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An examination of college factors used by business students who chose to attend a small Midwestern private college

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An examination of college selection factors used by business students who

chose to attend a small Midwestern private college

by

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ABSTRACT

Many college systems are facing a recruiting environment where the individual driving forces add up to more than their individual sum, creating a highly challenging situation. Some of the driving forces creating this recruiting challenge are: decreasing number of high school graduates, more educational offerings, a tightening of the credit markets, and changing college expectations of the "millennial" generation. This quantitative research study focused on students who chose to major in business and their college decision-making process to attend a small Midwest private college. The students' responses to the Cooperative Institutional Research Program (CIRP) freshman survey were used to identify possible college choice factors used in business students' decision-making processes to attend this particular college.

The results suggest that factors business students used as their major college choice factors for attending this small Midwestern private college were: (a) getting a better job; (b) making more money; and (c) obtaining training for a specific career. In addition, four variables were identified that the students used in their decision-making process: (1) the college's good academic reputation: (2) the offer of financial assistance; (3) graduates get good jobs; and (4) a positive campus visit. The findings will be helpful in identifying processes and/or tools used in this college's enrollment management system.

CHAPTER 1. INTRODUCTION

*All who have meditated on the art of governing mankind have been
convinced that the fate of empires depend on the education of youth.*
−Aristotle−

Background of the Study

The private college sector is faced with the constant challenge of identifying the local

community and global market needs for program development, student services, and many

other resources. The need to recruit college students into career opportunities that will add to

our economic and social structures is imperative. This need may eventually determine the

continued existence of certain academic programs and higher educational institutions. Levin

(1991) delineated the relationship between choice and market economy, stating that

"…choice is one of the major tenets of both a market economy and democratic society" (p.

137). In a market economy, choice means competition and competence, which may lead to

the development of individual potential, economic productivity and the performance of

important social roles. This concept is supported by research conducted by Pascarella and

Terenzini (1991) that seems to show a direct impact on career opportunities and rewards with

the choice of major and college. The choice of a college major can be one of the most

important decisions a student makes, and impacts a wide variety of social and economic

elements. In today's college structure, several different faculty and staff groups are involved

in recruiting, advising, and educating students. Therefore, more information is needed on

who these students are and what are the major influences on their academic and career

decisions.

Statement of the Problem

Currently, many of our colleges are facing a wide array of elements that are influencing their abilities to efficiently and effectively recruit and advise students. The first driving force creating this challenge is the decreasing number of high school graduates. The National Center of Educational Statistics (2007) projected that the number of public high school graduates will decrease 4% in the Midwest region in the next 10 years. The competition for these high-school graduates in the Midwest has also increased. Many of the community colleges in the region are offering a wide variety of new degree options that were formerly offered only at the private and public four-year institutions. According to the Sloan Consortium (2006) report, on-line course offerings in the Midwest have increased more than 36% from the previous year. Added to the supply and demand equation are new economic concerns about the tightening of the college student loan markets and fear of recession. The May 16, 2008 edition of the *Chronicle of Higher Education* included several articles addressing the change in the college student loan structure and, worries and concerns about parents' and students' ability to pay tuition bills. Another driving force is the change in expectations of the "millennial" college student. According to DeBard (2004), this generation of students has greater career and personal aspirations, is more confident in their abilities, and feels higher education should be more customized regarding their individual needs and goals. These driving forces have resulted in the overwhelming need by recruitment staff and marketing managers to reassess the factors that influence future college students in the decision-making process to select a higher education institution.

Weinstein (2004) purported that, in a fast changing and increasingly hypercompetitive market, successful 21st century companies will have to develop market

segmentation strategies to survive and thrive. Superior quality goods and services are no longer sufficient; therefore, organizations need to focus on satisfying discriminating customers (Weinstein). Can higher education institutions use segmentation-based marketing, a strategy whereby an organization divides the total market into groups of people who have relatively similar product needs (Ferrell, Hirt, & Ferrell, 2009, p. 559), to develop recruiting and advising strategies to create value?

Purpose of the Study

The Midwest small private college used in this study is currently experiencing many of the following market challenges: decreased enrollment, increased competition, decreased number of high school graduates in the region, tightening of the student loan market, and changing student needs and expectations. Table 1.1 provides a snapshot of the last few years of fulltime main campus enrollment.

Table 1.1. College enrollment totals

School (by major)	Fall				
	2004	2005	2006	2007	2008
Business	292	290	245	215	189
Communication & Arts	207	205	185	161	148
Education	253	223	227	225	213
Science	222	213	225	200	203
Social Science, Philosophy & Religion	220	230	197	173	163
Distributive	4	5	3	6	2
Undecided	44	28	33	37	33
Unknown		4	3	3	5
TOTAL	1,242	1,198	1118	1020	956

Many researchers agree that a student's choice of college is an issue of decision-making. To ascertain how students acquire and use information in this important decision-making process is vital to academic success and economic growth. The purpose of this study was to determine if there are patterns or trends related to decision-making by first-time, fulltime college students who have expressed an interest to attend and major in Business at small Midwest private college. This research also explored relationships that could be used to identify market segmentation variables by academic major to enable educators and administrators of this private college to create tools to facilitate students in their decision-making process.

Research Questions

This study was guided by the following questions:

1. What are the background (demographic and geographic) characteristics of students who self-reported as business majors?

2. What are the reasons that business majors give for attending college?

3. Who and/or what influenced business majors' choice of attending this particular college?

4. Are there mean differences between the college major groups of business, science, and education in variables influencing their decision-making process?

5. To what extent do the economic and social variables predict students majoring in business or non-business, science and education?

Theoretical Framework

The foundational theoretical framework applied in this study is an integrated marketing model that incorporates college choice, academic major, and market factors. The conceptual framework for this study was designed to create a predictive model of segmentation variables by academic major.

Kotler and Armstrong (2006) provided the following marketing model: (1) Understanding the marketplace and customer needs and wants; (2) Design a customer-driven marketing strategy; (3) Construct a marketing program that delivers superior value; (4) Build profitable relationships and create customer delight; and (5) Capture value from customers to create profits and customer quality. This study focused on the need to understand the marketplace, more specifically the variables students use to choose to attend a small, Midwest private college. Research in the areas of college choice, academic major, and market conditions was used to provide the theoretical framework and aid in determining the variables that were used in this study.

Research studies on college choice have primarily been categorized according to four models of college choice (Hossler et al., 1989): econometrics, sociological, consumer, and combined. The econometrics model is derived from the human capital theory (Schultz, 1963; Thurow, 1972), which views college choice as a result of an investment decision in the hopes of a higher rate of return on future earning and social capital. The sociological model focuses on the factors of socioeconomic status and personal predispositions, such as family background, parental education, educational aspirations, and preparation for attaining a higher socioeconomic status (Jackson, 1982; Litten, 1982). The consumer model views college choice as a value added, decision-making process. This model considers the cost and

risk of alternatives of attending college or not attending college, and which college will provide the most benefits (Kotler, 1995).

The combined model takes a multi-stage and multi-discipline approach rather than a single decision-making process (Hossler, Braxton, & Coopersmith, 1989), which includes predispositions, search, and choice. McDonough, Antonio, Walpole, and Perez (1998) used education, business, marketing, and economic theories to examine the college choice process. Chapman (1981) suggested that student college choice is influenced by a set of student characteristics (level of educational aspiration, high school performance, socioeconomic status and aptitude) combined with a series of external influences (influences of significant people, general characteristics of an institution, and an institution's effort to communicate with prospective students). Research by Jackson (1982) concluded that economic variables, such as future income and costs associated with attending college, impacts the college choice process more than social factors. The Expanded Model of College Choice (Litten, 1982) first introduced the "funnel" concept, wherein the number of students decreases through the decision-making process. A recent conceptual model proposed by Perna (2006) assumes that an individual's college-choice decisions are shaped by four contextual layers: (1) the individual's habitus; (2) school and community context; (3) the higher education context; and (4) the broader social, economic, and policy context. Models that impacted the current study will be discussed in greater detail in Chapter 2.

Significance of the Study

Today's first-year (freshmen) college students are being asked to make a series of important choices that will have a major impact on their future success. The starting point

for many of these students is to identify their academic major. It is essential that students have a better understanding of the reasons, influencers and/or college factors in this decision-making process. By identifying the patterns and/or trends, faculty and staff can customize student resources, tools, and recruiting techniques to enhance student outcomes. This information can also be used to build better marketing and brand identifiers to maximize perceived value. It can also be used to help strengthen our student services and career development functions. One of the most important decisions students will make that will directly impact their social and economic status in today's workplace is their choice of an academic major. Thus, institutions should continue to evaluate their models, methods, and technique to support this key decision-making process.

