.06	0.96	1.99	0.95
Express your thoughts in oral communication	1.75	0.87	2.04	0.97	1.98	0.96
Spend leisure time wisely	1.72	0.86	2.15	0.98	2.06	0.97
Solve an algebra problem	1.88	0.90	2.18	1.07	2.12	1.05
Discuss intelligently national politics	2.36	0.83	2.65	1.06	2.59	1.02
Use computers in completing school work	1.74	0.87	2.05	0.99	1.99	0.98
find information over the World Wide Web	1.78	0.84	2.16	1.02	2.08	1.00
use the library to gain information	1.58	0.87	2.06	0.99	1.96	0.98
Becoming more cultured	1.97	0.95	2.25	1.02	2.19	1.01
Making my parents happy	2.23	0.95	2.69	1.25	2.59	1.21
Get along with others	1.85	0.71	2.11	0.84	2.06	0.82
Be sensitive to the feelings of others	2.14	0.87	2.36	0.89	2.32	0.89
Develop an expertise in a given subject area	1.52	0.62	1.37	0.58	1.40	0.59
Friends	2.22	0.79	2.47	0.86	2.42	0.85

Note. All of the above differ significantly at $p < .05$

Table 14 is a summary of the stepwise discriminant analysis. There were four variables that had large enough F values, to be included in the discriminant function. There were 18 variables from the SIQ that had significantly different means for retained males and not retained males, but only four of the variables entered into the stepwise discriminant analysis. Thus, 14 of the 18 variables while having means that are significantly different for the two groups did not have large enough F values.

Table 14

Predictor Variables in Stepwise Discriminant Function Analysis for Retained Males

Step	Predictor Variable	Variables in Discriminant Function	Wilks's λ	Equivalent \underline{F} (1, 120)
1	What were you usual grades in high school	1	.974	11.014
2	Socializing with friends?	2	.954	9.987
3	Express your thoughts in writing	3	.937	9.195
4	Your second most difficult academic area	4	.925	8.261

For the stepwise analysis of retained first generation males compared to not retained first generation males the Wilks' lambda value of .92 indicates that 92 percent of the variance in the discriminant function between the two groups is unexplained.

The eigenvalue is a measure of how well the discriminant function differentiates the two groups. The eigenvalue provides a ratio of between-groups sums of squares to the within group sums of squares of the functions and is the total variance between the groups existing in the discriminating variables. The lower the eigenvalue, the less the

discrimination. The eigenvalue for the first generation males not retained and retained is .157.

Table 15

Classification Analysis for Retained First Generation Male Students

Actual group membership		n	Predicted group membership			
			Retained		Not Retained	
			N	%	N	%
Count	Retained	276	258	93.5	18	6.5
	Not Retained	138	104	75.4	34	24.6

Note. Overall percentage of correctly classified cases = 70.5%.

Table 15 outlines the SIQ variables ability to correctly discriminate between first generation males who were retained and first generations males who were not retained. These results indicate that roughly or approximately 70 percent of the students would have been correctly classified. First generation retained males are more likely to be classified correctly than those not retained. Likewise, first generation males not retained are more likely to be incorrectly classified as retained than first generation males retained are incorrectly classified as not being retained. With these two groups, by chance we would have a 66% percent correct classification rate.

Null Hypothesis Four

It was hypothesized that there are no significant differences, as measured by the SIQ, between first generation females that were retained and first generation female

students that were not retained. A stepwise discriminant analysis was performed to determine which variables could discriminate between the two groups.

A complete comparison of the means and standard deviations of all the variable used in the SIQ for first generation females retained and not retained can be found in Appendix D.

Table 16

Significant Means and Standard Deviations of Predictor Variables as a Function of Retention for Females

Predictor variable	Not Retained		Retained		Total	
	M	SD	M	SD	M	SD
What were your usual grades in high school?	3.50	1.38	2.89	1.38	3.08	1.41
How adequate do you think your high school education was?	2.50	0.75	2.26	0.71	2.34	0.73
Working in a job for pay?	4.59	1.98	3.98	1.96	4.17	1.98
When did you decide to attend college?	2.67	1.94	2.14	1.71	2.31	1.80
What do you predict your overall gpa to be for the first semester?	1.84	0.71	1.65	0.67	1.71	0.69
Fail one or more classes	3.14	0.67	3.32	0.66	3.26	0.67
Develop leadership skills	1.77	0.75	1.59	0.63	1.65	0.68
Get along with others	2.27	0.87	2.06	0.83	2.13	0.85
Partying?	2.10	1.29	1.82	0.99	1.91	1.10
Handle stress	2.13	0.97	1.92	0.85	1.99	0.89
Participating in school sponsored sports?	2.27	1.60	2.67	1.74	2.54	1.71
In an on campus job?	2.33	1.60	2.35	1.46	2.35	1.50
Respect the views of others	1.88	0.75	1.71	0.69	1.76	0.72
Did a grandparent attend **?	2.00	0.00	1.97	0.18	1.98	0.15
# of friends from high school attending college this year	1.96	1.19	1.72	1.07	1.80	1.11
Establish your identity	1.72	0.86	1.56	0.66	1.61	0.74
Traveled more the 100 miles from home	3.18	1.11	3.41	1.08	3.34	1.09
Be independent	1.38	0.60	1.26	0.54	1.30	0.56
Doing church work	1.44	0.83	1.59	0.70	1.54	0.75
Graduate with honors	2.46	0.76	2.30	0.73	2.35	0.75
Get tutoring help in specific courses	1.70	0.59	1.83	0.66	1.79	0.64
solve an algebra problem	2.53	1.06	2.31	1.09	2.38	1.08
How much individual attention did you receive from you high school teachers after class?	2.08	0.70	1.95	0.64	1.99	0.66
Improving study skills	1.56	0.63	1.70	0.72	1.66	0.70

Be gainfully employed during the school year	1.66	0.64	1.79	0.70	1.75	0.68
Develop close relationships with others	2.16	0.86	2.01	0.78	2.06	0.81
solve problems creatively	2.37	0.87	2.21	0.93	2.26	0.91
Getting a more enjoyable job	1.53	0.83	1.40	0.72	1.44	0.75

Note. All of the above differ significantly at $p < .05$

Table 16 provides a comparison of the means and standard deviations that were significantly different. First generation retained females and not retained females differ significantly with regard to the mean and standard deviation on 29 of the SIQ variables.

Table 17

Predictor Variables in Stepwise Discriminant Function Analysis for Retained Females

Step	Predictor Variable	Variables in Discriminant Function	Wilks's λ	Equivalent $F(1, 120)$
1	What were your usual grades in high school?	1	0.96	26.49
2	Working in a job for pay?	2	0.94	19.07
3	Develop leadership skills	3	0.92	16.92
4	Participating in school sponsored sports?	4	0.91	14.30
5	Improving study skills	5	0.90	12.97
6	Partying?	6	0.89	12.00
7	Traveled more the 100 miles from home	7	0.89	11.04
8	When did you decide to attend college?	8	0.88	10.27
9	At campus events such as sports or sponsored speakers/concerts	9	0.87	9.75
10	How big was your high school graduating class?	10	0.87	9.33
11	Understand and appreciate people who come from Cultures other than your own	11	0.86	8.92
12	Respect the views of others	12	0.85	8.84
13	Getting a more enjoyable job	13	0.84	8.55
14	Doing church work	14	0.84	8.29
15	Be satisfied with your college	15	0.83	8.03
16	In an off campus job?	16	0.83	7.81

The results of the stepwise discriminant analysis yielded 16 variables that discriminated between the two groups (Table 17). Of the 29 SIQ variables that were significantly different for first generation males and females only 16 of the variables had large enough F values to be used to discriminate between the two groups.

For the stepwise analysis of retained first generation females compared to not retained first generation females the Wilks' lambda value of .83 indicates that 83 percent of the variance in the discriminant function between the two groups is unexplained.

Table 18

Classification Analysis for First Generation Retained Female Students

Actual group membership		n	Predicted group membership			
			Retained		Not Retained	
			N	%	N	%
Count	Retained	417	380	91.1	37	8.9
	Not Retained	195	117	60.0	78	40.0

Note. Overall percentage of correctly classified cases = 74.8%.

The eigenvalue for the first generation males not retained and retained is .210. Table 18 outlines the SIQ variables ability to correctly discriminate between first generation females who were retained and first generations females who were not retained. These results indicate that 75 percent of the students would have been correctly classified. First generation retained females are more likely to be classified correctly than those not retained. Likewise, first generation females not retained are more likely to be incorrectly classified as retained, than first generation females retained are incorrectly

classified as not being retained. With two groups, by chance we would have a 68% percent correct classification rate.

Summary of Findings

This section provided a summary of the findings and was divided into two sections. Section one gave an overview of the descriptive data summary for first generation students. The second section provided a testing summary of the four hypothesis.

Summary of Descriptive Data

Surveys were given to all of the incoming freshman during the advisement and registration program. The percentage of first generation women and men was similar to the overall population of women and men. The following is a summary of the descriptive data.

1. First generation women had a higher overall grade point average and class rank.
2. First generation men had a higher SAT verbal score and a higher SAT math score than first generation women.
3. Approximately 25 percent of the first generation students are receiving below "C" averages after one semester of college coursework. By the end of the second semester of college the lowest 25 percent of first generation females

have started to receive above a “C” average in college coursework. In the second and third semester the bottom 25 percent of first generation men are still receiving less than a “C” average.

Summary of Hypothesis Testing

Four hypotheses were testing and the following is a summary of the results.

1. A Chi-Squared analysis determined that there was no significant difference in the retention rates between the two genders of first generation students. First generation males had a 66.4% retention rate and first generation females had a retention rate of 68%.

2. A discriminant analysis determined that there were significant differences in common characteristics as measured by the SIQ of first generation males and first generation females. The results of the present study revealed that there are three main categories that differentiate first generation men and first generation women. The three categories are how first generation females and males spend their time during a typical week of their senior year in high school, how they rate their abilities in several areas, and their reasons for deciding to attend college.

3. A discriminant analysis determined that there was a significant difference in common characteristics as measured by the SIQ for retained and not retained first generation males.

4. A discriminant analysis determined that there was a significant difference in common characteristics as measured by the SIQ for retained and not retained first generation females.

Chapter 5

SUMMARY OF FINDINGS AND DISCUSSION

Introduction

With one out of every three college students dropping out by the beginning of their second year and only half of entering college students eventually earning a degree, retention is an issue on today's college campuses (Gerald, 1992; Pantages & Creedon, 1978; Tinto, 1993). State legislatures are changing funding formulas from simply funding the number of students enrolled, to using retention rates and graduation rates (Eglin, 1999; Niba, 1989). With a limited amount of funds, but knowing that early intervention can prevent attrition, schools need to target and identify the characteristics of specific groups that are at risk (Pascarella & Terenzini, 1980). First generation students are at a higher risk of dropping out during their freshman year (Riehl, 1996).

The purposes of this study were to determine: a) if significant differences exist in the retention rates for first generation men and first generation women, b) if significant differences exist, as measured by the SIQ, between first generation males and first generation females, c) if significant differences exist, as measured by the SIQ, between first generation men who persisted and first generation men who did not persist, and d) if significant difference exist, as measured by the SIQ, between first generation women who persisted and first generation women who did not persist.

There has been little research on first generation students (Pascarella, et al, 1995). Research on gender differences has indicated that women are better prepared for college, persist at a high rate, and attend college for different reasons than men (ACT, 1999; NCES, 1995; Spady, 1971).

The purpose of the study was to determine (1) if there was a difference in retention rates for first generation females and first generation males; (2) determine if there were any differences, as measured by the SIQ, for first generation males and females; (3) determine if there were any differences, as measured by the SIQ, in retained versus not retained first generation males; (3) determine if there were any differences, as measured by the SIQ, in retained versus not retained first generation females.

The participants of the study were 1026 first generation students who enrolled at a mid-west public university and completed the SIQ. The general categories of the SIQ are (a) general information, (b) family background, (c) secondary school background, (d) college learning, and (e) choice of college. The questionnaire contains 115 questions and was given to students during the New Student Advisement and Registration Program. The university research and testing office supplied other information such as high school grade point average, high school class rank, standardized test scores, first year college grade point averages, and enrollment hours by term.

Discussion of Findings

A chi-squared analysis was used to determine if there were any differences in retention rates for first generation women and men. A stepwise discriminant analysis was

used to determine if there were any variables that could distinguish between, or categorize, the groups being studied.

It was hypothesized that there was no significant difference in the retention rate of first generation males compared to first generation females. The results of the chi-squared analysis found no statistically significant relationship between retention and gender. Therefore, we cannot determine with confidence that there is a difference in retention rates between first generation males and first generation females.

The second hypothesis was that no significant differences exist, as measured by the SIQ, between first generation male and first generation female students. There were 56 SIQ variables that were significantly different and 33 variables that entered into the stepwise discriminant analysis. Results of the present study revealed three main categories that differentiate first generation men and first generation women. The three categories are how first generation females and males spend their time during a typical week of their senior year in high school, how they rate their abilities in several areas, and their reasons for deciding to attend college.

In a typical week of the senior year, first generation women were less likely to spend time exercising on their own or participating in school sponsored events. Men were less likely to spend time doing their homework or volunteer work. In rating their own ability men were more likely to rate their ability as being strong in solving problems creatively, discussing world events, and finding information over the world wide web. First generation women rate their ability as being "very good" at expressing their thoughts in writing and at work with others on school projects.

In rating reasons for their decision to attend college, first generation males were more likely to list the following as being “very important”: getting a more enjoyable job, finding a boyfriend/girlfriend/spouse, and keeping a boyfriend/girlfriend/spouse. In rating the reasons that they are attending college first generation women were likely to list as being “very important” the following: improving study skills, preparing for graduate of professional school, developing intellectually, and learning to live and interact with people.