Definition of Terms

The following terms were defined for use in this study:

Benefit segmentation: Dividing a market into groups according to the different benefits that consumers seek form the product (Kotler & Armstrong, 2006, p. 202).

Behavioral segmentation: Dividing a market into groups based on consumer knowledge, attitudes, use, or response to a product (Kotler & Armstrong, 2006, p. 200).

Demographic segmentation: Dividing a market into groups based on variables such as age, sex, family size, family life cycle, income, occupation, education, religion, race, and nationality (Kotler & Armstrong, 2006, p. 196).

Economics: The social science that studies the *choices* that individuals, businesses, governments, and entire societies make as they cope with *scarcity* and the *incentives* that influence and reconcile those choices (Parkin, 2010, p. 2).

Ethical issue: An identifiable problem, situation, or opportunity that requires a person to choose from among several actions that may be evaluated as right or wrong, ethical or unethical (Ferrell, Hirt, & Ferrell, 2009, p. 555).

Geographic segmentation: Dividing a market into different geographic units such as nations, states, regions, counties, cities, or neighborhoods (Kotler & Armstrong, 2006, p. 195).

Market: A group of people who have a need, purchasing power, and the desire and authority to spend money on goods, services, and ideas (Ferrell, Hirt, & Ferrell, 2009, p. 558).

Market segment: A collection of individuals, groups, or organizations who share one or more characteristics and thus have relatively similar product needs and desires (Ferrell et al., p. 558).

Market segmentation: A strategy whereby a firm divides the total market into groups of people who have relatively similar product needs (Ferrell et al., 2009, p. 559).

Marketing: The process by which organizations create value for customers and build strong customer relationships in order to capture value from customers in return (Kotler & Armstrong, 2006, p. 5).

Millennial student: A student born in 1982 to approximately 2005, who is now age 28 or younger (Howe & Strauss, 2007).

Psychographic segmentation: Dividing a market into different groups based on social class, lifestyle, or personality characteristics (Kotler & Armstrong, 2006, p. 198).

Risk: The possibility that the actual return received on an asset will be substantially different from the expected return (Abel & Bernanke, 2005, p.253).

Utility: The benefit or satisfaction that a person gets from the consumption of a good or service (Parkin, 2010, p. 182).

Summary

This study attempted to combine and build upon prior research to expand the knowledge base of a small private Midwestern university's entering, first-time, fulltime college student. A secondary purpose was to provide a student profile that can be used to develop recruiting and student support strategies.

Chapter 2 provides a review of related research on the complex decision-making process of college choice by students, and includes a discussion of the theoretical and conceptual framework that was used to explore the student decision-making process of attending this small private university. Chapter 3 explains the setting, methodology to carry out the study, population and sample, survey instrument, and data analysis procedures used in this study. Chapter 4 provides the results of each of the statistical tools used to explore the research questions, and a summary of the findings.

Chapter 5 begins with the researcher's conclusions from the study followed by the implications of the findings for the small Midwestern university, its recruiters, advisors, policy makers, and students. The chapter concludes with recommendations for future research for this institution as well as higher education.

CHAPTER 2. LITERATURE REVIEW

*Your ability to learn faster than your competition
is your only sustainable competitive advantage.*
−Arie De Gues−

This chapter provides a literature map and outline of related research on the complex decision-making process of college choice by students. It begins with an overview of the diverse views and research methodologies used to explore the college choice process. A summary of additional research in the areas of the private and independent college systems, college choice models, choice of college major, market conditions, and the millennial students are provided to support the use of a marketing model to explore the research study. The chapter concludes with a discussion of the theoretical and conceptual framework that is used to explore the student decision-making process of attending this small private university.

Introduction

In the late 1970s and early 1980s, colleges were faced with a declining pool of traditional age college students, increased competition, growing demand for state and federal financial aid and a decline in public confidence concerning the value of higher education (Hossler, Braxton, & Coopersmith, 1989). These factors resulted in an increased focus on college choice in higher education research. Research on student choice of a college is diverse in both methodology and focus. Studies on college choice tend to focus on several broad categories: (a) students' predispositions, such as high school GPA, socioeconomic status, parental income, educational aspiration, and others (Alba & Lavin, 1981); (b) institutional attributes, such as geographic location, distance from home, size, program of

study (Chapman, 1981); and (c) economic factors, such as financial aid, tuition, career services (Welki & Navartil, 1987). Several research studies have also indicated that the academic major significantly influences a student to attend a particular institution; therefore, the literature on college choice was also reviewed.

Research on student choice of major has generally concentrated on either economic forces or social forces. According to Pascarella and Terenzini (1991), the focus on economic forces based on level or years of education has superseded an additionally important aspect of education—content or subject matter, specifically identifying the subject matter in the form of academic major in college and how it affects occupational opportunities and rewards. On the social side of the equation, gender and personality tend to be the main focus. Simpson (2001) researched racial differences as a factor influencing academic major. A significant amount of research using Holland's theory of personality types and environmental factors that influence college students' decision-making processes. As shown in Figure 2.1, the long- and short-term trends of a college student's choice of academic major comprise a complex and multi-layered process with many diverse views.
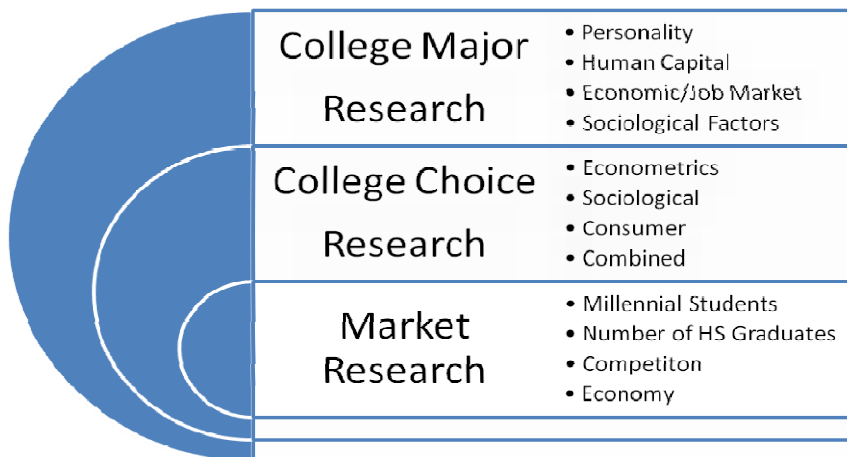

Figure 2.1. Literature map

Private and Independent College Sector

According to the National Association of Independent Colleges and Universities (2008) there are 1,600 private, nonprofit institutions nationwide. Half of these nonprofit colleges and universities in the United State are private and enroll approximately 3.4 million students. The first independent college in Iowa was founded in 1839. Over the years, private colleges have established an enviable record of excellence in teaching and nurturing students, advancing knowledge and serving their communities and the world. The Midwest private college in this study was founded in 1891 by Presbyterians who wanted to establish a church-related college to help meet the community's educational needs. The community members and early founders had the vision of creating the "Yale of the Midwest" that would provide educational opportunities to enhance the growth of the Midwest region. This small, private Midwest college has a long history of survival despite harsh economic times, wars, and often a churchly indifference to its success and growth (Cumberland, 1991).

Choice of College Major

Research on student choice of major has concentrated on either economic or social forces. Leading researchers on the economic influencers, Pascarella and Terenzini (1991) commented that this focus on level or years of education has superseded an additionally important aspect of education—content, or subject matter. Their research revealed that subject matter, specifically in the form of academic major in college and influences, affects occupational opportunities and rewards. Gender and personality tend to be the main focus on the social side of the equation. Simpson (2001) examined racial differences on factors that influence academic majors. A significant amount of research has used Holland's theory of

personality types and environmental factors in college students' decision-making process. Long- and short-term trends of college students' choice of academic major are a complex and multi-layered process, with many diverse views.

In a market economy, choice means competition and competence, which may lead to the development of individual potential, economic productivity, and the performance of important social roles. This is supported by research conducted by Pascarella and Terenzini (1991), which indicates a direct impact on career opportunities and rewards with the choice of major. Research conducted by Berger (1988) revealed that students are likely to choose majors offering greater streams of future earnings rather than majors with higher beginning earnings at the time of the choice. The choice of a college major can be one of the most important decisions a student makes, impacting a wide variety of social and economic elements.

There is also a body of literature that explores gender differences and selection of an academic major. Montgomery's (2004) study at a private, highly selective, liberal arts college revealed that male college students' decisions focused on future earnings and less on personal interest, whereas female college students chose their major without concern for future earnings potential because many planned to assume traditional roles as wife and mother with a gainfully employed spouse after graduation.

College Choice

Research on student college choice has utilized many diverse theoretical perspectives, methods, models, and/or assumptions to solve practical problems of the colleges and universities identified in the study, which may not be transferable to other institutions.

However, many of the theoretical frameworks and models share the following common theoretically-based approaches: econometrics or economic models, sociological or status-attainment perspectives, and consumer behavior or information-processing models. Much of the recent research has used a combined model approach to the complex decision-making process of student college choice.

The econometrics model is derived from human capital theory (Schultz, 1963; Thurow, 1972) which views college choice as a result of an investment decision in the hopes of a higher rate of return on future earning and social capital. The foundation of the econometric or economic models is the idea that a student maximizes a utility most often using a cost-benefit analysis methodology. Cohn (1979) purported that economics is concerned with the study of the production and distribution of all scarce resources that individuals desire such as income, wealth, and commodities.

The sociological model focuses on the factors of socioeconomic status and personal predispositions such as family background, parental education, educational aspirations, and preparation for attaining a higher socioeconomic status (Jackson, 1982; Litten, 1982). The consumer model views college choice as a value added decision-making process. This model looks at the consideration of cost and risk of the alternatives of attending college or not attending college and which college will provide the most benefits.

The combined model takes a multi-stage and multi-discipline approach rather than a single decision-making process (Hossler, Braxton, & Coopersmith, 1989), which includes predispositions, search, and choice. McDonough, Antonio, Walpole, and Perez (1998) used education, business, marketing, and economic theories to examine the college choice process. The most often cited combined model on choice is the Three-Stage Model presented by

Hossler and Gallagher (1987). The first (phase one) of the three stages is predisposition phase, which is defined as the developmental phrase when students determine whether or not they would like to continue their formal education past high school. The influential factors in phase one are identified as student characteristics, significant others, educational activities, and school characteristics. Phase two of the model is the search stage when students begin to gather data and compare information about selected colleges and universities, resulting in what Hossler and Gallagher refer to as the "choice set" (p. 210). The final stage (phase three) of the model is the choice stage, when the choice set is used along with the college's courtship activities to determine whether the student will attend this particular college. The Hossler and Gallagher model is one of the first to divide the influential factors into two sub-sets—individual factors and organizational factors.

Another commonly cited model is the Expanded Model of College Choice (Litten, 1982) which expanded the work and model provided by Chapman (1981). Litten (1982) identified the complexity of the educational decision making process and introduced the "funnel concept" which is widely used in admission and enrollment management literature. The funnel concept illustrates that the number of students decreases as they advance through the decision-making process, creating a much greater need to understand the elements in each stage. The first stage of the model is the predisposition stage beginning with what Litten called the college aspirations component of the student's desire to attend college. In this stage, Litten identified a variety of factors that influence the student aspirations: background characteristics, high school attributes, and environment (occupational, economic and cultural structures). As the desire to attend college increases, students begin to think about their ability to pay for college tuition, and college loans and financial aid are considered. Each

student then advances to the exploratory stage, which consists of two phases: decision to start process and the action of gathering information. During this stage the college's actions (recruitment activities and academic/admission policies), influence of others, media, and college characteristics begin to have influence on the decision-making process. The final phase occurs when the student decides to enroll in a particular college or university.

One of the most recent conceptual models for examining student college choice is derived from research conducted by Perna (2005). At the center of Perna's conceptual model is the human capital investment model in which decisions on college choice are based on a comparison of the expected benefits with the expected costs. However, unlike traditional human capital models, the conceptual model revealed that calculations of the expected costs and earnings are nested within several layers. The model assumes that an individual's college choice decisions are shaped by four contextual layers: (1) the individual's habitus - consisting of demographic characteristics, cultural capital, and social capital; (2) school and community context – consisting of availability of resources, types of resources, and structural supports/barriers; (3) higher education context – consisting of marketing and recruitment, location, and institutional characteristics; and (4) social, economic, and policy context – consisting of demographic characteristics, economic characteristics, and public policy characteristics.

Marketing

Kotler and Armstrong (2006, p. 5) defined marketing as the process by which companies create value for customers and build a strong relationship in order to capture value from customers. Litten (1980) defined marketing as a frame of mind in which questions are

asked about the optimum relationship between an organization and its environment, or parts of its environment, and action is taken that is informed by the answers to those questions. The question for college administrators to ask is: Can business marketing models and/or tools be used effectively in higher education?

Litten (1980) remarked that higher education has long been engaged in the development of services and the promotional activities which, in business, are called "Marketing" (p. 41). Litten further noted that we have promoted our institutions' services and interests through our public relations, student recruiting, fund-raising, and lobbying efforts; we have changed and developed our institutions to make them more attractive to a variety of publics. Therefore, collegiate or university administrators should take the same path as business leaders and make research-based determinations about why students choose a particular school. They may find, to their surprise, that the academic programs are not at the top of the list in students' decision processes. At the top may be such things as social life, geographic location or an urban or rural environment (Fram, 1973, p. 62).

Market Conditions

The long-term success of colleges and universities today is accomplished by being able to create value for students and building strong relationships with communities, businesses, and government agencies to provide a solid return on the student's investment in education which, by definition, is marketing. Kotler and Armstrong (2006) presented a simple model of the marketing process that outlines the following key elements: (a) understand the marketplace and customer needs and wants; (b) design a customer-driven marketing plan; (c) construct a marketing program that delivers superior value; (d) build

profitable relationships and create customer delight; and (e) capture value from customers to create profits and customer quality.

The National Center of Educational Statistics (2007) projected that the number of public high school graduates will decrease by 4% in the Midwest region during the next 10 years. Consequently, the competition for these high-school graduates in the Midwest is increasing. Many of the community colleges in the region are offering a new and wider variety of degree options that were formerly offered only at the private and public four-year institutions. According to the Sloan Consortium (2006) report, on-line course offerings in the Midwest have increased more than 36% from the previous year. Adding to the supply and demand equation are new economic concerns about the tightening of the college student loan markets and fear of recession. The May 16, 2008 edition of the *Chronicle of Higher Education* included several articles addressing the change in the college student loan structure and, worries and concerns about parents' and students' ability to pay tuition bills. Another driving force is the change in expectations of the "millennial" college student. According to DeBard (2004), this generation of students has greater career and personal aspirations, is more confident in their abilities, and feels higher education should be more customized regarding their individual needs and goals.

Millennial Students

Howe and Strauss (2007) defined the "millennial generation" as comprised of individuals born between 1982 and approximately 2005, who are now age 28 or younger. Some of the characteristics of this generation are special, sheltered, confident, team oriented, conventional, pressured, and achieving. Raines (2002) described this generation's

characteristics as sociable, optimistic, talented, well educated, collaborative, open-minded and achievement oriented. The Millennials are also referred to or described as: Nexters, the Internet Generation, Generation Y, the Nintendo Generation, Echo Boomers, and the Digital Generation (Raines, 2002). Oblinger (2003) noted that Milliennials have distinct learning preferences, such as experiential activities, use of technology, preferring teamwork, and structure. Most indicators also point toward Millennials as having more open attitudes towards issues of diversity and social justice (Broido, 2004). This generation is currently estimated at 80 million strong and more diverse than any other generation in U.S. history. Students of this generation provide many opportunities and/or challenges for today's colleges and universities in developing strategies and tools to meet their expectations.

Theoretical Framework

This research study used a quantitative research theoretical framework to explore whether the Cooperative Institutional Research Program (CIRP) Freshman Survey dataset from 2004, 2005, and 2006 can assist this Midwest private college in defining possible market segmentation variables that may influence a prospective college student's decision-making process of college choice. According to Creswell (2008), an important characteristic of quantitative research is the ability to explain or predict relationships among variables. This study intended to identify trends that can be used to assist in increasing the efficiency and effectiveness of this college's policies and procedures. As stated previously, a survey methodology was used to identify possible trends in college choice attitudes, opinions, behaviors, or characteristics. Myers (1996) defined dependent and independent variables in market segmentation as follows:

- *Dependent* variables are those that must be explained or understood. They are the desired outcomes of especial interest.
- *Independent* variables are used to explain or predict the dependent variables. They therefore provide "diagnostics" to indicate factors that are likely to affect the outcome.

The conceptual framework of the student decision-making process is shown in Figure 2.2 and further delineated in Table 2.1. The initial variables were explored as to their influence on student's decision-making process. The dependent variable for this study was Academic Major, and the CIRP data set variables were MAJORA. The independent variables were grouped into four possible segmentation categories: demographic, geographic, sociological, and psychological factors.