In rating how a college education is supposed to help you, first generation women were more likely to agree that it should help you get along with others, be independent, establish your identity, and understand and appreciate people who come from cultures other than your own. First generation women had decided at an earlier age that they were going to attend college, but first generation males had traveled more often over 100 miles and 1000 miles from home. First generation women were more likely to cite their parents as being important in attending the college that they did.

For the stepwise analysis of first generation males and first generation females 63 percent of the variance in the discriminant function between the two groups was unexplained. Results showed that approximately 78 percent of the students would have been correctly classified. First generation females are more likely to be classified correctly than first generation males. First generation males are more likely to be incorrectly classified as females compared to first generation females who are less likely to be incorrectly classified as male.

The third hypothesis stated that there was no significant difference, as measured by the SIQ, between first generation males who were retained and first generation males

who were not retained. There were 18 variables from the SIQ that had significantly different means for retained males and not retained males, but only four of the variables entered into the stepwise discriminant analysis.

Not retained first generation males were more likely to report getting lower grades in high school and rate their own ability as being higher in expressing their thoughts in writing. Not retained first generation males were more likely to report that during their senior year they spent more hours during the typical week socializing with friends than retained first generation males. First generation males who were retained were more likely to rate their own ability to express their thoughts in writing to be excellent or good, and to report that their second most difficult academic area will not be math.

Approximately 70 percent of the students were correctly classified. First generation retained males are more likely to be classified correctly than those not retained.

Likewise, first generation males not retained were more likely to be incorrectly classified as retained. First generation males retained were less likely to be incorrectly classified as not being retained. For the stepwise analysis of retained first generation males compared to not retained first generation, 92 percent of the variance in the discriminant function between the two groups is unexplained.

It was hypothesized that there are were no significant differences, as measured by the SIQ, between first generation females who were retained and first generation female students who were not retained. First generation retained females and not retained females differ significantly with regard to the mean and standard deviation on 29 of the SIQ variables and the results of the stepwise discriminant analysis yielded 16 variables that discriminated between the two groups.

First generation females who are retained were more likely to cite higher high school grades and to have decided at an earlier age that they were going to attend college. First generation females who were retained were more likely to have traveled more than 100 miles from home and to have attended smaller high schools.

First generation females who are retained are more likely to say that college is supposed to help you develop leadership skills, respect the views of others, and understand and appreciate cultures other than your own. First generation females who are retained were more likely to rate higher their reason for attending college as getting a more enjoyable job and to predict that they will spend more hours a week doing church work and more hours participating in school sponsored sports.

Non retained females were more likely to indicate that they spent more time during their average week as a high school senior working in a job for pay and predict that they will spend more time working in an off campus job the first year of college. Non retained females indicated that they spent more hours during a typical week in high school their senior year partying.

Non retained females were more likely to cite higher their reason for attending college as improving study skills and more likely to predict that there may be some chance they are not satisfied with college. Non retained females predict that they will spend less time at campus sponsored events such as ISU sports teams or sponsored speakers/concerts. For the stepwise analysis of retained first generation females compared to not retained first generation females, 83 percent of the variance in the discriminant function between the two groups is unexplained.

These results indicate that 75 percent of the students were correctly classified. First generation retained females are more likely to be classified correctly than those not retained. Likewise, first generation females not retained are more likely to be incorrectly classified as retained. First generation females retained are less likely to be incorrectly classified as not being retained.

Conclusions

Conclusions determined from the results of the study are confined to the margins of the limitations and assumptions of the study.

1. The retention rates of first generation students being almost identical for men and women is inconsistent with the overall gender differences in retention rates. Women have a higher graduation rate than men and this should be reflected in first generation females retention rates (NCES, 1995).
2. The differences in first generation females and first generation males appear to be identical to the findings for all men and women from Spady (1970) 30 years ago and Astin's (1990) findings more recently. Spady found that women and men attend college for different reasons, and that men are more tied to financial, occupational and economic goals. In this study, differences existed between the reasons that men and women gave for attending college, and what they viewed as what college is supposed to help you accomplish.
3. The differences in first generation men who were retained and those who were not retained, and the differences for first generation women who were retained and not retained were consistent with the previous studies. The

highest factor to discriminate between the two groups was the high school grade point average. High school grade point average is the strongest predictor of college grades and a predictor of retention (Astin, Korn & Green, 1987; Austin, Tsui, Avalos, 1996; Cambiano, Denny, & Vore, 1999).

Implications

Research demonstrates that men are generally not as prepared as women and this is reflected in the first generation population. This increases the risk of first generation men dropping out and of not performing as well. When a first generation man was asked what he believed his first semester grade point average would be, he cited the same grade point average as a first generation women would even though his past academic performance was not as strong. It would also appear that women by spending more time studying in high school and having a higher high school grade point average, and men spending more time partying and having a lower high school grade point average, that there should be a difference in self predicted grade point average.

Men tend to value the degree for the job it is supposed to provide, but many are do not perform at the level required for the degree. First generation men have a more unrealistic assessment of how they will do in college in terms of grade point average. Very few first generation men indicate that they believe they will fail at least one class, but many do. Even after a third of the first generation men have dropped out after two semesters, more than one out of four will not have a "C" average after the third semester. Men are coming to college having partied more, spent more time with friends, and want the degree for career purposes. Workshops and advising could possibly help first

generation men to see the stark contrast of how they think they will perform academically, with regard to grade point average, and their actual performance. The workshop should also relate the amount of time spent on homework and socializing with friends versus time spent studying.

First generation women are more likely to drop out when they did not spend as much time in extra-curricular activities in high school and do not believe they will participate much in extra-curricular activities in college. The first step in an intervention to increase retention among first generation women would be to increase their participation in extra-curricular activities. Not retained first generation women tend not to attend college to get a more enjoyable job. Career counseling might motivate more first generation women to remain in school.

First generation women while performing better than first generation men drop out at a similar rate. Spady (1971) found that women are more likely to drop out when they feel they are not reaching their academic potential or doing as well academically as they should. Spady (1971) found that men tended to remain in school even when they are performing at a lower grade point average than women. An attempt should be made for first generation women to understand that better grades might come in time, and that they may have to make some adjustments in what grades they feel are acceptable to earn in college.

Recommendations

Based on the results of the study the following recommendations are suggested:

1. Future studies should include a quantitative analysis of the first year experience of first generation students by gender. Each of the retention models include the experiences as being critical to the retention of students.
2. The graduation rates should be studied and compared for first generation men and women. With the results indicating no difference in first year retention rates the next logical step is to study longitudinal retention and graduation rates.
3. Since there was such a high amount of variance that was unaccounted for in three of the discriminant analysis tests, it is recommended that research be conducted to determine sources for the unknown and unaccounted variance such as: a) additional background variables, b) academic factors such as high school courses taken and the rigor of high school coursework, c) difference in courses taken during the first year of college, and d) additional factors in personal interests, attitudes, time management, and aspirations.
4. Future research should be conducted on first generation students by gender for full time and part time enrollment and also by age of enrollment.
5. Future research should include a sample that represents a variety and diversity of universities and colleges.
6. Future research on ethnicity and gender differences for first generation students.
7. In this study, “success” was generally measured as a student being retained. As demonstrated in chapter for Tables 5 through 7 there are many students in this study who did not have a “C” average after two semesters, but who

where allowed to continue. A follow up study should be conducted comparing the students who obtained above a “C” average and those that did not.

8. For both first generation women and men the non retained students reported that they would receive higher grades than the students who were retained. Future research should determine if this was or was not true.

Summary

There are significant differences between why first generation women and men attend college and what they hope to receive from the experience. Differences were found between first generation women who are retained and those that are not and differences were found between first generation men who were retained and those who are not. The differences, however, between the groups for retained and not retained were not the same for men and women.

Overall, first generation men are more tied to financial, occupational and economic goals. Between first generation men and women differences existed in the level of academic preparation and study habits. The single best predictor of whether a first generation student would be retained or not retained for both the male and female groups was the high school grade point average.

REFERENCES

REFERENCES

- American College Testing. (1999). 1999 ACT National and State Scores (on-line) Available: www.act.org/news/data/99/08-18-98.html.
- American College Testing. (1998). 1998 ACT National and State Scores (on-line) Available: www.act.org/news/data/98/08-18-98.html.
- Astin, A.W. (1975). Preventing Students from Dropping Out. A Longitudinal, Multi-Institutional Study of College Dropouts. San Francisco: Jossey-Bass.
- Astin, A. (1975). Personal and Environmental factors associated with college dropouts among high-aptitude students. Journal of Educational Psychology, 55, 219-227.
- Astin, H. (1990). Educating Women: A Promise and a Vision for the Future. American Journal of Education. 98, 479-93.
- Astin, A., Korn, W., Green, K. (1987). Retaining and satisfying Students. Educational Record. Winter 68, 36-42.
- Attinasi, L.C., Jr. (1989). Getting in: Getting in: Mexican-Americans' perceptions of university attendance and implications for freshman year persistence. Journal of Higher Education. 60: 247-277.
- Attinasi, L.C., Jr. (1992). Rethinking the study of the outcomes of college attendance. Journal of College Student Development 33: 61-70.
- Astin, A.W. (1993). Statistical Alternatives for Studying College Student Retention: A comparative Analysis of Logit, Probit, and Linear Regression. Research in Higher Education 34: 569-581.
- Bayer, A. (1968). The college drop-out: factors affecting senior college completion. Sociology of Education. 48, 305-316.
- Bean, J.P. (1980). Dropouts and turnover: The synthesis and test of causal model of student attrition. Research in Higher Education 12: 155-187.
- Davies, L., (1935). Women's Education Begins. Wheaton College Press.
- Dey, E., Astin, A. (1993). Statistical Alternatives for Studying College Student Retention. Research in Higher Education. 34, 569-581.

Durkeim, E.(1951). A Study in Sociology. (J. SpauldinG & G. Simpson Trans.). The Free Press New York.

Campbell,D.(1933).Problems In The Education Of College Women. George Peabody College For Teachers.

Campus Leaders Ponder 'Where Have All the Boys Gone?' Women in Higher Education Vol 9,No 1: January 2000. p 8

Eckland,B. (1964) Social Class and College Graduation:Some Misconceptions corrected. American Journal of Sociology, 70,60-72.

Huberty, C.J. (1975). Discriminant Analysis. Review of Educational Research, 45, 543-598.

Iffert, R.E.(1958)Retention and withdrawal of college students. U.S. Dept. of Health, Education and Welfare, Bulletin, 1958. No. 1. Washington, D.C.:U.S. Govt. Printing Office, 1958.

National Center for Educationa Statistics. Digest of Education Statistics for 1997, U.S. department of education, office of educational research and improvement, Table 244, page 261

National Center for Educational Statistics. Digest of Education Statistics for 1986, Table 244, page 261)

National Center for Educational Statistics. The Educational Progress of Women, U.S. department of education, office of educational research and improvement. NCES 95-768.

National Center for Educational Statistics. Findings from the Condition of Education 1995. U.S. department of education office of educational research and improvement NCES 95-768.

National Center for Educational Statistics. Findings from the Condition of Education 1996. U.S. department of education office of educational research and improvement NCES 96-768.

National Center for Educational Statistics. Findings from the Condition of Education 1997. U.S. department of education office of educational research and improvement NCES 97-768.

National Center for Educational Statistics. Findings from the Condition of Education 1998. U.S. department of education office of educational research and improvement NCES 98-768.

National Center for Education Statistics. Findings from the Condition of Education Progress of Women. U.S. department of education office of educational research and improvement NCES 95-768

National Center for Education Statistics. Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment" surveys. U.S. department of education office of educational research and improvement, Table 177.

National Center for Education Statistics. Projections of Educational Statistics to 2008, U.S. department of education, office of educational research and improvement Table 27, page 60.

National Center for Education Statistics.(June 1999) Projected Postsecondary Outcomes of 1992 High School Graduates, U.S. department of education, office of educational research and improvement. Working Paper No.1999-15

National Center for Education Statistics Trends In Educational Equity of Girls & Women, U.S. department of education, office of educational research and improvement. NCES 2000-030

Spady, W.G. (1970). Dropouts from higher education: an interdisciplinary review and synthesis. Interchange 1: 64-85.

Spady, W.G. (1971). Dropouts from higher education: Toward an empirical model. Interchange 2: 38-62.

Terenzini, P.T. (1980). an evaluation of three basic designs for studying attrition. Journal of College Student Personnel: 257-263.

Terenzini, P.T., and Pacaralla, E.T. (1977). Voluntary freshman attrition and patterns of social and academic integration in a university: A test of a conceptual model. Research in Higher Education 6: 25-43.

Tinto, V. (1975). Dropouts from higher education: A theoretical synthesis of recent research. Review of Educational Research 45: 89-123.

Tinto, V. (1982). Limits of Theory and Practice in Student Attrition. Journal of Higher Education 53: 687-700.

Tinto, V. (1987). Leaving College: Rethinking the Causes and Cures of Student Attrition. Chicago: University Press.

(Thomas Mortanson in the chronicle of higher education November 26, 1999 vol XLVI #14 page A73-74)

Pascarella,E.T., Terenzini,P.T.(1980) Predicting Freshman Persistence and Voluntary Dropout Decisions From a Theoretical Model. Journal of Higher Education 51:60-75.

Sadker,D., Sadker M. (1994) Failing at Fairness:How American Schools Cheat Girls. New York:C Scribner's Sons.

Sewell,W.,Shah,V.. Socioeconomic Status, Intelligence, and the Attainment of Higher Education. Sociology of Education, 1967, 40,1-23.

Spady, W.G.(1971). Dropouts from Higher Educaiton:Towards an Empirical Model.Interchange 1:64-85.