POSSIBLE SEGMENTATION VARIABLES	
Demographic - Geographic	Sociological - Psychological

ELEMENTS OF THE DECISION-MAKING PROCESS BEING INVESTIGATED	
Information Search and Evaluation	Choice

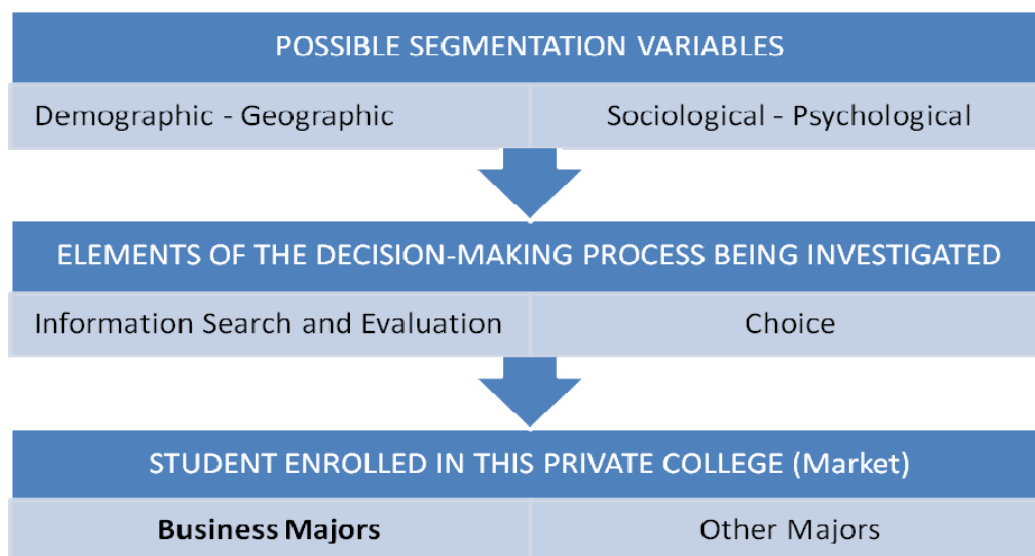| STUDENT ENROLLED IN THIS PRIVATE COLLEGE (Market)	
Business Majors	Other Majors

Figure 2.2. Conceptual framework of a student's decision-making process

Table 2.1.   Factors and CIRP data set variables in a student's decision-making process

Factors	CIRP data set variables
Demographic age, sex, religion, and race	AGE, SEX, RELIG, and RACE
Geographic Student's home and distance from home	DISTHOME
Sociological culture, social class, reference groups, and opinion leaders	REASON and CHOOSE
Psychological needs, perceptions, motivation, and attitudes	REASON and CHOOSE

Figure 2.2 illustrates the combined theoretical framework used in this study. The foundational theoretical framework is provided by Kotler's and Armstong's (2006) five-step model of the marketing process. The first four steps illustrate how the organization works to understand consumers, create consumer value, and build strong customer relationships. The last step illustrates how the organization reaps the rewards of creating superior value. This research study focused on the methodology in exploring the first two steps of Kotler's and Armstrong's (2006) model of understanding the marketplace and customer needs and wants followed by designing a customer-driven marketing strategy. Marketing is defined as the process by which companies create value for customers and build strong customer relationships in order to capture value for customers in return (Kotler & Armstrong, 2006, p. 5). The marketing concept first appeared in educational research journals in the 1970s and 1980s, when colleges and universities were experiencing very similar market conditions as institutions of higher education today, such as a decreased number of high-school graduates, increased completion for those graduates, and a tightening of college budgets due to tough economic times.

Numerous studies have identified the benefits of using marketing models and marketing research to create a competitive advantage and enhance the value of the education services that colleges provide to students (Fram, 1972; Hu, 1996; Kolter, 1979; Kotler & Fox, 1995; Litten, 1980; Shaman et al., 2001; Zemsky et al., 2005). The goal of each college and university is to attract the maximum number of students who will choose to attend, progress, and graduate from the particular college. Kolter and Lee (2008) suggested that colleges must position themselves by communicating their offerings well to the appropriate target market(s) and providing services to match their needs and wants. Understanding which factors are important to prospective students is critical in establishing and building these initial relationships with prospective students. To better understand the factors that influence a prospective student's decision-making process of attending the college identified in the current study, the theoretical framework of College-Choice was used to identify the independent variables that were investigated.

Numerous studies (Cabrera, 2002; Chapman, 1981; Hossler & Gallagher, 1987; Hossler et al, 1989; Jackson, 1982; Litten, 1980; Pascarella & Terenzini, 1991; Perna, 2006) have been conducted to identify individual and composite factors that influence a student's decision-making process to attend college.

Summary

The purpose of the current study was to identify common trends in the decision-making process of business students who chose to attend this small, Midwest private college. Common trends identified in this research could be used in the future by the college to more efficiently and effectively attract and recruit prospective business students.

The literature presented in this chapter was used to develop the methodology and statistical techniques described in Chapter 3. Specifically, the information was used to identify the variables and sequencing of the research questions to better the decision-making process of business students within this particular college. Chapter 3 also provides background information related to the setting of the study, the research design, population and sample, data analysis procedures, and methods used to answer each research question.

CHAPTER 3. METHODOLOGY

*A subtle thought that is in error may give rise to fruitful inquiry
that can establish truths of great value.*
−Isaac Asimov−

This chapter provides an overview of the research methodology used to gather and

analyze the data provided by first-time, full-time students who chose to attend the small

Midwest private college in the study. This descriptive exploratory study was conducted to

gather information about decision-making factors used by students to attend this college and

major in business. The purpose of the study was to ascertain the factors that influence

college choice and analyze the relationships that academic major has influencing their

decision-making process. This chapter presents the setting for the study, research design,

data sources, population and sample, and data analysis procedures used in this study.

Site

This study was conducted at a small private college in the Midwest region of the U.S.

The 60-acre college campus is situated at the shore of a 3,200-acre natural lake in a rural

Midwest setting. The college's mission begins with the following statement:

> *The college is a regionally acclaimed university dedicated to developing
> students for lifelong success through a relentless focus on learning via
> innovative and imaginative academic and professional preparation programs.*

The following provides a snapshot of campus facts and figures for the 2006 academic

year (Cohort Group 3):

> The cohort group for 2006 was comprised of 235 in-coming freshmen
> and 46 new transfer students, creating a total undergraduate enrollment of
> 1,118 students. The student profile revealed the following demographic and
> geographic information:

- *53% of the students are women; 90% are white.*
- *78% are from the college's Midwest state.*

The tuition and fees for this were approximately $29,852, with 99% of the students receiving financial aid that averaged $22,228 per student, creating an average of $7,624 in out-of-pocket expenses. A breakdown of campus enrollment of students by school (by declared major) was: Business (22%); Education (21%); Science (21%); Social Science (18%); and Communications/Arts (17%).

The following provides a snapshot of the campus facts and figures for the 2005

academic year (Cohort Group 2):

The cohort group for 2005 was comprised of 247 in-coming freshmen and 54 new transfer students, creating a total undergraduate enrollment of 1,198 students. The student profile revealed the following demographic and geographic information:
- 52% of the students are women; 89% are white.
- 78% are from the college's Midwest state.

The stated tuition and fees for this were approximately $28,742, with 99% of the students receiving financial aid that averaged $20,403 per student, creating an average of $8,339 in out-of-pocket expenses. The campus enrollment breakdown of students by school (by declared major) was: Business (24%); Education (19%); Science (18%); Social Science (20%); and Communications/Arts (17%).

The following is a snapshot of the campus facts and figures for the 2004 academic

year (Cohort Group 1):

The cohort group for 2004 was comprised of 297 in-coming freshmen and 70 new transfer students, creating a total undergraduate enrollment of 1,242 students. The student profile revealed the following demographic and geographic information:
- 51% of the students are women; 90% are white.
- 77% are from the college's Midwest state.

The stated tuition and fees for this were approximately $27,196, with 99% of the students receiving financial aid that averaged $22,272 per student, creating an average of $6,924 in out-of-pocket expenses. The campus enrollment breakdown of students by school (by declared major) was: Business (24%); Education (20%); Science (18%); Social Science (18%); and Communications/Arts (17%).

The college has been experiencing decreasing and/or stagnant student enrollment in past few years. The college endowment fund has decreased in value due to the current market conditions, creating a tightening of the college's budget.