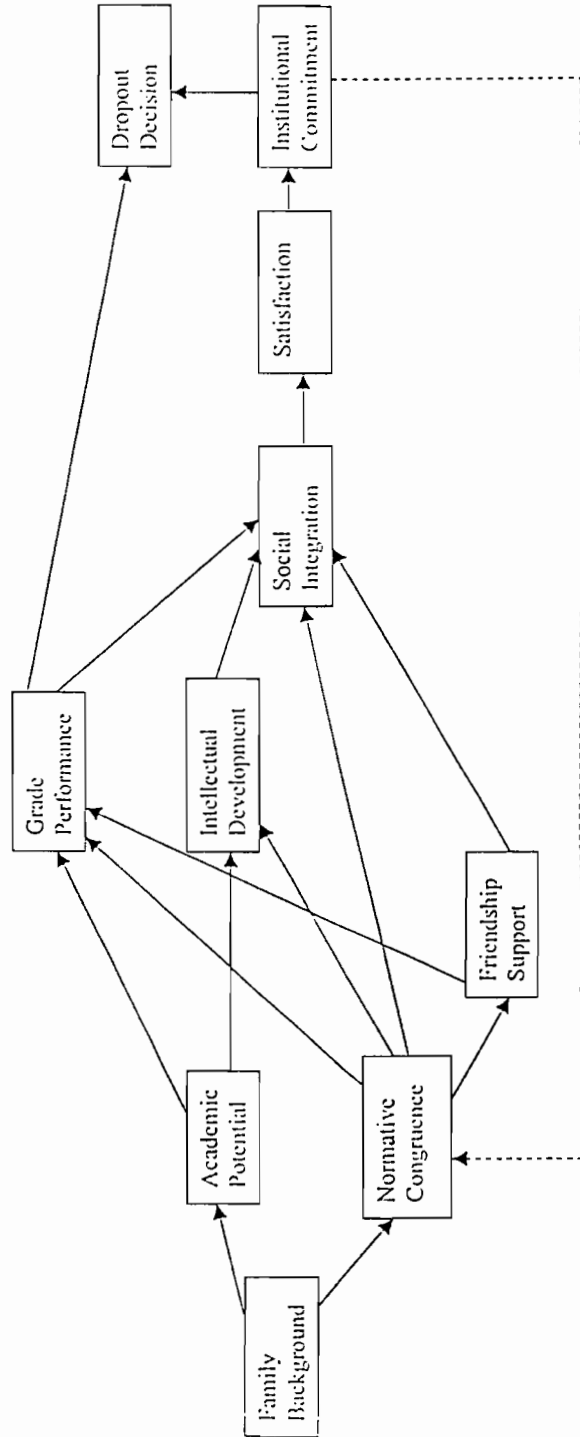
Tinto, V.(1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research. Review of Educational Research, Vol 9. New York:Agathon.

Trent,J., Medsker,l. Beyond High School. San Fransisco:Jossey-Bass, 1968.

APPENDIXES

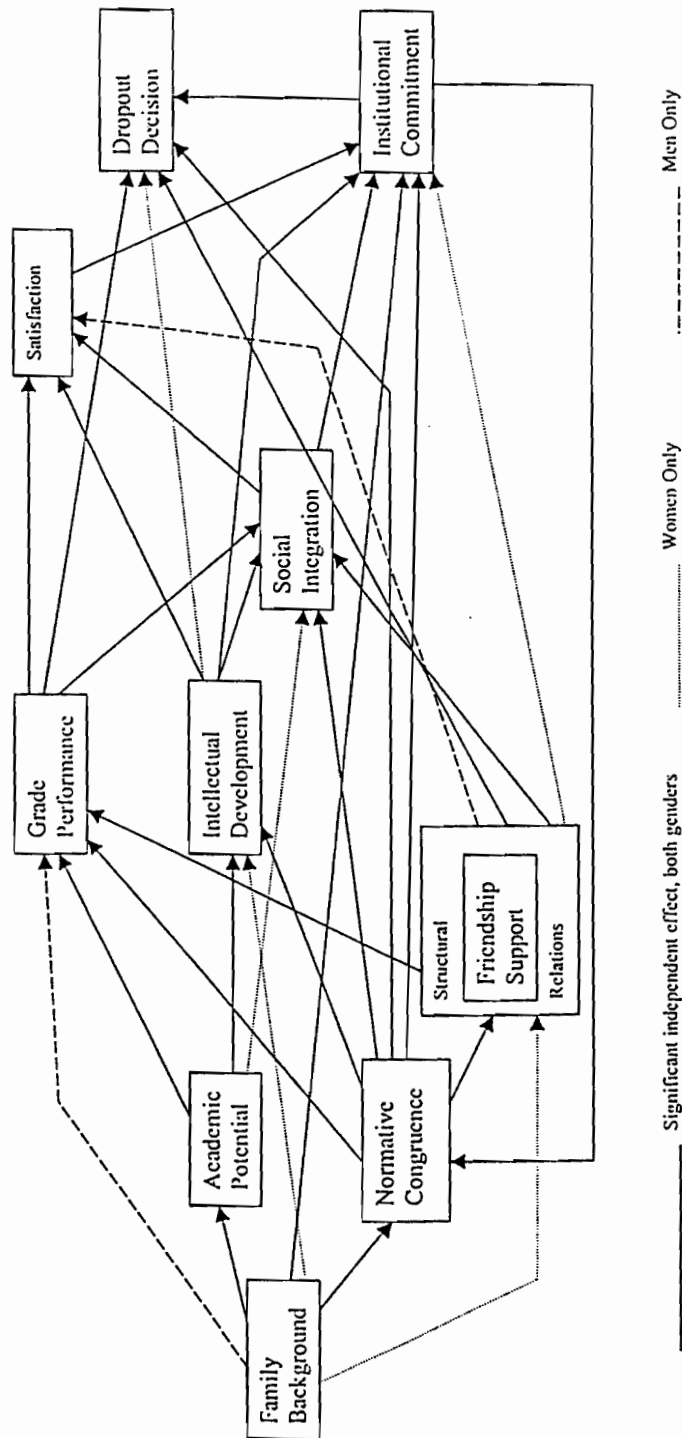
APPENDIX A

Spady's Theoretically Based Model of the Undergraduate Dropout Process (1971, p.39)



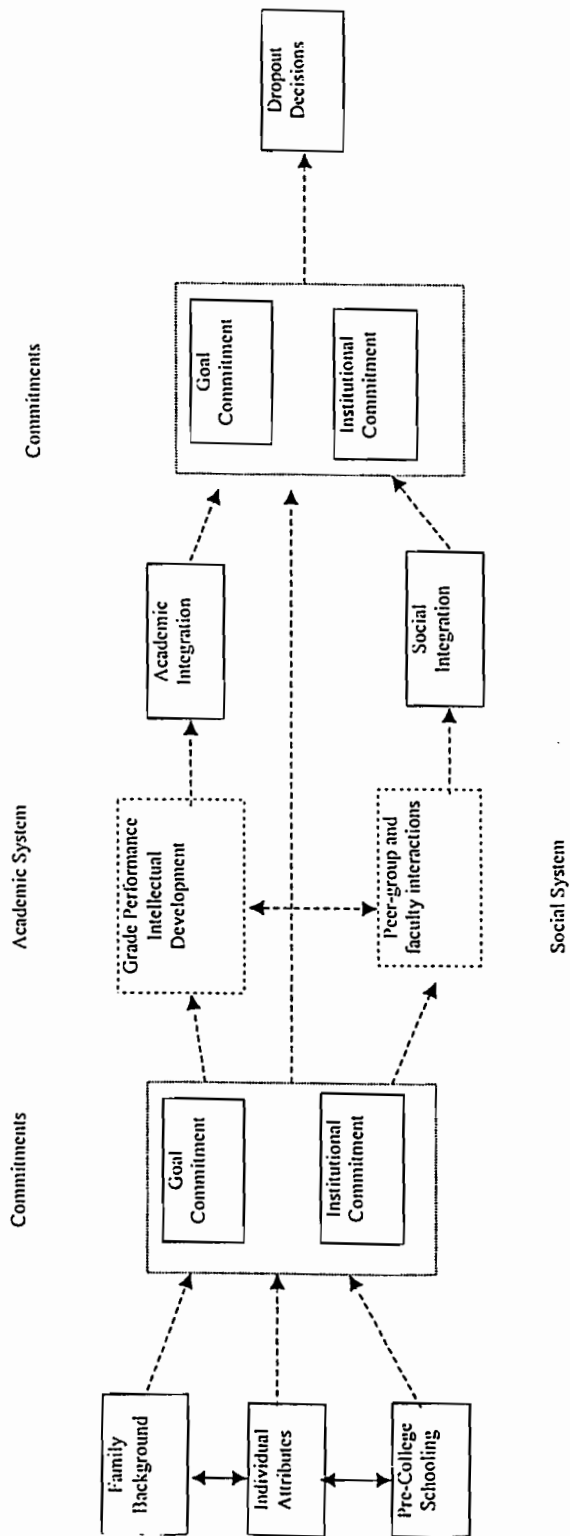
APPENDIX B

Spady's Empirical Model of the Undergraduate Dropout Process (1971, p.58)



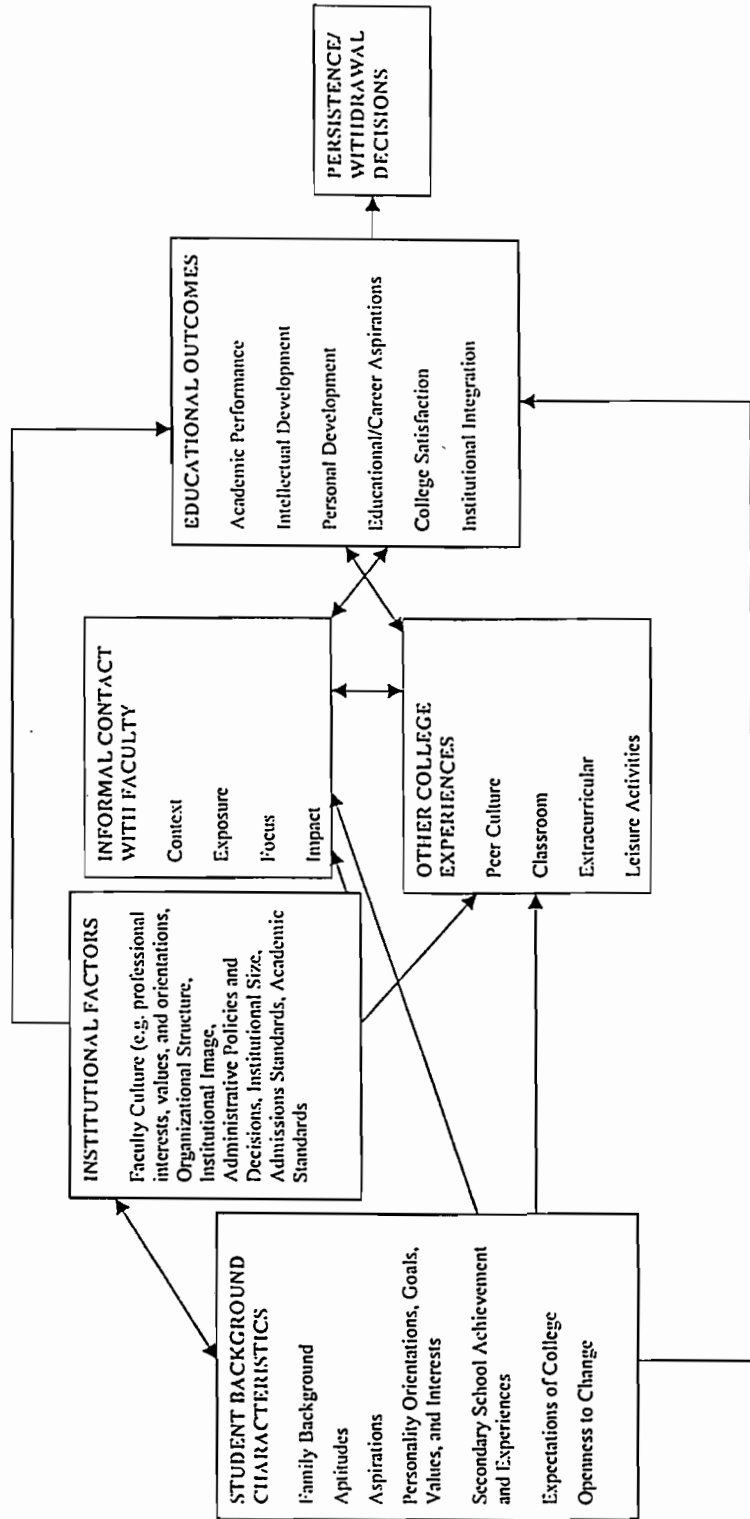
APPENDIX C

Tinto's Conceptual Schema for Dropout from College (1975, p.95)



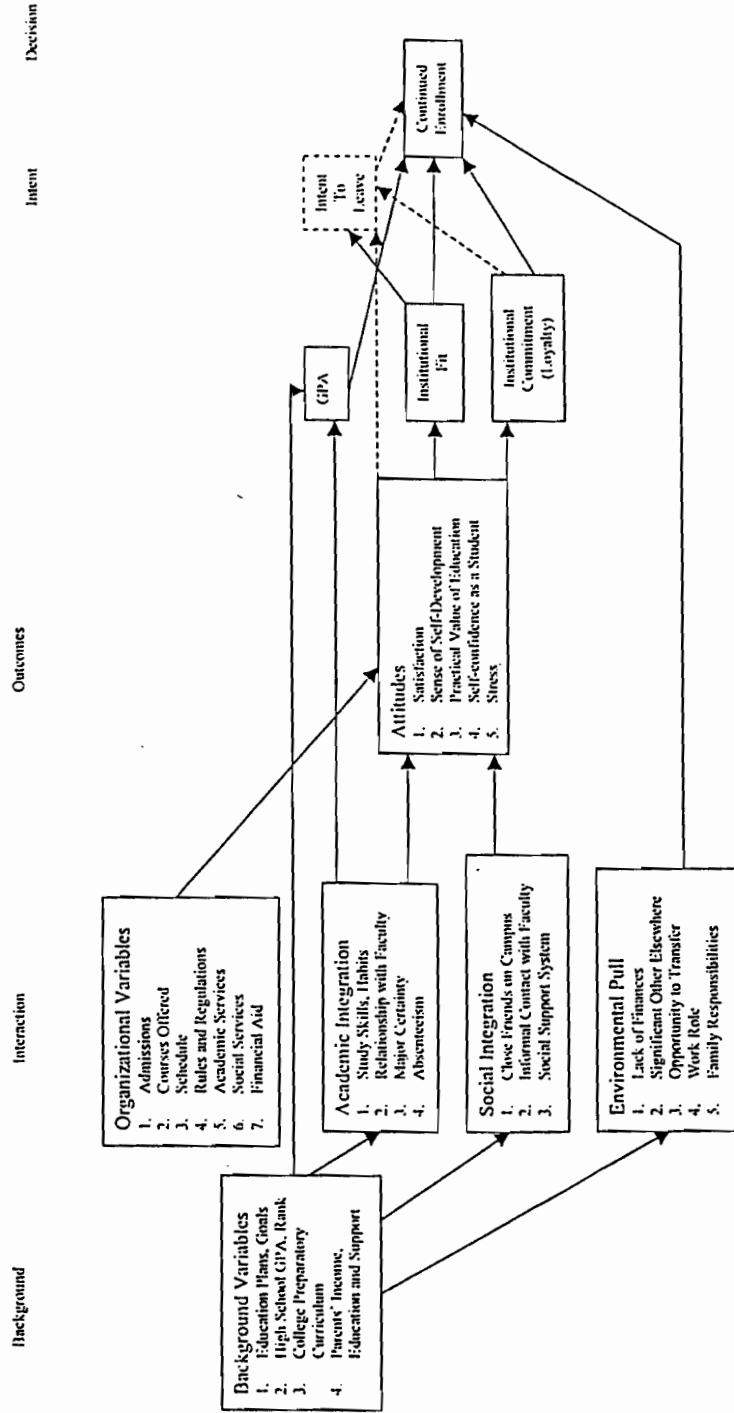
APPENDIX D

Pascarella's conceptual model for research on student-faculty informal contact (1980, p.569).