Research Design

The study utilized a quantitative descriptive exploratory design in which the principal mechanism for gathering data was a survey instrument. A quantitative descriptive study was selected according to Creswell (2008), who purported that quantitative research tends to address concerns that require a description of trends or an explanation of the relationship among variables. Creswell also noted that using a survey design provides the researcher with a quantitative or numeric description of trends, attitudes, or opinions of the population by studying a sample of that population. From the sample results, the researcher can generalize or make claims about the population. The key objective of this study was to assist faculty and staff to better understand the decision-making process of the students who chose to attend this small, Midwest private college.

Population and Sample

The participants in this study were first-time, fulltime freshmen who were enrolled at a small private Midwest college. The total number of first-time, fulltime freshmen was approximately 780, comprised of 236 in 2006, 247 in 2005, and 297 in 2007. The first-time, fulltime freshmen were further delineated according to self-identified academic major.

Survey Instrument

The data used in these analyses came primarily from the Cooperative Institutional Research Program (CIRP) operated by the Higher Education Research Institute (HERI) in the Graduate School of Education and Information Studies at the University of California, Los Angeles (UCLA). This survey is supported by Astin (1991) whose conceptual framework examines inputs (I), environment (E), and outcomes (O). Astin's I-E-O model is based on a set of assumptions that the inputs (I) a student posses prior to attending college can and will influence the student's: selection of a particular college setting, experiences (E) in that college's environment, and outcomes (O) of attending this particular college. The survey is designed to gather information on students' personal and demographic characteristics, high school experiences, expectations about college, values, life goals, self-concepts, and career aspirations. According to HERI, the survey is administered to approximately 700 colleges and universities, and more than 400,000 entering students who complete the survey each year. A study by Astin and Lee (2003) indicated that a substantial portion of the variance of student outcomes can be explained by characteristics of the students when they initially enter the college. According to Astin and Lee, the CIRP freshmen survey was designed to be a pretest for subsequent longitudinal follow-up studies wherein the results will enable institutions to assess change and growth in their students and institution over time. The longitudinal CIRP data have been used in literally hundreds of different studies, enabling researchers and college personnel to investigate and compare trends within their college system and among like institutions. The data for this study were collected from student responses to the 2004, 2005, and 2006 CIRP Freshman Survey that was collected at the freshmen orientation sessions for each of the three cohort groups. A Copy of the CIRP 2005

Freshman Survey and Codebook is provided in Appendix A. A sample from the 2005

Freshman Survey File dataset questions appears in Appendix B.

Data Analysis Procedures

The data containing the student responses to the 2004, 2005, and 2006 Cooperative

Institutional Research Program (CIRP) surveys were obtained from the college's institutional

researcher after the student identifiers had been removed. The data were then transferred to a

password-protected computer where the data were combined and analyzed using SPSS

(version 16.0).

The study focused on first-time, fulltime freshmen who were enrolled at this small

private Midwest college. A quantitative approach was applied by using the data collected

from the 2007, 2006, and 2005 freshman survey, conducted by the Cooperative Institutional

Research Program (CIRP). The initial variables analyzed for this study were as follows:

Dependent Variable

- Students choosing business as an academic major

Independent Variables

- Reasons for attending college

- Reasons for choosing this college

- Student Characteristics

The data were collected to answer the following research questions:

Research Question 1: What are the demographic and geographic characteristics of self-reported business majors?

To answer this first research question, a series of descriptive statistical tools were

utilized, including frequencies, cross-tabulations, correlations, and *t*-tests. The purpose of

this analysis was to identify the demographic and geographic profile of the students selecting

business as their academic major. The CIRP variables selected for this analysis were: age,

sex, race/ethnic background, and distance from home.

Research Question 2: What are the reasons that business majors give for attending college?

To address the second research question, the student responses given to answer the

following CIRP survey question were analyzed using descriptive statistical tools: In deciding

to go to college, how important to you was each of the following reasons? The students were

asked to evaluate the 12 "reason" statements on a scale of 1=Not important, 2=Somewhat

important, and 3=Very important.

Research Question 3: Who and/or what influenced business majors' choice of attending this particular college?

To address this question, the student responses given to answer the following CIRP

survey question were analyzed using descriptive tools: Reasons for choosing to attend this

particular college? The students were asked to evaluate the 18-20 "choose" statements on a

scale of 1=Not important, 2=Somewhat important, and 3=Very important. The purpose of

this analysis was to rank these variables based on the perceived importance by students

choosing to major in business.

Research Question 4: Are there mean differences between the college major groups of business, science, and education in variables influencing their decision-making process?

The academic major groups of business, science, and education were selected because

they represent the three schools with the highest enrollment numbers during the 2004-2006

timeframe. Descriptive and comparative analyses were conducted to explore the differences

in demographic, geographic, psychographic and behavioral variables among and between the

three groups. The first step was to examine the demographic variables of age, sex, race/ethnic background, parent's income, and religious preference of three groups, followed by exploring the geographic variable using the student's responses to the CIRP survey question asking how many miles is this college from your permanent home.

To investigate the sociological and psychological (psychographic and behavioral) variables of these three student groups, descriptive and comparative statistical analysis were conducted using the following data from the following four CIRP survey questions:

1. In deciding to go to college, how important to you was each of the following reasons? The students were asked to evaluate the 12 "reason" statements on a scale of 1=Not important, 2=Somewhat important, and 3=Very important.

2. How important was each reason in your decision to come here (this particular college)? The students were asked to evaluate the 18-20 "choose" statements on a scale of 1=Not important, 2=Somewhat important, and 3=Very important.

A series of one-way analysis of variance (ANOVA) were conducted to determine if there are mean differences in the top college choice factors by college / major groups of business, science, and education. Tabachnick and Fidell (2007, p. 38) posited that Analysis of variance (ANOVA) is a set of analytic procedures based on a comparison of two estimates of variance. One estimate comes from differences among scores within each group; this estimate is considered a random or error variance. The second estimate comes from differences in group means, and is considered a reflection of group differences or treatment effects plus error. The purpose of this analysis was to test the alternative hypothesis that there are differences based on the students majoring in business, science, and education.

Research Question 5: To what extent do the economic and social variables predict students majoring in business or non-business, science and education?

Factor analysis was applied to address this research question. According to Weinstein (2004), factor analysis is a useful tool in benefit and psychographic research segmentation. Factor analysis is a marketing research technique that analyzes a large number of variables and reduces them to a smaller number of key factors to better explain a given marketing situation (p. 47). Astin (1965) conducted a study of student-college match of 127, 212 freshmen attending 248 colleges and universities. By using factor analysis, Astin reduced 51 variables to the following six factors: intellectualism, aestheticism, status, leadership, pragmaticism, and masculinity. One of the most frequently cited researches using factor analysis as a statistical tool is a study on college choice by Richard and Holland (1965). In their study Richard and Holland reduced 27 survey questionnaire items to the following four college choice influence factors: intellectual emphasis, practicality, social emphasis, and advice of others.

In the current study, an exploratory factor analysis was conducted using principle component extraction and oblique rotations among the 18 "choose" variables (reasons for choosing this college) and the 12 "reason" variables (reasons for attending college) to explore whether the underlying dimensions are able to explain the relationships among the reported responses. Logistic regression analyses of these independent variables blocks and the dependent variable of students majoring in business were carried out to predict which college choice factors will be used by students who plan to major in business.

Limitations and Delimitations

This study was conducted with the following limitations and delimitations:

Limitations

- The dataset used for this study did not contain an exact match with the variables identified in previous studies and/or models.

- This study focused on first-time, full-time college students and did not analyze data on transfer and/or international students.

- The data used in this study were limited to student responses to the CIRP survey; thus, students could choose not to answer individual questions.

- The study only examined student data from students who had made a decision to attend this small, private Midwest College.

- Variables selected for the study were determined by the researcher, who was faculty member in the School of Business.

Delimitations

The scope of this study was confined to freshmen who chose to attend this small Midwest private college. The study examined a three-year snapshot that focused primarily on students who chose an academic major in the School of Business. The study did not explore the specific admission, recruiting, and marketing practices that might have affected the students who entered this college. Due to these factors, the findings of this investigation were limited to students who selected and attended this particular college; therefore, generalizations can be made only to institutions with similar marketing structures.

Permission to conduct the study was approved by the Institutional Review Board (IRB) at Iowa State University and the small private Midwestern college. In addition, the Director of Institutional Research at the college removed social security and student identification numbers from the three sets of CIRP data before they were issued to the researcher for this study.

The following chapter will provide the results and findings of the data analysis according to the research questions of this study.

CHAPTER 4. RESULTS

In data analysis, practicality is of the essence.
−Art Weinstein−

The purpose of this study was to investigate entering college students of a small Midwest private college to determine whether there are variables that are unique to the students who chose to major in Business. This chapter provides a description of the research questions and relevant research variables, along with the results of the statistical procedures conducted. The results are given according to each research question.