APPENDIX E

Beam's Longitudinal Model of the Type of Factors That Affect Retention Decisions (1990, pp.152-153)



APPENDIX F

I. GENERAL INFORMATION

<p>Q1 Compared to your hometown (when you graduated from high school) how big is Terre Haute?</p> <p>A Much larger B Larger C About the same size D Smaller E Much smaller F Don't know</p>	<p>Q5 How big was your high school graduating class?</p> <p>A 100 students or less B 101 to 200 Students C 201 to 300 Students D 301 to 400 Students E 401 to 500 Students F 501 to 600 Students G More than 600 Students H Don't know</p>
<p>Q2 What area do you feel best describes where you lived during high school?</p> <p>A Rural area B Small town C Moderate city D Large city E Suburban area outside large city</p> <p>Q3 How many miles is it from your home to Indiana State University?</p> <p>A 10 or less B 11-50 C 51-100 D 101-500 E 501-1,000 F More than 1,000</p>	<p>Use the following scale to answer Q6 through Q8.</p> <p>A None B 1-2 times C 3-5 times D 6-10 times E 11 or more times</p> <p>During the past 3 years, how often have you have traveled:</p> <p>Q6 More than 100 miles from your home Q7 More than 1000 miles from your home Q8 Outside the country in which you lived</p>
<p>If you will not return to your home each evening, please GO TO Q5, otherwise answer Q4.</p> <p>Q4 How much time will you spend each school day commuting (one way) from your home to ISU?</p> <p>A 5 minutes B 10 minutes C 15 minutes D 20 minutes E 30 minutes F One hour G One hour and 30 minutes H Two hours or more</p>	<p>Q9 When did you decide to attend college?</p> <p>A Elementary School B Grades 7 and 8 C Grade 9 (Freshman year) D Sophomore year E Junior year F Senior year G After high school graduation</p> <p>If you graduated from high school more than 3 years ago, please GO TO Q11, otherwise answer Q10.</p> <p>Q10 How long would you estimate that your parents have been saving for your college education?</p> <p>A Before I entered high school B During high school but before my senior year C My senior year in high school D I do not know how long they have been saving. E I do not know whether they saved for my college education.</p>

II. FAMILY BACKGROUND

<p>Parental education attainment</p> <p>Use the following scale to indicate the highest educational attainment of your parents:</p> <p>A <u>Graduate Professional Training.</u> (Persons who complete a recognized professional course leading to a graduate degree.) B <u>Standard College or University Graduation.</u> (All individuals who complete a recognized four-year college degree.) C <u>Associate's Degree.</u> (All individuals who complete a two-year degree program.) D <u>Partial College Training.</u> (Individuals who complete at least one year but not a full college degree program.) E <u>High School Graduate.</u> (All secondary school graduates awarded a high school diploma or its equivalent.) F <u>Partial High School.</u> (Individuals who complete nine to eleven grades, but do not complete high school.) G <u>Middle School.</u> (Individuals who complete the seventh through ninth grades.) H <u>Less Than Seven Years of School.</u> (Individuals who do not complete the seventh grade.)</p> <p>Q11 Mother's formal schooling Q12 Father's formal schooling</p>
--

<p>Parental occupations (If deceased or unemployed, indicate former or customary occupation.)</p> <p>Which of the following come closest to describing your parents' occupations?</p> <p>A Not employed outside the home B Retired C Unskilled worker, laborer, farm worker (nonowner) D Semi-skilled worker (e.g., machine operator, assembly-line worker) E Service worker (police, hairdresser, military noncommissioned officer, sales clerk, hospital attendant) F Skilled worker (carpenter, foreman, electrician, mason, painter, sales rep, bookkeeper, office worker, clerk) G Owner, manager, partner of farm or small business, governmental employee, commissioned military officer H Professional requiring degree (teacher, engineer, registered nurse, accountant, journalist) I Owner/high level executive of large business, governmental agency J Professional requiring advanced college degree (doctor, lawyer, college professor, dentist)</p> <p>Q13 Mother's occupation Q14 Father's occupation</p>	
<p>Q15 What is your best estimate of your family income last year? Consider before-tax income from all sources.</p> <p>A less than \$15,000 B between \$15,001 and \$20,000 C between \$20,001 and \$25,000 D between \$25,001 and \$30,000 E between \$30,001 and \$35,000 F between \$35,001 and \$40,000 G between \$40,001 and \$45,000 H between \$45,001 and \$50,000 I between \$50,001 and \$55,000 J between \$55,001 and \$60,000 K between \$60,001 and \$65,000 L over \$65,001</p>	<p>Q21 Did a grandparent attend or graduate from Indiana State University?</p> <p>A Yes B No</p>
<p>Use the following scale to answer Q16 through Q18.</p> <p>A 1 B 2 C 3 D 4 E 5 F 6 or more</p> <p>Including yourself, how many ...</p> <p>Q16 children do your parents have? Q17 members of your immediate family (parents and siblings) are in college this year? Q18 of your parents' children have attended Indiana State University (or will be attending this year)?</p>	<p>Use the following scale to answer Q22 and Q23.</p> <p>A Very supportive B Somewhat supportive C Neutral (They don't care one way or the other.) D Somewhat unsupportive E Not supportive</p> <p>How supportive do you feel your family is of your plans to:</p> <p>Q22 enroll in college? Q23 enroll at Indiana State University?</p>
<p>Use the following scale to answer Q19 and Q20.</p> <p>A Graduated from Indiana State University B Attended ISU but did not graduate C Did not attend Indiana State University</p> <p>Q19 Father's Indiana State University attendance? Q20 Mother's Indiana State University attendance?</p>	<p>III. SECONDARY SCHOOL BACKGROUND</p> <p>Q24 From what kind of high school or secondary school did you graduate?</p> <p>A public high school B private, nonreligious, nonmilitary C religious D military E other</p>

<p>Q27 Did you participate in school government? A Yes, Class/Student Body President B Yes, other C No</p>	<p>Q39 How adequate do you think your high school education was? A Excellent B Good C Average D Below average E Very inadequate</p>
<p>Use the following scale to answer Q28 through Q34.</p> <p>A <u>less than 1</u> hour per week B <u>1-5</u> hours per week C <u>6-10</u> hours per week D <u>11-15</u> hours per week E <u>16-20</u> hours per week F <u>21-25</u> hours per week G <u>26 or more</u> hours per week</p> <p>In a typical week during your senior year, how many hours did you spend:</p> <p>Q28 Doing homework? Q29 Socializing with friends? Q30 Participating in school sponsored sports? Q31 Working in a job for pay? Q32 Doing volunteer work? Q33 Exercising on your own? Q34 Partying?</p>	<p>Use the following scale to answer Q40 to Q52.</p> <p>A Very good B Good C Average D Not very good E Not good at all</p> <p>Rate your ability to:</p> <p>Q40 Lead a group discussion Q41 Solve problems creatively Q42 Make well-informed decisions Q43 Express your thoughts in oral communication Q44 Spend leisure time wisely Q45 Express your thoughts in writing Q46 Solve an algebra problem Q47 Discuss intelligently current world events Q48 Discuss intelligently national politics Q49 Use computers in completing school work Q50 Find information over the World Wide Web Q51 Use the library to gain information Q52 Work with others on school projects</p>
<p>Q35 What were your usual grades in high school? A A or A- (mostly A's) B B+ (A's and B's) C B (mostly B's) D B- (more B's than C's) E C+ (more C's than B's) F C (mostly C's) G D (mostly D's)</p>	<p>Use the following scale to answer Q53 to Q67.</p> <p>A Very important B Important C Not very important D Not important at all E No opinion at all</p> <p>Rate these reasons in your decision to go to college:</p> <p>Q53 Learning about a variety of topics Q54 Getting a more enjoyable job Q55 Making more money Q56 Becoming an educated person Q57 Becoming more cultured Q58 Improving study skills Q59 Preparing for graduate/professional school Q60 Learning about a specific topic Q61 Making my parents happy Q62 Developing social networks Q63 Finding a boyfriend/girlfriend/spouse Q64 Keeping a boyfriend/girlfriend Q65 Gaining a college degree Q66 Developing intellectually Q67 Learning to live and interact with people</p> <p>Q68 Darken the number on your answer sheet for the reason listed above which is most important to you.</p>
<p>Use the following to answer Q36 and Q37.</p> <p>A A lot B Some C None at all</p> <p>How much supportive individual attention did you receive from your high school teachers:</p> <p>Q36 In class Q37 After class</p>	
<p>Q38 During your senior year, how often (e.g., at parties, as friends) did you come into social contact with people of an ethnic or racial background different from your own? A Very often B Often C Sometimes D Rarely E No contact</p>	

<p>Q69 Which of the following best describes your attitude toward studying for your high school classes:</p> <p>A Studying was my favorite thing to do B Liked studying very much C Liked studying somewhat D Could take it or leave it E Didn't like studying very much F Didn't like studying at all G Didn't ever really study in high school</p>	<p>Use the following scale to answer Q88 through Q100.</p> <p>A None B 1-5 hours per week C 6-10 hours per week D 11-15 hours per week E 16-20 hours per week F 21-25 hours per week G 26-30 hours per week H 31-35 hours per week I More than 35 hours per week</p>
<p>IV. COLLEGE LEARNING EXPECTATIONS</p>	
<p>Use the following scale to answer Q70 through Q84.</p> <p>A Agree strongly B Agree somewhat C Neutral D Disagree somewhat E Disagree strongly</p> <p>A college education is supposed to help you:</p> <p>Q70 Get along with others Q71 Think critically Q72 Respect the views of others Q73 Develop close relationships with others Q74 Be sensitive to the feelings of others Q75 Be independent Q76 Develop greater ability to choose moral and ethical behavior Q77 Establish your identity Q78 Develop social skills Q79 Develop a meaningful philosophy of life Q80 Develop leadership skills Q81 Handle stress Q82 Understand & appreciate people who come from cultures other than your own Q83 Develop an expertise in a given subject area Q84 Communicate with others more effectively</p>	<p>During your first year in college, how much time per week do you expect to spend:</p> <p>Q88 Studying outside of class Q89 Using the library to find information Q90 Meeting with your professors outside of class Q91 Meeting with other students in a study group Q92 At campus events such as ISU sports teams or sponsored speakers/concerts Q93 Participating in student government Q94 Participating in fraternity/sorority events Q95 Participating in other campus organizations Q96 Socializing with new friends made on campus Q97 Socializing with friends made before coming to ISU Q98 Exercising Q99 Doing volunteer community service Q100 Doing church work</p> <p>Q101 What is the highest academic degree that you intend to attain? (MARK ONLY ONE.)</p> <p>A None B Associate degree C Bachelor's degree D Master's degree E Doctoral degree F Medical degree G Law degree</p>
<p>Q85 Where do you expect to live during your first semester?</p> <p>A With parents B University residence hall C Fraternity house D Other off campus housing</p>	<p>Use the following list to answer Q102 through Q104.</p> <p>A Communication (speech) B English Composition C Laboratory Sciences (biology, chemistry, geography, physics) D Literary and Artistic Studies (art, humanities, literature, music, philosophy) E Mathematics F Multi-cultural Studies (Africana Studies, Latin American Studies) G Physical Education H Social Sciences (economics, history, political science, psychology, sociology)</p>
<p>Use the following scale to answer Q86 and Q87.</p> <p>A None B 1-5 hours per week C 6-10 hours per week D 11-15 hours per week E 16-20 hours per week F More than 20 hours per week</p> <p>During your 1st semester, how much do you plan to work:</p> <p>Q86 In an on campus job? Q87 In an off campus job?</p>	<p>Q102 Which academic area will be most difficult for you Q103 Your second most difficult academic area Q104 Your third most difficult academic area</p>