Description of the Sample

This study examined the responses of 723 first-time, fulltime students who attended this small private college and participated in the Cooperative Institute Research Program (CIRP) national freshmen survey during the Fall 2004, 2005, and 2006 orientation sessions. The total number of students responding to each survey question varied, resulting in a fluctuating sample size (N). The first step of the study was to identify the self-reported academic major selected by the three groups of first-time, fulltime freshmen in the academic school years of 2006, 2005, and 2004. Table 4.1 provides a summary of the breakdown of the entering first-time, fulltime freshmen who completed the CIRP survey each year.

As shown in Table 4.1, the target population of first-time, fulltime students who responded that they wanted to be business majors in the 2006 CIRP Freshman Survey was 45 in 2006, 70 in 2005, and 73 in 2004, for a total of 188 students. In 2004, approximately 26% of the incoming first-time, fulltime students chose to major in Business. However, in 2006 only 22% of the incoming first-time, fulltime students chose to major in Business.

Table 4.1. Frequency distribution of student responses for the variable of Major (aggregated)

	Cohort Frequencies		
Major	2006	2005	2004
Agriculture	0	0	0
Biological Science	18	23	21
Business	45	70	73
Education	21	26	34
Engineering	4	3	7
English	4	2	2
Health Professionals	21	21	31
History or Political Science	3	6	5
Humanities	5	5	7
Fine Arts	14	9	9
Mathematics or Statistics	3	3	3
Physical Science	4	5	6
Social Science	16	17	29
Other Technical	9	11	11
Other Non-technical	27	25	29
Undecided	14	6	16
Total	208	232	283

N=723

Background Characteristics of the Students

Research Question 1: What are the background (demographic and geographic) characteristics of self-reported business majors?

To address this question, a series of descriptive statistics were analyzed to determine the frequency of responses that business students in each of the cohort groups gave for the following CIRP variables: age, sex, race/ethnic background and distance from home. Table 4.2 illustrates the frequency distribution of the independent variables age, sex, race/ethnic background, and distance from home.

Overall, approximately 98% of the students are of traditional college age for entering first-time students (18 and 19 years old). The gender distribution of the target population is approximately 52% female and 48% male students in the three-year span. In terms of the

Table 4.2. Frequency distribution of students majoring in Business

Variable	Cohort Group		
	2006 (n = 45)	2005 (n=70)	2004 (n=73)
Age			
18	48.9	48.6	43.8
19	51.1	48.6	56.2
20	0.0	1.4	0.0
21-24	0.0	1.4	0.0
Sex			
Male	46.7	51.4	46.6
Female	53.3	48.6	53.4
Race/Ethnic Background			
White	93.3	84.3	94.5
Black	4.4	7.1	2.7
American Indian	0.0	0.0	1.4
Asian	0.0	4.3	2.7
Chicano	0.0	0.0	0.0
Puerto	0.0	1.4	0.0
Other Latino	2.2	5.7	0.0
Other	0.0	2.3	0.0
Distance from Home (miles)			
5 or less	0.0	7.1	4.1
6 to 10	4.4	4.3	5.5
11 to 50	15.6	10.0	17.8
51 to 100	37.8	28.6	19.2
101 to 500	33.3	44.3	50.7
Over 500	8.9	5.7	2.7

students' race/ethnic background, the university has a small minority representation. Only

approximately 10% are minority business students. African-American/Black students

account for the largest minority representation at 5%. However, if the sum of Chicano,

Puerto Rican, and Other Latino students are counted as a total Hispanic population, 3% of

students are represented in this group, making it the second largest minority representation.

The remaining student groups are American Indian (less than 1%), Asian (2.6%), and White

(90%). Approximately 44% of the students reported that the distance from home is between

101 and 500 miles, followed by 27% who reported 51 to 100 miles from home, while fewer

than 5% of the students reported a distance from home of over 500 miles.

Reasons for Attending College

Research Question 2: What are the reasons that business majors give for attending college?

To address this question, the responses given to the following CIRP survey question

were analyzed: *In deciding to go to college, how important to you was each of the following*

reasons? The students were asked to evaluate the 12 reason statements on a scale of 1=Not

important, 2=Somewhat important, and 3=Very important. Table 4.3 provides a complete

breakdown of the frequency distributions for the "reason" variables identified in the 2006,

2005, and 2004 CIRP Freshmen Survey.

Table 4.3. Frequency distribution of students responding "Very Important" to Research Question 2: What are the reasons that business majors give for attending college?

Variable	Cohort Percentages		
	2006	2005	2004
Parents wish	47.7	30.0	36.1
Couldn't find job	2.3	10.0	4.2
Get away from home	23.3	22.9	12.5
Get better job	81.4	71.4	83.3
Gain general education	45.5	37.1	47.2
Nothing better to do	4.7	5.7	. 2.8
Become more cultured	25.6	15.7	22.2
Make more money	81.8	67.1	83.3
Learn more things	70.5	48.6	48.6
Prepare for grad/professional school	18.2	30.0	22.2
Role model/mentor encouraged me	9.3	14.3	*
Training for a specific career	79.5	67.1	73.6
Find my purpose in life	*	41.4	48.6

 *Question was not asked on the survey.

Next, the statements were analyzed using *t*-tests to determine if there were any differences based on gender and due to the small sample sizes, valid comparison could not be made based on race/ethnic background.

2006 Cohort Results

Descriptive statistics revealed four college-choice factors with a mean of 2.50 and above for attending college. The results are given as follows:

- *To be able to make more money* was the highest ranked reason for attending college by the 2006 students who chose to major in business, with a mean of 2.82. *To be able to make more money* was rated slightly higher by males (2.86) than by females (2.78). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.533.

- The second highest ranked reason for attending college by the 2006 students who chose to major in business was *to be able to get a better job*, with a mean of 2.77. *To be able to get a better job* was rated higher by males (2.90) than by females (2.64). A *t*-test revealed a statistical difference between male and female business students, with a *p*-value of 0.048 which suggests that this was slightly more important to the male business students.

- The third highest ranked reason for attending college by the 2006 students who chose to major in business was *to get training for a specific career*, with a mean of 2.75. *To get training for a specific career* was rated slightly higher by males (2.76) than by females (2.74). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.890.

- The fourth highest ranked reason for attending college by the 2006 students who chose to major in business was *to learn more about things that interest me*, with a mean of 2.70. *To learn more about things that interest me* was rated slightly higher by males (2.71) than by females (2.70). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.895.

2005 Cohort Results

Descriptive statistics revealed three college-choice factors with a mean of 2.50 and above for attending college. The results are given as follows:

- *To be able to make more money* was the highest ranked reason for attending college by the 2005 students choosing to major in business, with a mean of 2.64. *To be able to make more money* was rated slightly higher by males (2.67) than by females (2.62). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.707.

- The second highest ranked reason for attending college by the 2005 students who chose to major in business was *to be able to get a better job*, with a mean of 2.63. *To be able to get a better job* was rated higher by males (2.64) than by females (2.62). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.891.

- The third highest ranked reason for attending college by the 2005 students who chose to major in business was *to get training for a specific career*, with a mean of 2.56. *To get training for a specific career* was rated slightly higher by females (2.70) than by males (2.57). A *t*-test revealed a statistical difference between male and female

business students, with a *p*-value of 0.038 which suggests that this was more important to the female business students.

2004 Cohort Results

Descriptive statistics revealed three college-choice factors with a mean of 2.50 and above for attending college. The results are given as follows:

- To be able to make more money was the highest ranked reason for attending college by the 2004 students choosing to major in business. To be able to make more money had a mean of 2.82. To be able to make more money was rated slightly higher by females (2.87) than by males (2.76). A *t-test* revealed no statistical difference between male and female business students, with a *p* value of 0.272.

- The second highest ranked reason for attending college by the 2004 students choosing to major in business was to be able to get a better job. To be able to get a better job had a mean of 2.76. To be able to get a better job was rated higher by females (2.85) than by males (2.67). A *t-test* revealed no statistical difference between male and female business students, with a *p* value of 0.202.

- The third highest ranked reason for attending college by the 2004 students choosing to major in business was *to get training for a specific career*, with a mean of 2.68. *To get training for a specific career* was rated slightly higher by females (2.82) than by males (2.52). A *t*-test revealed a statistical difference between male and female business students, with a *p*-value of 0.030 which suggests that this was more important to female business students.

Summary Results of the Three Cohorts

Descriptive statistics revealed four college choice factors with a mean of 2.50 and above for attending college. The results are given as follows:

- *To be able to make more money* was the highest ranked reason for attending college by the students choosing to major in business, with a mean of 2.75. *To be able to make more money* was rated slightly higher by females (2.76) than by males (2.74). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.817.

- The second highest ranked reason for attending college by the students choosing to major in business was *to be able to get a better job*, with a mean of 2.71. *To be able to get a better job* was rated higher by females (2.72) than by males (2.71). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.957.

- The third highest ranked reason for attending college by the students choosing to major in business was *to get training for a specific career*, with a mean of 2.65. *To get training for a specific career* was rated slightly higher by females (2.77) than by males (2.52). A *t*-test revealed a statistical difference between male and female business students, with a *p*-value of 0.006 which suggests that this was slightly more important to the female business students.

- The fourth highest ranked reason for attending college by the students choosing to major in business was *to learn more about things that interest me*, with a mean of 2.51. *To learn more about things that interest me* was rated slightly higher by

females (2.56) than by males (2.44). A *t*-test revealed no statistical difference

between male and female business students, with a *p*-value of 0.153.

Reasons for Attending this College

Research Question 3: Who and/or what influenced business majors' choice of attending this particular college?

To address this question, the responses given to the following CIRP survey question

were analyzed: *Reasons for choosing to attend this particular college?* The students were

asked to evaluate the 18-20 "choose" statements on a scale of 1=Not important, 2=Somewhat

important, and 3=Very important. Table 4.4 provides a complete breakdown of the

Table 4.4. Frequency distribution of students responding "Very Important" to Research
Question 3: Who and/or what influenced business majors' choice of attending
this particular college?

	Cohort Percentages		
Variable	2006	2005	2004
Relatives' wish	9.1	4.3	4.1
Advice of teacher	13.6	5.7	1.4
Good academic reputation	81.8	67.1	65.8
Good social reputation	56.8	31.9	31.5
Offered financial aid	63.6	66.7	74.0
Cost of attending	36.6	17.4	19.4
Advice of HS guidance counselor	6.8	10.1	1.4
Advice of private guidance counselor	2.3	5.8	1.4
Wanted to live near home	15.9	17.1	5.5
Not offered aid by first choice	4.5	8.7	8.2
Could not afford first choice	11.4	*	*
Grads go to top grad school	20.5	29.0	22.2
Grads get good jobs	72.7	72.5	65.2
Religious affil/orientation	13.6	5.8	1.4
Size of college	47.7	32.9	47.2
Rankings in national magazines	14.0	4.3	8.5
Information on website	13.6	5.8	2.8
Early action program	2.3	5.8	0.0
Recruited by athletic dept	31.8	*	*
Campus Visit	52.3	61.4	50.7

*Question was not asked on the survey.

frequency distributions using the "choose" variables identified in the 2006, 2005, and 2004 CIRP Freshmen Survey.

The statements were then analyzed using *t*-tests to determine if there were any differences based on gender. Due to the small sample sizes, valid comparison could not be made based on race/ethnic background.

2006 Cohort Results

Descriptive statistics revealed three college-choice factors with a mean of 2.50 and above for attending this particular college. The results are given as follows:

- *This college has a very good academic reputation* was the highest ranked reason for attending this particular college by the 2006 students who chose to major in business, with a mean of 2.75. *This college has a very good academic reputation* was rated slightly higher by females (2.91) than by males (2.57). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.060.

- The second highest ranked reason for attending this particular college by the 2006 students who chose to major in business was *this college's graduates get good jobs*, with a mean of 2.70. *This college's graduates get good jobs* was rated higher by females (2.74) than by males (2.67). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.643.

- The third highest ranked reason for attending this particular college by the 2006 students who chose to major in business was *I was offered financial assistance*, with a mean of 2.50. *I was offered financial assistance* was rated slightly higher by females (2.61) than by males (2.38). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.308.

2005 Cohort Results

Descriptive statistics revealed four college-choice factors with a mean of 2.50 and above for attending this particular college. The results are given as follows:

- *This college's graduates get good jobs* was the highest ranked reason for attending this particular college by the 2005 students who chose to major in business, with a mean of 2.72. *This college's graduates get good jobs* was rated higher by males (2.74) than by females (2.71). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.736.

- The second highest ranked reason for attending this particular college by 2005 students who chose to major in business was *this college has a very good academic reputation*, with a mean of 2.63. *This college has a very good academic reputation* was rated slightly higher by females (2.68) than by males (2.58). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.498.

- The third highest ranked reason for attending this particular college by the 2005 students who chose to major in business was *a visit to campus*, with a mean of 2.61. *A visit to campus* was rated slightly higher by females (2.68) than by males (2.58). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.590.

- The fourth highest ranked reason for attending this particular college by the 2005 students who chose to major in business was *I was offered financial assistance*, with a mean of 2.61. *I was offered financial assistance* was rated slightly higher by females

(2.73) than by males (2.50). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.113.

2004 Cohort Results

Descriptive statistics revealed three college-choice factors with a mean of 2.50 and above for attending this particular college. The results are given as follows:

- *I was offered financial assistance* was the highest ranked reason for attending this particular college by the 2004 students who chose to major in business, with a mean of 2.70. *I was offered financial assistance* was rated higher by females (2.82) than by males (2.56). A *t*-test revealed a statistical difference between male and female business students, with a *p*-value of 0.045 which suggests that this was slightly more important to female business students.

- The second highest ranked reason for attending this particular college by 2004 students who chose to major in business was *this college has a very good academic reputation*, with a mean of 2.63. *This college has a very good academic reputation* was rated slightly higher by females (2.69) than by males (2.56). A *t*-test revealed no statistical difference between male and female business students, with a *p* value of -0.391.

- The third highest ranked reason for attending this particular college by the 2004 students who chose to major in business was *this college's graduates get good jobs*, with a mean of 2.62. *This college's graduate get good jobs* was rated higher by females (2.72) than by males (2.52). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of 0.121.

Summary Results of the Three Cohorts

Descriptive statistics revealed three college-choice factors with a mean of 2.50 and above for attending this particular college. The results are as follows:

- *This college's graduates get good jobs* was the highest ranked reason for attending this particular college by the students who chose to major in business, with a mean of 2.68. *This college's graduates get good jobs* was rated higher by females (2.72) than by males (2.64). A *t*-test revealed no statistical difference between male and female business students, with a *p*-value of -0.227.

- The second highest ranked reason for attending this particular college by students who chose to major in business was *this college has a very good academic reputation*, with a mean of 2.66. *This college has a very good academic reputation* was rated slightly higher by females (2.74) than by males (2.57). A *t*-test revealed a statistical difference between male and female business students, with a *p*-value of 0.041 which suggests that this was more important to female business students.

- The third highest ranked reason for attending this particular college by the students who chose to major in business was *I was offered financial assistance*, with a mean of 2.62. *I was offered financial assistance* was rated higher by females (2.74) than by males (2.49). A *t*-test revealed a statistical difference between male and female business students, with a *p* value of 0.007 which suggests that this was more important to the female business students.

Mean Differences by Academic Major

Research Question 4: Are there mean differences between the college major groups of business, science, and education in variables influencing their decision-making process?

To address this question, descriptive and comparative analyses were conducted to explore differences in demographic, geographic, sociological, and psychological (psychographic and behavioral) variables among the three academic majors with the highest enrollment numbers.

Demographic and Geographic Results

The first step was to examine the demographic variables of age, sex, race/ethnic background, parent's income, and religious preference. This was followed by exploring each geographic variable using the student's responses to the CIRP survey questions that asked *How many miles is this college from your permanent home*? Table 4.5 provides a breakdown of each of the variables by major grouping. The table does not include students under the age of 18 per the college's research policy resulting in total percentages less than 100 in some of the categories.

As shown in Table 4.5, the majority age of all three academic majors was of the traditional entering college student age of 18-19. The mean scores by major were: Business=3.55 (98.9%): Science=3.46 (97.4%): and Education=3.49 (97.5%). The *p*-value for age was 0.344, which was greater than 0.05; therefore, there was no significant difference between students who chose an academic major of Business, Science, and/or Education.

The gender analyses revealed the following mean scores: Business=1.52 (48.4% male; 51.6% female); Science=1.52 (48.0% male; 52.0% female); and Education=1.68 (32.1% male; 67.9% female). The *p*-value for sex was 0.032, indicating a statistical

difference between students who majored in education and those who majored in Business

and Science.