V. CHOICE OF COLLEGE

<p>Use the following list to answer Q105 through Q111.</p> <p>A Indiana State University B Purdue University-West Lafayette (Main Branch) C Indiana University Purdue University - Indianapolis D Indiana University - Bloomington (Main Branch) E University of Southern Indiana F Ball State University G Vincennes University H Ivy Tech State College I Other Indiana public colleges J Other Indiana private colleges K Non-Indiana public colleges L Non-Indiana private colleges</p> <p>MARK ALL THAT APPLY for Q105 and Q106. Q105 To which of these college/universities have you applied? Q106 Which of these have accepted you?</p> <p>MARK ONLY ONE for Q107 through Q111. Q107 Which was your first choice? Q108 Which was your second choice? Q109 Which was your third choice? Q110 Which was your fourth choice? Q111 Which was your fifth choice?</p>	<p>Use the following scale to answer Q121 through Q130.</p> <p>A Did not consult B Very helpful C Somewhat helpful D Not very helpful E Not helpful at all</p> <p>How helpful were the following information sources in learning about Indiana State University? Q121 An Indiana State University student Q122 An ISU admissions representative Q123 Advertisements or media articles (newspaper, TV, radio) Q124 Reading an Indiana State University publication Q125 A high school counselor Q126 An Indiana State University alumnus Q127 A friend of a family member Q128 An Indiana State University faculty member Q129 The ISU website or the Internet Q130 An ISU information video</p>
<p>Q112 What percent of your decision to attend Indiana State University would you say was your own? A 0-10% B 11-20% C 21-30% D 31-40% E 41-50% F 51-60% G 61-70% H 71-80% I 81-90% J 91-100%</p>	<p>Q131 How does the amount of information you have been able to receive from Indiana State resources compare to what you desired? (MARK ALL THAT APPLY.) A Too much B About right -- satisfied my needs C Too little Admissions information D Too little Academic information E Too little information about costs F Too little Financial Aid information G Too little Housing information</p> <p>Q132 For which of these programs have you spent more than one day on the ISU campus? (MARK ALL THAT APPLY.) A American Legion Hoosier Boys' State/Girls' State B Summer Honors Seminar Program C 21st Century Scholars D State Police Camp E Music Workshop(s) F Athletics or cheerleading workshops G Other</p>
<p>Use the following scale to answer Q113 through Q120.</p> <p>A Very important B Important C Not very important D Not important at all</p> <p>How important were each of the following in your choice to attend Indiana State University? Q113 Indiana State University representative Q114 High school counselor Q115 High school teacher Q116 Parents Q117 Friends Q118 Indiana State University alumnus Q119 Current Indiana State University student Q120 Relative other than parents</p>	<p>Q133 Using a 4-point scale (4=A, 3=B, 2=C, 1=D, 0=F), indicate what you predict will be your overall grade point average for your first semester: A 3.00-4.00 B 2.50-2.99 C 2.00-2.49 D 1.30-1.99 E Below 1.30</p>

Reasons for Deciding to Attend Indiana State University	Expectations of Time at ISU
<p>Use the following scale to answer Q134 through Q152.</p> <p>A Essential B Very important C Fairly important D Not very important E Not at all important</p> <p>How important was each of these factors to you in reaching your decision to attend Indiana State University:</p> <p>Q134 Financial aid available at Indiana State University Q135 Low cost Q136 Close to home Q137 Far away from home Q138 Appearance of campus Q139 Visit to Indiana State University's campus Q140 A publication of Indiana State University Q141 Academic reputation of Indiana State University Q142 Academic reputation of the department in major area Q143 Quality of faculty Q144 ISU's presentation at a College Day/Night at your high school Q145 A "Presenting ISU" session at a location near you Q146 Size of campus Q147 Campus social life Q148 Student activities and organizations Q149 Class size Q150 Student Computing facilities Q151 Opportunity to study with particular professor Q152 Life in the residence halls</p>	<p>Use the following scale to answer Q153 through Q162.</p> <p>A Very good chance B Some chance C Very little chance D No chance</p> <p>What do you consider the chances are of the following things happening to you during your educational career:</p> <p>Q153 Join a fraternity or sorority at Indiana State University Q154 Fail one or more classes Q155 Get tutoring help in specific courses Q156 Need extra time to complete your degree requirements Q157 Graduate with honors Q158 Transfer to another college before graduating Q159 Drop out permanently (excluding transferring) Q160 Be satisfied with your college Q161 Be gainfully employed during the school year Q162 Have a car on campus during your first semester</p>

THANK YOU FOR TELLING US ABOUT YOURSELF. THE INFORMATION YOU HAVE PROVIDED IS CONFIDENTIAL AND WILL BE USED FOR RESEARCH PURPOSES.

NOW, IT IS YOUR TURN. THE REST OF THE QUESTIONS ON THE ANSWER SHEET ALLOW YOU THE OPPORTUNITY TO LET US KNOW IF THERE ARE SOME AREAS WE CAN HELP YOU WITH AT ISU. YOUR ANSWERS IN THIS SECTION WILL BE FORWARDED TO THOSE ISU PERSONNEL WHO CAN BEST MEET YOUR NEEDS.

APPENDIX G

Means and Standard Deviations for First Generation Males and Females.

Predictor variable	Male		Female		Total	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Compared to hometown, how big is Terre Haute?	2.14	1.29	2.18	1.27	2.17	1.28
Area you lived during high school?	2.19	0.99	2.17	1.03	2.18	1.01
# of Miles from home to Indiana State?	2.85	1.07	2.82	1.08	2.83	1.08
How big was your high school graduating class?	2.78	1.56	2.71	1.67	2.74	1.63
Traveled more the 100 miles from home	3.48	1.12	3.34	1.09	3.40	1.10
Traveled more than 1,000 miles from home	1.84	0.87	1.95	0.83	1.91	0.85
Traveled outside the country	1.17	0.45	1.20	0.49	1.19	0.47
When did you decide to attend college?	2.75	1.91	2.31	1.80	2.48	1.86
How long have parents been saving for your college education?	3.72	1.43	3.73	1.42	3.72	1.42
Mother's Occupation	4.47	2.00	4.40	1.97	4.43	1.98
father's occupation	5.23	1.59	5.04	1.63	5.12	1.61
Best estimate of family income last year	6.26	3.26	5.85	3.24	6.01	3.25
How many children do your parents have?	2.82	1.14	3.00	1.31	2.93	1.24
How many members of your immediate family are in college now?	1.31	0.68	1.28	0.60	1.29	0.63
How many of yor parents' children have attended ISU?	1.15	0.41	1.16	0.42	1.16	0.42
Father's ISU attendance	2.97	0.21	2.98	0.16	2.98	0.18
Mother's ISU attendance	2.98	0.17	2.98	0.18	2.98	0.18
Did a grandparent attend ISU?	1.99	0.11	1.98	0.15	1.98	0.13
How supportive do you feel your family is of your plans to enroll in college?	1.19	0.53	1.20	0.62	1.20	0.59
How supportive do you feel your family is of your plans to enroll in ISU?	1.42	0.78	1.35	0.74	1.38	0.75
# of friends from high school attending college this year	1.82	1.09	1.80	1.11	1.81	1.10
# of friends from high school attending ISU this year	2.93	0.81	2.98	0.86	2.96	0.84
How much time during your senior year did you spend Doing homework?	2.17	0.86	2.52	1.02	2.38	0.97
Socializing with friends?	4.27	1.64	3.81	1.50	3.99	1.57
Participating in school sponsored sports?	3.18	1.92	2.54	1.71	2.80	1.82
Working in a job for pay?	4.17	2.16	4.17	1.98	4.17	2.05
Doing volunteer work?	1.28	0.67	1.45	0.73	1.39	0.71
Exercising on your own time?	2.27	1.25	1.87	0.86	2.03	1.06
Partying?	2.21	1.43	1.91	1.10	2.03	1.25
What were your usual grades in high school?	3.58	1.38	3.08	1.41	3.28	1.42

Doing volunteer work?	1.28	0.67	1.45	0.73	1.39	0.71
Exercising on your own time?	2.27	1.25	1.87	0.86	2.03	1.06
Partying?	2.21	1.43	1.91	1.10	2.03	1.25
What were your usual grades in high school?	3.58	1.38	3.08	1.41	3.28	1.42
How much individual attention did you receive from your high school teachers in class?	1.66	0.59	1.62	0.54	1.64	0.56
How much individual attention did you receive from you high school teachers after class?	2.14	0.66	1.99	0.66	2.05	0.67
How often did you come into social contact with people of an ethnic or racial background different from your own?	2.93	1.28	2.93	1.25	2.93	1.26
How adequate do you think your high school education was?	2.36	0.69	2.34	0.73	2.35	0.71
ability to lead a group discussion	2.33	0.94	2.33	0.98	2.33	0.96
solve problems creatively	2.02	0.94	2.26	0.91	2.17	0.93
make well-informed decisions	1.83	0.85	1.91	0.87	1.88	0.86
express your thoughts in oral communication	2.06	0.99	2.06	0.97	2.06	0.98
spend leisure time wisely	2.15	0.98	2.08	0.94	2.11	0.96
express your thoughts in writing	2.34	1.11	1.94	1.00	2.10	1.07
solve an algebra problem	2.23	1.07	2.38	1.08	2.32	1.08
discuss intelligently current world events	2.40	1.00	2.61	0.94	2.53	0.97
discuss intelligently national politics	2.68	1.03	2.82	1.03	2.76	1.03
use computers in completing school work	2.00	0.95	2.01	0.95	2.00	0.95
find information over the World Wide Web	2.09	1.01	2.34	1.04	2.24	1.04
use the library to gain information	2.01	0.98	1.86	0.88	1.92	0.93
work with others on school projects	1.82	0.86	1.62	0.78	1.70	0.82
Learning about a variety of topics	2.19	0.91	2.03	0.82	2.09	0.86
Getting a more enjoyable job	1.37	0.65	1.44	0.75	1.41	0.71
Making more money	1.47	0.73	1.60	0.80	1.55	0.77
bocoming an educated person	1.48	0.68	1.28	0.50	1.36	0.59
Becoming more cultured	2.26	1.06	1.89	0.89	2.04	0.98
Improving study skills	1.98	0.96	1.66	0.70	1.79	0.83
Preparing for graduate/professional school	2.42	1.22	2.02	1.06	2.18	1.15
learning about a specific topic	1.83	0.82	1.76	0.82	1.79	0.82
Making my parents happy	2.62	1.23	2.52	1.22	2.56	1.22
Developing social networks	2.37	1.07	2.14	0.93	2.23	0.99
finding a boyfriend/girlfriend/spouse	3.19	1.22	3.62	1.10	3.45	1.17
Keeping a boyfriend/girlfriend	3.08	1.28	3.56	1.21	3.37	1.26
Gaining a college degree	1.13	0.42	1.09	0.30	1.11	0.36
Developing intellectually	1.59	0.68	1.36	0.53	1.45	0.60
learning to live and interact with people	1.78	0.85	1.48	0.73	1.60	0.79
most important reason for going to college	58.20	8.26	59.01	8.61	58.68	8.48
best describes your attitude toward studying for your high school classes	4.30	1.30	3.90	1.18	4.06	1.25
Get along with others	2.10	0.83	2.13	0.85	2.12	0.84
Think critically	1.65	0.66	1.53	0.67	1.58	0.67
Respect the views of others	1.97	0.75	1.76	0.72	1.85	0.74
Develop close relationships with others	2.21	0.82	2.06	0.81	2.12	0.82
Be sensitive to the feelings of others	2.36	0.90	2.16	0.89	2.24	0.90

Be independent	1.57	0.72	1.30	0.56	1.41	0.64
Develop greater ability to choose moral and ethical behavior	2.01	0.84	1.75	0.77	1.85	0.81
Establish your identity	1.89	0.81	1.61	0.74	1.72	0.78
Develop social skills	1.85	0.73	1.67	0.69	1.74	0.71
Develop a meaningful philosophy of life	2.22	0.90	1.99	0.84	2.08	0.87
Develop leadership skills	1.80	0.73	1.65	0.68	1.71	0.70
Handle stress	2.05	0.89	1.99	0.89	2.01	0.89
Understand and appreciate people who come from cultures other than your own	2.10	0.86	1.78	0.74	1.91	0.80
Develop an expertise in a given subject area	1.40	0.60	1.40	0.62	1.40	0.61
Communicate with others more effectively	1.76	0.69	1.58	0.61	1.66	0.65
In an on campus job?	2.22	1.51	2.35	1.50	2.29	1.51
In an off campus job?	2.93	1.90	2.83	1.90	2.87	1.90
Studying outside of class	4.21	1.47	4.22	1.43	4.22	1.45
Using the library to find information	2.84	1.17	2.83	1.04	2.83	1.09
Meeting with your professors outside of class	2.11	0.69	2.07	0.60	2.09	0.64
Meeting with other students in a study group	2.42	1.04	2.41	0.89	2.41	0.95
At campus events such as ISU sports teams or sponsored speakers/concerts	2.65	1.41	2.41	1.06	2.51	1.22
Participating in student government	1.32	0.71	1.38	0.71	1.35	0.71
Participating in fraternity/sorority events	1.78	1.19	1.64	1.04	1.70	1.10
Participating in other campus organizations	2.12	1.03	2.18	0.89	2.16	0.95
Socializing with new friends made on campus	3.06	1.32	2.94	1.23	2.99	1.27
Socializing with friends made before coming to ISU	3.19	1.62	2.93	1.34	3.04	1.46
Exercising	2.86	1.27	2.49	1.10	2.64	1.19
Doing volunteer community service	1.45	0.63	1.62	0.67	1.55	0.66
Doing church work	1.42	0.70	1.54	0.75	1.49	0.73
what is the highest degree that you intend to attain?	3.57	0.98	3.53	0.88	3.54	0.92
Which area will be most difficult for you?	3.62	1.70	4.06	1.85	3.88	1.80
Your second most difficult academic area?	3.77	2.06	4.01	2.11	3.91	2.09
Your third most difficult academic area	4.13	2.25	4.58	2.39	4.40	2.34
What percent of your decision to attend ISU was your own?	9.15	1.59	8.97	1.84	9.04	1.75
Parents	2.45	0.94	2.22	0.96	2.31	0.96
Friends	2.42	0.86	2.46	0.92	2.44	0.90
What do you predict your overall gpa to be for the first semester?	1.72	0.68	1.71	0.69	1.71	0.69
Join a fraternity or sorority at ISU	2.56	1.02	2.61	0.98	2.59	0.99
Fail one or more classes	3.18	0.70	3.26	0.67	3.23	0.68
Get tutoring help in specific courses	1.89	0.74	1.79	0.64	1.83	0.68
Need extra time to complete your degree requirements	2.54	0.72	2.57	0.72	2.56	0.72
Graduate with honors	2.39	0.64	2.35	0.75	2.37	0.71
Transfer to another college before graduating	2.87	0.81	2.96	0.81	2.92	0.81
Drop out permanently	3.70	0.54	3.76	0.50	3.73	0.52
Be satisfied with your college	1.50	0.54	1.41	0.54	1.45	0.54
Be gainfully employed during the school year	1.92	0.75	1.75	0.68	1.82	0.71
have a car on campus during your first semester	1.63	0.91	1.71	1.02	1.67	0.98

APPENDIX H

Significant Means and Standard Deviations of Predictor Variables as a function of Retention for Males.

Predictor variable	<u>Not Retained</u>		<u>Retained</u>		<u>Total</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Retained all three semesters						
Compared to hometown, how big is Terre Haute?	2.22	1.44	2.12	1.28	2.14	1.31
Area you lived during high school?	2.04	0.83	2.23	0.96	2.19	0.94
# of Miles from home to Indiana State?	2.71	1.07	2.90	1.07	2.86	1.07
How big was your high school graduating class?	2.82	1.75	2.77	1.48	2.78	1.54
Traveled more the 100 miles from home	3.39	1.08	3.47	1.14	3.46	1.12
Traveled more than 1,000 miles from home	1.86	0.89	1.79	0.85	1.81	0.86
Traveled outside the country	1.18	0.39	1.20	0.50	1.20	0.48
When did you decide to attend college?	2.92	2.02	2.65	1.84	2.71	1.88
How long have parents been saving for your college education?	3.99	1.24	3.66	1.46	3.73	1.42
Mother's Occupation	4.45	2.01	4.46	2.01	4.46	2.01
father's occupation	5.17	1.62	5.27	1.58	5.25	1.59
Best estimate of family income last year	5.75	3.26	6.36	3.21	6.23	3.22
How many children do your parents have?	2.79	1.26	2.85	1.09	2.84	1.13
How many members of your immediate family are in college now?	1.32	0.77	1.32	0.66	1.32	0.69
How many of yor parents' children have attended ISU?	1.15	0.42	1.18	0.44	1.17	0.44
Father's ISU attendance	2.93	0.26	2.99	0.15	2.97	0.18
Mother's ISU attendance	2.97	0.17	2.99	0.13	2.99	0.14
Did a grandparent attend ISU?	1.99	0.12	1.99	0.10	1.99	0.11
How supportive do you feel your family is of your plans to enroll in college?	1.15	0.46	1.21	0.57	1.20	0.55
How supportive do you feel your family is of your plans to enroll in ISU?	1.34	0.63	1.45	0.84	1.43	0.80
# of friends from high school attending college this year	1.69	0.96	1.78	1.09	1.76	1.07
# of friends from high school attending ISU this year	2.74	0.80	2.95	0.82	2.91	0.82
How much time during your senior year did you spend Doing homework?	2.13	0.92	2.19	0.87	2.18	0.88
Socializing with friends?	4.68	1.85	4.09	1.56	4.21	1.64
Participating in school sponsored sports?	3.33	1.93	3.22	1.89	3.24	1.89
Working in a job for pay?	4.63	2.10	4.08	2.17	4.20	2.16
Doing volunteer work?	1.24	0.49	1.30	0.73	1.29	0.69
Exercising on your own time?	2.04	1.07	2.32	1.27	2.26	1.23
Partying?	2.31	1.62	2.13	1.33	2.16	1.40
What were your usual grades in high school?	3.78	1.46	3.42	1.35	3.50	1.38
How much individual attention did you receive from your high	1.56	0.57	1.68	0.60	1.65	0.60

school teachers in class?						
How much individual attention did you receive from you high school teachers after class?	2.10	0.53	2.12	0.67	2.12	0.64
How often did you come into social contact with people of an ethnic or racial background different from your own?	2.92	1.22	3.00	1.29	2.98	1.27
How adequate do you think your high school education was?	2.35	0.69	2.32	0.71	2.32	0.70
ability to lead a group discussion	2.06	0.85	2.33	0.96	2.27	0.95
solve problems creatively	1.73	0.89	2.06	0.96	1.99	0.95
make well-informed decisions	1.73	0.93	1.79	0.84	1.78	0.86
express your thoughts in oral communication	1.75	0.87	2.04	0.97	1.98	0.96
spend leisure time wisely	1.72	0.86	2.15	0.98	2.06	0.97
express your thoughts in writing	1.70	0.83	2.43	1.11	2.28	1.10
solve an algebra problem	1.88	0.90	2.18	1.07	2.12	1.05
discuss intelligently current world events	2.24	0.90	2.35	1.02	2.32	1.00
discuss intelligently national politics	2.36	0.83	2.65	1.06	2.59	1.02
use computers in completing school work	1.74	0.87	2.05	0.99	1.99	0.98
find information over the World Wide Web	1.78	0.84	2.16	1.02	2.08	1.00
use the library to gain information	1.58	0.87	2.06	0.99	1.96	0.98
work with others on school projects	1.63	0.89	1.84	0.88	1.80	0.88
Learning about a variety of topics	2.02	0.80	2.17	0.88	2.14	0.86
Getting a more enjoyable job	1.39	0.57	1.36	0.65	1.37	0.63
Making more money	1.42	0.66	1.46	0.70	1.45	0.69
bocoming an educated person	1.39	0.66	1.51	0.68	1.48	0.68
Becoming more cultured	1.97	0.95	2.25	1.02	2.19	1.01
Improving study skills	1.75	0.69	1.96	0.95	1.92	0.90
Preparing for graduate/professional school	2.16	1.16	2.44	1.21	2.38	1.20
learning about a specific topic	1.89	0.80	1.81	0.80	1.83	0.80
Making my parents happy	2.23	0.95	2.69	1.25	2.59	1.21
Developing social networks	2.11	0.91	2.35	1.05	2.30	1.02
finding a boyfriend/girlfriend/spouse	2.91	1.12	3.19	1.20	3.13	1.19
Keeping a boyfriend/girlfriend	2.88	1.26	3.09	1.24	3.05	1.25
Gaining a college degree	1.18	0.42	1.13	0.42	1.14	0.42
Developing intellectually	1.48	0.55	1.60	0.64	1.57	0.63
learning to live and interact with people	1.70	0.78	1.77	0.80	1.76	0.80
most important reason for going to college	58.94	8.70	57.93	8.76	58.14	8.75
best describes your attitude toward studying for your high school classes	4.34	1.41	4.28	1.27	4.29	1.30
Get along with others	1.85	0.71	2.11	0.84	2.06	0.82
Think critically	1.64	0.62	1.65	0.67	1.65	0.66
Respect the views of others	1.90	0.63	1.97	0.74	1.95	0.72
Develop close relationships with others	2.12	0.74	2.21	0.83	2.19	0.82
Be sensitive to the feelings of others	2.14	0.87	2.36	0.89	2.32	0.89
Be independent	1.63	0.63	1.57	0.75	1.59	0.73
Develop greater ability to choose moral and ethical behavior	1.92	0.81	2.01	0.84	1.99	0.83
Establish your identity	1.90	0.82	1.88	0.81	1.88	0.81
Develop social skills	1.75	0.76	1.86	0.71	1.84	0.72
Develop a meaningful philosophy of life	2.19	0.91	2.21	0.90	2.20	0.90
Develop leadership skills	1.74	0.66	1.78	0.73	1.77	0.72

Handle stress	1.97	0.82	2.05	0.91	2.04	0.89
Understand and appreciate people who come from cultures other than your own	2.13	0.83	2.09	0.85	2.10	0.84
Develop an expertise in a given subject area	1.52	0.62	1.37	0.58	1.40	0.59
Communicate with others more effectively	1.77	0.69	1.72	0.66	1.73	0.67
In an on campus job?	2.40	1.64	2.19	1.50	2.24	1.53
In an off campus job?	3.31	1.91	2.82	1.88	2.92	1.89
Studying outside of class	4.17	1.63	4.24	1.44	4.22	1.48
Using the library to find information	2.99	1.55	2.81	1.05	2.85	1.17
Meeting with your professors outside of class	2.13	0.65	2.09	0.69	2.10	0.68
Meeting with other students in a study group	2.48	1.15	2.40	1.01	2.42	1.04
At campus events such as ISU sports teams or sponsored speakers/concerts	2.65	1.68	2.67	1.29	2.67	1.38
Participating in student government	1.38	0.71	1.30	0.71	1.32	0.71
Participating in fraternity/sorority events	1.77	1.15	1.78	1.17	1.78	1.16
Participating in other campus organizations	2.05	0.80	2.12	1.04	2.11	1.00
Socializing with new friends made on campus	3.00	1.27	3.06	1.34	3.05	1.32
Socializing with friends made before coming to ISU	3.13	1.26	3.15	1.67	3.14	1.59
Exercising	2.73	1.39	2.87	1.20	2.84	1.24
Doing volunteer community service	1.50	0.66	1.45	0.63	1.46	0.63
Doing church work	1.42	0.53	1.44	0.75	1.44	0.71
What is the highest degree that you intend to attain?	3.72	1.18	3.58	0.94	3.61	1.00
Which area will be most difficult for you?	3.45	1.68	3.67	1.76	3.62	1.75
Your second most difficult academic area?	3.79	2.21	3.61	1.94	3.65	2.00
Your third most difficult academic area	4.03	2.12	4.11	2.27	4.09	2.24
What percent of your decision to attend ISU was your own?	9.20	1.57	9.14	1.66	9.15	1.64
Parents	2.36	0.88	2.46	0.96	2.44	0.94
Friends	2.22	0.79	2.47	0.86	2.42	0.85
What do you predict your overall gpa to be for the first semester?	1.72	0.74	1.68	0.65	1.69	0.67
Join a fraternity or sorority at ISU	2.48	1.02	2.57	1.04	2.55	1.03
Fail one or more classes	3.15	0.73	3.19	0.69	3.18	0.70
Get tutoring help in specific courses	1.87	0.70	1.92	0.76	1.91	0.74
Need extra time to complete your degree requirements	2.44	0.74	2.58	0.73	2.55	0.74
Graduate with honors	2.34	0.65	2.37	0.67	2.37	0.66
Transfer to another college before graduating	2.80	0.81	2.89	0.80	2.87	0.81
Drop out permanently	3.66	0.51	3.70	0.58	3.69	0.57
Be satisfied with your college	1.54	0.60	1.47	0.53	1.49	0.55
Be gainfully employed during the school year	1.81	0.69	1.91	0.74	1.89	0.73
Have a car on campus during your first semester	1.58	0.82	1.66	0.95	1.65	0.93

Means and Standard Deviations for Retention and Not Retained Males.

Predictor variable	<u>Not Retained</u>		<u>Retained</u>		<u>Total</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Retained all three semesters						
Compared to hometown, how big is Terre Haute?	2.22	1.44	2.12	1.28	2.14	1.31
Area you lived during high school?	2.04	0.83	2.23	0.96	2.19	0.94
# of Miles from home to Indiana State?	2.71	1.07	2.90	1.07	2.86	1.07
How big was your high school graduating class?	2.82	1.75	2.77	1.48	2.78	1.54
Traveled more the 100 miles from home	3.39	1.08	3.47	1.14	3.46	1.12
Traveled more than 1,000 miles from home	1.86	0.89	1.79	0.85	1.81	0.86
Traveled outside the country	1.18	0.39	1.20	0.50	1.20	0.48
When did you decide to attend college?	2.92	2.02	2.65	1.84	2.71	1.88
How long have parents been saving for your college education?	3.99	1.24	3.66	1.46	3.73	1.42
Mother's Occupation	4.45	2.01	4.46	2.01	4.46	2.01
father's occupation	5.17	1.62	5.27	1.58	5.25	1.59
Best estimate of family income last year	5.75	3.26	6.36	3.21	6.23	3.22
How many children do your parents have?	2.79	1.26	2.85	1.09	2.84	1.13
How many members of your immediate family are in college now?	1.32	0.77	1.32	0.66	1.32	0.69
How many of yor parents' children have attended ISU?	1.15	0.42	1.18	0.44	1.17	0.44
Father's ISU attendance	2.93	0.26	2.99	0.15	2.97	0.18
Mother's ISU attendance	2.97	0.17	2.99	0.13	2.99	0.14
Did a grandparent attend ISU?	1.99	0.12	1.99	0.10	1.99	0.11
How supportive do you feel your family is of your plans to enroll in college?	1.15	0.46	1.21	0.57	1.20	0.55
How supportive do you feel your family is of your plans to enroll in ISU?	1.34	0.63	1.45	0.84	1.43	0.80
# of friends from high school attending college this year	1.69	0.96	1.78	1.09	1.76	1.07
# of friends from high school attending ISU this year	2.74	0.80	2.95	0.82	2.91	0.82
How much time during your senior year did you spend Doing homework?	2.13	0.92	2.19	0.87	2.18	0.88
Socializing with friends?	4.68	1.85	4.09	1.56	4.21	1.64
Participating in school sponsored sports?	3.33	1.93	3.22	1.89	3.24	1.89
Working in a job for pay?	4.63	2.10	4.08	2.17	4.20	2.16
Doing volunteer work?	1.24	0.49	1.30	0.73	1.29	0.69
Exercising on your own time?	2.04	1.07	2.32	1.27	2.26	1.23
Partying?	2.31	1.62	2.13	1.33	2.16	1.40
What were your usual grades in high school?	3.78	1.46	3.42	1.35	3.50	1.38
How much individual attention did you receive from your high school teachers in class?	1.56	0.57	1.68	0.60	1.65	0.60
How much individual attention did you receive from you high school teachers after class?	2.10	0.53	2.12	0.67	2.12	0.64
How often did you come into social contact with people of an ethnic or racial background different from your own?	2.92	1.22	3.00	1.29	2.98	1.27
How adequate do you think your high school education was?	2.35	0.69	2.32	0.71	2.32	0.70
ability to lead a group discussion	2.06	0.85	2.33	0.96	2.27	0.95

school teachers in class?						
How much individual attention did you receive from you high school teachers after class?	2.10	0.53	2.12	0.67	2.12	0.64
How often did you come into social contact with people of an ethnic or racial background different from your own?	2.92	1.22	3.00	1.29	2.98	1.27
How adequate do you think your high school education was?	2.35	0.69	2.32	0.71	2.32	0.70
ability to lead a group discussion	2.06	0.85	2.33	0.96	2.27	0.95
solve problems creatively	1.73	0.89	2.06	0.96	1.99	0.95
make well-informed decisions	1.73	0.93	1.79	0.84	1.78	0.86
express your thoughts in oral communication	1.75	0.87	2.04	0.97	1.98	0.96
spend leisure time wisely	1.72	0.86	2.15	0.98	2.06	0.97
express your thoughts in writing	1.70	0.83	2.43	1.11	2.28	1.10
solve an algebra problem	1.88	0.90	2.18	1.07	2.12	1.05
discuss intelligently current world events	2.24	0.90	2.35	1.02	2.32	1.00
discuss intelligently national politics	2.36	0.83	2.65	1.06	2.59	1.02
use computers in completing school work	1.74	0.87	2.05	0.99	1.99	0.98
find information over the World Wide Web	1.78	0.84	2.16	1.02	2.08	1.00
use the library to gain information	1.58	0.87	2.06	0.99	1.96	0.98
work with others on school projects	1.63	0.89	1.84	0.88	1.80	0.88
Learning about a variety of topics	2.02	0.80	2.17	0.88	2.14	0.86
Getting a more enjoyable job	1.39	0.57	1.36	0.65	1.37	0.63
Making more money	1.42	0.66	1.46	0.70	1.45	0.69
bocoming an educated person	1.39	0.66	1.51	0.68	1.48	0.68
Becoming more cultured	1.97	0.95	2.25	1.02	2.19	1.01
Improving study skills	1.75	0.69	1.96	0.95	1.92	0.90
Preparing for graduate/professional school	2.16	1.16	2.44	1.21	2.38	1.20
learning about a specific topic	1.89	0.80	1.81	0.80	1.83	0.80
Making my parents happy	2.23	0.95	2.69	1.25	2.59	1.21
Developing social networks	2.11	0.91	2.35	1.05	2.30	1.02
finding a boyfriend/girlfriend/spouse	2.91	1.12	3.19	1.20	3.13	1.19
Keeping a boyfriend/girlfriend	2.88	1.26	3.09	1.24	3.05	1.25
Gaining a college degree	1.18	0.42	1.13	0.42	1.14	0.42
Developing intellectually	1.48	0.55	1.60	0.64	1.57	0.63
learning to live and interact with people	1.70	0.78	1.77	0.80	1.76	0.80
most important reason for going to college	58.94	8.70	57.93	8.76	58.14	8.75
best describes your attitude toward studying for your high school classes	4.34	1.41	4.28	1.27	4.29	1.30
Get along with others	1.85	0.71	2.11	0.84	2.06	0.82
Think critically	1.64	0.62	1.65	0.67	1.65	0.66
Respect the views of others	1.90	0.63	1.97	0.74	1.95	0.72
Develop close relationships with others	2.12	0.74	2.21	0.83	2.19	0.82
Be sensitive to the feelings of others	2.14	0.87	2.36	0.89	2.32	0.89
Be independent	1.63	0.63	1.57	0.75	1.59	0.73
Develop greater ability to choose moral and ethical behavior	1.92	0.81	2.01	0.84	1.99	0.83
Establish your identity	1.90	0.82	1.88	0.81	1.88	0.81
Develop social skills	1.75	0.76	1.86	0.71	1.84	0.72
Develp a meaningful philosophy of life	2.19	0.91	2.21	0.90	2.20	0.90
Develop leadership skills	1.74	0.66	1.78	0.73	1.77	0.72

Handle stress	1.97	0.82	2.05	0.91	2.04	0.89
Understan and appreciate people who come from cultures other than your own	2.13	0.83	2.09	0.85	2.10	0.84
Develop an expertise in a given subject area	1.52	0.62	1.37	0.58	1.40	0.59
Communicate with others more effectively	1.77	0.69	1.72	0.66	1.73	0.67
In an on campus job?	2.40	1.64	2.19	1.50	2.24	1.53
In an off campus job?	3.31	1.91	2.82	1.88	2.92	1.89
Studying outside of class	4.17	1.63	4.24	1.44	4.22	1.48
Using the library to find information	2.99	1.55	2.81	1.05	2.85	1.17
Meeting with your professors outside of class	2.13	0.65	2.09	0.69	2.10	0.68
Meeting with other students in a study group	2.48	1.15	2.40	1.01	2.42	1.04
At campus events such as ISU sports teams or sponsored speakers/concerts	2.65	1.68	2.67	1.29	2.67	1.38
Participating in student government	1.38	0.71	1.30	0.71	1.32	0.71
Participating in fraternity/sorority events	1.77	1.15	1.78	1.17	1.78	1.16
Participating in other campus organizations	2.05	0.80	2.12	1.04	2.11	1.00
Socializing with new friends made on campus	3.00	1.27	3.06	1.34	3.05	1.32
Socializing with friends made before coming to ISU	3.13	1.26	3.15	1.67	3.14	1.59
Exercising	2.73	1.39	2.87	1.20	2.84	1.24
Doing volunteer community service	1.50	0.66	1.45	0.63	1.46	0.63
Doing church work	1.42	0.53	1.44	0.75	1.44	0.71
what is the highest degree that you intend to attain?	3.72	1.18	3.58	0.94	3.61	1.00
Which area will be most difficult for you?	3.45	1.68	3.67	1.76	3.62	1.75
Your second most difficult academic area?	3.79	2.21	3.61	1.94	3.65	2.00
Your third most difficult academic area	4.03	2.12	4.11	2.27	4.09	2.24
What percent of your decision to attend ISU was you own?	9.20	1.57	9.14	1.66	9.15	1.64
Parents	2.36	0.88	2.46	0.96	2.44	0.94
Friends	2.22	0.79	2.47	0.86	2.42	0.85
What do you predict your overall gpa to be for the first semester?	1.72	0.74	1.68	0.65	1.69	0.67
Join a fraternity or sorority at ISU	2.48	1.02	2.57	1.04	2.55	1.03
Fail one or more classes	3.15	0.73	3.19	0.69	3.18	0.70
Get tutoring help in specific courses	1.87	0.70	1.92	0.76	1.91	0.74
Need extra time to complete your degree requirements	2.44	0.74	2.58	0.73	2.55	0.74
Graduate with honors	2.34	0.65	2.37	0.67	2.37	0.66
Transfer to another college before graduating	2.80	0.81	2.89	0.80	2.87	0.81
Drop out permanently	3.66	0.51	3.70	0.58	3.69	0.57
Be satisfied with your college	1.54	0.60	1.47	0.53	1.49	0.55
Be gainfully employed during the school year	1.81	0.69	1.91	0.74	1.89	0.73
have a car on campus during your first semester	1.58	0.82	1.66	0.95	1.65	0.93

APPENDIX I

Means and Standard Deviations for Retention and Not Retained Females

Predictor variable	<u>Not Retained</u>		<u>Retained</u>		<u>Total</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Compared to hometown, how big is Terre Haute?	2.20	1.30	2.18	1.27	2.18	1.27
Area you lived during high school?	2.19	1.02	2.17	1.03	2.17	1.03
# of Miles from home to Indiana State?	2.71	1.10	2.87	1.07	2.82	1.08
How big was your high school graduating class?	2.67	1.67	2.73	1.67	2.71	1.67
Traveled more the 100 miles from home	3.18	1.11	3.41	1.08	3.34	1.09
Traveled more than 1,000 miles from home	1.89	0.84	1.97	0.83	1.95	0.83
Traveled outside the country	1.16	0.38	1.22	0.53	1.20	0.49
When did you decide to attend college?	2.67	1.94	2.14	1.71	2.31	1.80
How long have parents been saving for your college education?	3.82	1.39	3.68	1.44	3.73	1.42
Mother's Occupation	4.30	2.01	4.45	1.95	4.40	1.97
father's occupation	5.05	1.61	5.04	1.64	5.04	1.63
Best estimate of family income last year	5.68	3.19	5.92	3.26	5.85	3.24
How many children do your parents have?	2.94	1.28	3.03	1.32	3.00	1.31
How many members of your immediate family are in college now?	1.23	0.47	1.30	0.66	1.28	0.60
How many of yor parents' children have attended ISU?	1.14	0.40	1.16	0.43	1.16	0.42
Father's ISU attendance	2.98	0.12	2.98	0.17	2.98	0.16
Mother's ISU attendance	2.98	0.12	2.97	0.20	2.98	0.18
Did a grandparent attend ISU?	2.00	0.00	1.97	0.18	1.98	0.15
How supportive do you feel your family is of your plans to enroll in college?	1.22	0.64	1.19	0.61	1.20	0.62
How supportive do you feel your family is of your plans to enroll in ISU?	1.37	0.78	1.34	0.72	1.35	0.74
# of friends from high school attending college this year	1.96	1.19	1.72	1.07	1.80	1.11
# of friends from high school attending ISU this year	2.99	0.87	2.98	0.85	2.98	0.86
How much time during your senior year did you spend Doing homework?	2.42	0.93	2.57	1.06	2.52	1.02
Socializing with friends?	3.97	1.57	3.73	1.46	3.81	1.50
Participating in school sponsored sports?	2.27	1.60	2.67	1.74	2.54	1.71
Working in a job for pay?	4.59	1.98	3.98	1.96	4.17	1.98
Doing volunteer work?	1.45	0.77	1.46	0.72	1.45	0.73
Exercising on your own time?	1.82	0.79	1.89	0.90	1.87	0.86
Partying?	2.10	1.29	1.82	0.99	1.91	1.10
What were your usual grades in high school?	3.50	1.38	2.89	1.38	3.08	1.41
How much individual attention did you receive from your high school teachers in class?	1.66	0.55	1.60	0.53	1.62	0.54
How much individual attention did you receive from you high school teachers after class?	2.08	0.70	1.95	0.64	1.99	0.66

How much individual attention did you receive from your high school teachers in class?	1.66	0.55	1.60	0.53	1.62	0.54
How much individual attention did you receive from you high school teachers after class?	2.08	0.70	1.95	0.64	1.99	0.66
How often did you come into social contact with people of an ethnic or racial background different from your own?	2.86	1.24	2.96	1.26	2.93	1.25
How adequate do you think your high school education was?	2.50	0.75	2.26	0.71	2.34	0.73
ability to lead a group discussion	2.35	1.02	2.33	0.97	2.33	0.98
solve problems creatively	2.37	0.87	2.21	0.93	2.26	0.91
make well-informed decisions	2.00	0.89	1.86	0.86	1.91	0.87
express your thoughts in oral communication	2.11	1.05	2.04	0.93	2.06	0.97
spend leisure time wisely	2.11	0.95	2.07	0.94	2.08	0.94
express your thoughts in writing	1.86	0.99	1.98	1.01	1.94	1.00
solve an algebra problem	2.53	1.06	2.31	1.09	2.38	1.08
discuss intelligently current world events	2.57	0.95	2.63	0.94	2.61	0.94
discuss intelligently national politics	2.82	1.00	2.82	1.04	2.82	1.03
use computers in completing school work	1.96	0.94	2.03	0.96	2.01	0.95
find information over the World Wide Web	2.28	1.04	2.38	1.04	2.34	1.04
use the library to gain information	1.93	0.91	1.82	0.87	1.86	0.88
work with others on school projects	1.65	0.78	1.61	0.78	1.62	0.78
Learning about a variety of topics	2.10	0.84	2.00	0.81	2.03	0.82
Getting a more enjoyable job	1.53	0.83	1.40	0.72	1.44	0.75
Making more money	1.59	0.83	1.61	0.79	1.60	0.80
bocoming an educated person	1.27	0.50	1.29	0.50	1.28	0.50
Becoming more cultured	1.86	0.85	1.90	0.91	1.89	0.89
Improving study skills	1.56	0.63	1.70	0.72	1.66	0.70
Preparing for graduate/professional school	1.98	1.12	2.04	1.04	2.02	1.06
learning about a specific topic	1.73	0.78	1.78	0.83	1.76	0.82
Making my parents happy	2.46	1.18	2.55	1.23	2.52	1.22
Developing social networks	2.12	0.92	2.15	0.94	2.14	0.93
finding a boyfriend/girlfriend/spouse	3.67	1.07	3.60	1.12	3.62	1.10
Keeping a boyfriend/girlfriend	3.54	1.24	3.57	1.20	3.56	1.21
Gaining a college degree	1.07	0.26	1.10	0.32	1.09	0.30
Developing intellectually	1.37	0.55	1.35	0.52	1.36	0.53
learning to live and interact with people	1.51	0.71	1.47	0.73	1.48	0.73
most important reason for going to college	58.8	7.99	59.0	8.90	59.0	8.61
	7		7		1	
best describes your attitude toward studying for your high school classes	4.01	1.21	3.85	1.17	3.90	1.18
Get along with others	2.27	0.87	2.06	0.83	2.13	0.85
Think critically	1.58	0.68	1.51	0.66	1.53	0.67
Respect the views of others	1.88	0.75	1.71	0.69	1.76	0.72
Develop close relationships with others	2.16	0.86	2.01	0.78	2.06	0.81
Be sensitive to the feelings of others	2.22	1.01	2.14	0.83	2.16	0.89
Be independent	1.38	0.60	1.26	0.54	1.30	0.56
Develop greater ability to choose moral and ethical behavior	1.83	0.84	1.71	0.74	1.75	0.77
Establish your identity	1.72	0.86	1.56	0.66	1.61	0.74
Develop social skills	1.70	0.73	1.65	0.67	1.67	0.69

Develop a meaningful philosophy of life	2.06	0.89	1.96	0.82	1.99	0.84
Develop leadership skills	1.77	0.75	1.59	0.63	1.65	0.68
Handle stress	2.13	0.97	1.92	0.85	1.99	0.89
Understan and appreciate people who come from cultures other than your own	1.75	0.75	1.79	0.73	1.78	0.74
Develop an expertise in a given subject area	1.43	0.66	1.38	0.60	1.40	0.62
Communicate with others more effectively	1.62	0.64	1.56	0.60	1.58	0.61
In an on campus job?	2.33	1.60	2.35	1.46	2.35	1.50
In an off campus job?	3.13	2.00	2.69	1.84	2.83	1.90
Studying outside of class	4.23	1.38	4.21	1.46	4.22	1.43
Using the library to find information	2.81	1.07	2.84	1.03	2.83	1.04
Meeting with your professors outside of class	2.07	0.62	2.07	0.59	2.07	0.60
Meeting with other students in a study group	2.38	1.02	2.42	0.83	2.41	0.89
At campus events such as ISU sports teams or sponsored speakers/concerts	2.49	1.26	2.38	0.96	2.41	1.06
Participating in student government	1.35	0.82	1.39	0.65	1.38	0.71
Participating in fraternity/sorority events	1.65	1.04	1.64	1.04	1.64	1.04
Participating in other campus organizations	2.19	0.92	2.18	0.87	2.18	0.89
Socializing with new friends made on campus	2.94	1.25	2.93	1.22	2.94	1.23
Socializing with friends made before coming to ISU	3.00	1.26	2.90	1.37	2.93	1.34
Exercising	2.45	1.15	2.51	1.08	2.49	1.10
Doing volunteer community service	1.55	0.74	1.65	0.63	1.62	0.67
Doing church work	1.44	0.83	1.59	0.70	1.54	0.75
what is the highest degree that you intend to attain?	3.44	0.90	3.57	0.87	3.53	0.88
Which area will be most difficult for you?	4.09	1.86	4.05	1.85	4.06	1.85
Your second most difficult academic area?	3.84	2.06	4.09	2.13	4.01	2.11
Your third most difficult academic area	4.49	2.37	4.62	2.40	4.58	2.39
What percent of your decision to attend ISU was you own?	9.01	1.90	8.96	1.81	8.97	1.84
Parents	2.26	1.01	2.20	0.94	2.22	0.96
Friends	2.48	0.94	2.45	0.92	2.46	0.92
What do you predict your overall gpa to be for the first semester?	1.84	0.71	1.65	0.67	1.71	0.69
Join a fraternity or sorority at ISU	2.70	1.05	2.57	0.93	2.61	0.98
Fail one or more classes	3.14	0.67	3.32	0.66	3.26	0.67
Get tutoring help in specific courses	1.70	0.59	1.83	0.66	1.79	0.64
Need extra time to complete your degree requirements	2.60	0.65	2.56	0.75	2.57	0.72
Graduate with honors	2.46	0.76	2.30	0.73	2.35	0.75
Transfer to another college before graduating	2.89	0.85	2.98	0.80	2.96	0.81
Drop out permanently	3.74	0.51	3.77	0.49	3.76	0.50
Be satisfied with your college	1.37	0.46	1.43	0.57	1.41	0.54
Be gainfully employed during the school year	1.66	0.64	1.79	0.70	1.75	0.68
have a car on campus during your first semester	1.62	0.94	1.75	1.05	1.71	1.02

APPENDIX I

How much individual attention did you receive from your high school teachers in class?	1.66	0.55	1.60	0.53	1.62	0.54
How much individual attention did you receive from you high school teachers after class?	2.08	0.70	1.95	0.64	1.99	0.66
How often did you come into social contact with people of an ethnic or racial background different from your own?	2.86	1.24	2.96	1.26	2.93	1.25
How adequate do you think your high school education was?	2.50	0.75	2.26	0.71	2.34	0.73
ability to lead a group discussion	2.35	1.02	2.33	0.97	2.33	0.98
solve problems creatively	2.37	0.87	2.21	0.93	2.26	0.91
make well-informed decisions	2.00	0.89	1.86	0.86	1.91	0.87
express your thoughts in oral communication	2.11	1.05	2.04	0.93	2.06	0.97
spend leisure time wisely	2.11	0.95	2.07	0.94	2.08	0.94
express your thoughts in writing	1.86	0.99	1.98	1.01	1.94	1.00
solve an algebra problem	2.53	1.06	2.31	1.09	2.38	1.08
discuss intelligently current world events	2.57	0.95	2.63	0.94	2.61	0.94
discuss intelligently national politics	2.82	1.00	2.82	1.04	2.82	1.03
use computers in completing school work	1.96	0.94	2.03	0.96	2.01	0.95
find information over the World Wide Web	2.28	1.04	2.38	1.04	2.34	1.04
use the library to gain information	1.93	0.91	1.82	0.87	1.86	0.88
work with others on school projects	1.65	0.78	1.61	0.78	1.62	0.78
Learning about a variety of topics	2.10	0.84	2.00	0.81	2.03	0.82
Getting a more enjoyable job	1.53	0.83	1.40	0.72	1.44	0.75
Making more money	1.59	0.83	1.61	0.79	1.60	0.80
bocoming an educated person	1.27	0.50	1.29	0.50	1.28	0.50
Becoming more cultured	1.86	0.85	1.90	0.91	1.89	0.89
Improving study skills	1.56	0.63	1.70	0.72	1.66	0.70
Preparing for graduate/professional school	1.98	1.12	2.04	1.04	2.02	1.06
learning about a specific topic	1.73	0.78	1.78	0.83	1.76	0.82
Making my parents happy	2.46	1.18	2.55	1.23	2.52	1.22
Developing social networks	2.12	0.92	2.15	0.94	2.14	0.93
finding a boyfriend/girlfriend/spouse	3.67	1.07	3.60	1.12	3.62	1.10
Keeping a boyfriend/girlfriend	3.54	1.24	3.57	1.20	3.56	1.21
Gaining a college degree	1.07	0.26	1.10	0.32	1.09	0.30
Developing intellectually	1.37	0.55	1.35	0.52	1.36	0.53
learning to live and interact with people	1.51	0.71	1.47	0.73	1.48	0.73
most important reason for going to college	58.8	7.99	59.0	8.90	59.0	8.61
	7		7		1	
best describes your attitude toward studying for your high school classes	4.01	1.21	3.85	1.17	3.90	1.18
Get along with others	2.27	0.87	2.06	0.83	2.13	0.85
Think critically	1.58	0.68	1.51	0.66	1.53	0.67
Respect the views of others	1.88	0.75	1.71	0.69	1.76	0.72
Develop close relationships with others	2.16	0.86	2.01	0.78	2.06	0.81
Be sensitive to the feelings of others	2.22	1.01	2.14	0.83	2.16	0.89
Be independent	1.38	0.60	1.26	0.54	1.30	0.56
Develop greater ability to choose moral and ethical behavior	1.83	0.84	1.71	0.74	1.75	0.77
Establish your identity	1.72	0.86	1.56	0.66	1.61	0.74
Develop social skills	1.70	0.73	1.65	0.67	1.67	0.69

Significant Means and Standard Deviations of Predictor Variables as a function of Retention for Females

Predictor variable	Not Retained		Retained		Total	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Compared to hometown, how big is Terre Haute?	2.20	1.30	2.18	1.27	2.18	1.27
Area you lived during high school?	2.19	1.02	2.17	1.03	2.17	1.03
# of Miles from home to Indiana State?	2.71	1.10	2.87	1.07	2.82	1.08
How big was your high school graduating class?	2.67	1.67	2.73	1.67	2.71	1.67
Traveled more the 100 miles from home	3.18	1.11	3.41	1.08	3.34	1.09
Traveled more than 1,000 miles from home	1.89	0.84	1.97	0.83	1.95	0.83
Traveled outside the country	1.16	0.38	1.22	0.53	1.20	0.49
When did you decide to attend college?	2.67	1.94	2.14	1.71	2.31	1.80
How long have parents been saving for your college education?	3.82	1.39	3.68	1.44	3.73	1.42
Mother's Occupation	4.30	2.01	4.45	1.95	4.40	1.97
father's occupation	5.05	1.61	5.04	1.64	5.04	1.63
Best estimate of family income last year	5.68	3.19	5.92	3.26	5.85	3.24
How many children do your parents have?	2.94	1.28	3.03	1.32	3.00	1.31
How many members of your immediate family are in college now?	1.23	0.47	1.30	0.66	1.28	0.60
How many of yor parents' children have attended ISU?	1.14	0.40	1.16	0.43	1.16	0.42
Father's ISU attendance	2.98	0.12	2.98	0.17	2.98	0.16
Mother's ISU attendance	2.98	0.12	2.97	0.20	2.98	0.18
Did a grandparent attend ISU?	2.00	0.00	1.97	0.18	1.98	0.15
How supportive do you feel your family is of your plans to enroll in college?	1.22	0.64	1.19	0.61	1.20	0.62
How supportive do you feel your family is of your plans to enroll in ISU?	1.37	0.78	1.34	0.72	1.35	0.74
# of friends from high school attending college this year	1.96	1.19	1.72	1.07	1.80	1.11
# of friends from high school attending ISU this year	2.99	0.87	2.98	0.85	2.98	0.86
How much time during your senior year did you spend Doing homework?	2.42	0.93	2.57	1.06	2.52	1.02
Socializing with friends?	3.97	1.57	3.73	1.46	3.81	1.50
Participating in school sponsored sports?	2.27	1.60	2.67	1.74	2.54	1.71
Working in a job for pay?	4.59	1.98	3.98	1.96	4.17	1.98
Doing volunteer work?	1.45	0.77	1.46	0.72	1.45	0.73
Exercising on your own time?	1.82	0.79	1.89	0.90	1.87	0.86
Partying?	2.10	1.29	1.82	0.99	1.91	1.10
What were your usual grades in high school?	3.50	1.38	2.89	1.38	3.08	1.41

Develop a meaningful philosophy of life	2.06	0.89	1.96	0.82	1.99	0.84
Develop leadership skills	1.77	0.75	1.59	0.63	1.65	0.68
Handle stress	2.13	0.97	1.92	0.85	1.99	0.89
Understand and appreciate people who come from cultures other than your own	1.75	0.75	1.79	0.73	1.78	0.74
Develop an expertise in a given subject area	1.43	0.66	1.38	0.60	1.40	0.62
Communicate with others more effectively	1.62	0.64	1.56	0.60	1.58	0.61
In an on campus job?	2.33	1.60	2.35	1.46	2.35	1.50
In an off campus job?	3.13	2.00	2.69	1.84	2.83	1.90
Studying outside of class	4.23	1.38	4.21	1.46	4.22	1.43
Using the library to find information	2.81	1.07	2.84	1.03	2.83	1.04
Meeting with your professors outside of class	2.07	0.62	2.07	0.59	2.07	0.60
Meeting with other students in a study group	2.38	1.02	2.42	0.83	2.41	0.89
At campus events such as ISU sports teams or sponsored speakers/concerts	2.49	1.26	2.38	0.96	2.41	1.06
Participating in student government	1.35	0.82	1.39	0.65	1.38	0.71
Participating in fraternity/sorority events	1.65	1.04	1.64	1.04	1.64	1.04
Participating in other campus organizations	2.19	0.92	2.18	0.87	2.18	0.89
Socializing with new friends made on campus	2.94	1.25	2.93	1.22	2.94	1.23
Socializing with friends made before coming to ISU	3.00	1.26	2.90	1.37	2.93	1.34
Exercising	2.45	1.15	2.51	1.08	2.49	1.10
Doing volunteer community service	1.55	0.74	1.65	0.63	1.62	0.67
Doing church work	1.44	0.83	1.59	0.70	1.54	0.75
what is the highest degree that you intend to attain?	3.44	0.90	3.57	0.87	3.53	0.88
Which area will be most difficult for you?	4.09	1.86	4.05	1.85	4.06	1.85
Your second most difficult academic area?	3.84	2.06	4.09	2.13	4.01	2.11
Your third most difficult academic area	4.49	2.37	4.62	2.40	4.58	2.39
What percent of your decision to attend ISU was your own?	9.01	1.90	8.96	1.81	8.97	1.84
Parents	2.26	1.01	2.20	0.94	2.22	0.96
Friends	2.48	0.94	2.45	0.92	2.46	0.92
What do you predict your overall gpa to be for the first semester?	1.84	0.71	1.65	0.67	1.71	0.69
Join a fraternity or sorority at ISU	2.70	1.05	2.57	0.93	2.61	0.98
Fail one or more classes	3.14	0.67	3.32	0.66	3.26	0.67
Get tutoring help in specific courses	1.70	0.59	1.83	0.66	1.79	0.64
Need extra time to complete your degree requirements	2.60	0.65	2.56	0.75	2.57	0.72
Graduate with honors	2.46	0.76	2.30	0.73	2.35	0.75
Transfer to another college before graduating	2.89	0.85	2.98	0.80	2.96	0.81
Drop out permanently	3.74	0.51	3.77	0.49	3.76	0.50
Be satisfied with your college	1.37	0.46	1.43	0.57	1.41	0.54
Be gainfully employed during the school year	1.66	0.64	1.79	0.70	1.75	0.68
have a car on campus during your first semester	1.62	0.94	1.75	1.05	1.71	1.02