Table 4.5. Demographic and geographic distribution by academic major

Variable	Percentages by Academic Major		
	Business (n=188)	Science (n=150)	Education (n=81)
Age			
18	46.8	52.7	50.6
19	52.1	44.7	46.9
20	0.5	1.0	0.0
21-24	0.5	0.0	1.2
Sex			
Male	48.4	48.0	32.1
Female	51.6	52.0	67.9
Race/Ethnic Background			
White	90.4	94.0	98.8
Black	4.8	3.3	0.0
American Indian	0.0	1.3	0.0
Asian	2.7	2.7	0.0
Chicano	0.0	1.3	2.5
Puerto	0.0	0.0	0.0
Other Latino	2.7	1.3	0.0
Other	0.0	1.3	0.0
Distance from Home (miles)			
5 or less	4.3	2.0	1.2
6 to 10	4.8	0.7	1.2
11 to 50	14.4	12.7	13.6
51 to 100	27.1	32.0	32.1
101 to 500	44.1	46.7	51.9
Over 500	5.3	5.3	0.0
Parent's Income			
Less than $10,000	1.7	4.2	0.0
$10,000-14,999	2.3	3.5	3.8
$15,000-19,999	4.0	2.1	5.1
$20,000-24,999	4.0	0.0	7.7
$25,000-29,999	7.3	2.8	7.7

Table 4.5. (Continued).

Variable	Percentages by Academic Major		
	Business (*n*=188)	Science (*n*=150)	Education (*n*=81)
Parent's Income (continued)			
$30,000-39,999	9.6	11.8	11.5
$40,000-49,999	13.6	11.8	11.5
$50,000-59,999	14.1	13.9	15.4
$60,000-74,999	13.0	18.8	10.3
$75,000-99,999	13.0	14.6	16.7
$100,000-149,999	11.3	11.1	9.0
$150,000-199,999	0.0	4.2	0.0
$200,000-249,999	3.2	0.7	0.0
$250,000 or more	14.4	0.7	1.3
Religious Preference			
Baptist	6.9	4.0	3.9
Buddhist	0.0	1.0	0.0
Church of Christ	3.1	5.0	3.9
Episcopalian	0.0	1.0	0.0
Hindu	0.0	1.0	0.0
Lutheran	19.8	25.0	23.5
Methodist	12.2	12.0	13.7
Presbyterian	7.0	4.6	2.0
Roman Catholic	26.7	21.0	31.4
Unitarian/Universalist	1.5	1.0	0.0
United Church of Christ/Congregational	4.6	6.0	11.8
Other Christian	4.6	6.0	3.9
Other Religion	3.8	4.0	3.9
None	12.2	6.0	2.0

Note. Students under the age of 18 were excluded from the anaylsis.

   All three academic major groups had a small representation of minority groups. A

breakdown by academic major group revealed that 90.4% of Business majors, 94.0% of

Science majors, and 98.8% of Education majors were white. The *p*-value for race was 0.048,

indicating a statistical difference between students majoring in Education and those majoring in Business and Science.

The religious preferences of each of the academic groups were predominately Christian. The top religious affiliations identified by students majoring in Business were: Roman Catholic (26.7%), Lutheran (12.2%), and Methodist (12.2%). For students who majored in science, the top three were: Lutheran (25.0%), Roman Catholic (21.0%), and Methodist (12.0%); whereas, students who majored in Education identified Roman Catholic (31.4%), Lutheran (23.5%), and Methodist (13.7%) as their top three preferences. The *p*-value for religious preference was 0.589, which was greater than 0.05; therefore, there was no significant difference between students' religious preference and academic major in business, science, and/or education.

When students were asked to estimate their parents' income last year, the following mean scores by academic major were identified: Business (mean=7.89; Science (mean=8.01); and Education had a mean score of 7.41. The *p*-value for parents' income was 0.283, which was greater than 0.05; therefore, there was no significant difference between students who chose an academic major of Business, Science, and/or Education, and their parents' income.

The survey question on the CIRP, *How many miles is this college from your permanent home?* was used to explore the geographic variable. The majority result for all three academic major groups was 101 to 500 miles, and the means by academic major were: Business (mean=4.18); Science (mean=4.38); and Education (mean=4.32). The *p*-value for distance from home was 0.208, which was greater than 0.05; therefore, there was no

significant difference between students who chose an academic major of Business, Science, and/or Education, and the distance of the college and their permanent home.

A summary of the demographic variables indicated that, among the students, 97.8% were 18-19 years old, and 94.4% were white. The top three religious preferences were: Roman Catholic, Lutheran, and Methodist. The mean income of the student's parents by students' academic major was: Business (mean=7.89); Science (mean=8.01); and Education (mean=7.41), with a range of $40,000-59,999. The analysis of the geographic data reflects no mean difference by academic major. The largest percentage of students reported a 101 to 500 miles distance from home, followed by 51 to 100 miles from home.

Sociological and Psychological Results

The mean differences of sociological and psychological (psychographic and behavioral) variables were explored using two CIRP survey questions: *In deciding to go to college, how important to you was each of the following reasons?* The students were asked to evaluate 12 "reason" statements on a scale of: 1=Not important, 2=Somewhat important, and 3=Very important, and *Reasons for choosing to attend this particular college?* Then the students were asked to evaluate 18 "choose" statements on a scale of: 1=Not important, 2=Somewhat important, and 3=Very important. Table 4.6 provides the mean and standard deviation results for each "reason" variable by academic major group.

Using the descriptive statistical findings stated previously, a series of one-way analysis of variance (ANOVA) were conducted to determine if there are differences in the mean of the "reason" variables and college major groups of Business, Science, and Education. A *p*-value of less than .05 was established for statistical significance. The analysis revealed four "reason" statements that met the .05 criteria. The results of the one-

way ANOVA of the four "reason" dependent variables with a *p*-value of less than 0.05 are

given as follows:

Table 4.6. Mean distribution by academic major of students who responded "Very
Important" to sociological and psychological variables for each "reason"

Variable	Academic Major		
	Business Mean (SD) N=186	Science Mean (SD) N=150	Education Mean (SD) N=81
Parents wish	2.15 (0.754)	2.11 (0.796)	2.41 (0.667)
Couldn't find job	1.24 (0.552)	1.19 (0.498)	1.26 (0.590)
Get away from home	1.88 (0.700)	1.80 (0.649)	1.86 (0.720)
Get better job	2.71 (0.589)	2.67 (0.609)	2.63 (0.679)
Gain general education	2.35 (0.618)	2.46 (0.587)	2.47 (0.593)
Nothing better to do	1.15 (0.466)	1.20 (0.476)	1.14 (0.411)
Become more cultured	1.96 (0.674)	2.05 (0.659)	2.11 (0.689)
Make more money	2.75 (0.469)	2.70 (0.553)	2.52 (0.656)
Learn more things	2.51 (0.562)	2.70 (0.502)	2.59 (0.565)
Prepare for graduate school	1.95 (0.733)	2.67 (0.598)	2.00 (0.791)
Role model/mentor encouraged me	1.65 (0.699)	1.76 (0.618)	1.74 (0.820)
Training for specific career	2.65 (0.616)	2.75 (0.504)	2.74 (0.519)

- The results between groups for the "reason" variable, *my parents wanted me to go,*
  were: sum of squares *(SS)*=5.219; degrees of freedom (*df*)=2; mean square
  (*MS*)=2.610; *f*-ratio (*F*)=4.599, and significance (*p*)=0.011. Because the *p*-value was
  less than 0.05, there was a significant difference between academic major groups.
  The Tukey and Scheffé post hoc test revealed there was a significant difference
  (*p*=0.025) between the Business and Education major groups, suggesting that
  Education majors were more likely than Business majors to use *advice from parents*
  in their decision to attend college. Levene's test of homogeneity of variance revealed
  a *p*-value of 0.429.

- The results between groups for the "reason" variable, *to be able to make more money,* were: *SS*=2.924; *df*=2; *MS*=1.462; *F*=5.029; and *p*=0.007. Because the *p*-value was less than 0.05, there was a significant difference between academic major groups. The Tukey and Scheffé post hoc test revealed there was a significant difference (*p*=0.005) between the Business and Education major groups, suggesting that Business majors were more likely than Education majors to use *to be able to make more money* in their decision to attend college. Levene's test of homogeneity of variance revealed a *p*-value of 0.000.

- The results between groups for the "reason" variable, *to learn more about things that interest me,* were: *SS*=3.145; *df*=2; *MS*=1.573; *F*=5.356; and *p*=0.005. Because the *p*-value was less than 0.05, there was a significant difference between academic major groups. The Tukey and Scheffé post hoc test revealed there was a significant difference (*p*=0.003) between the Business and Science major groups, suggesting that Science majors were more likely than Business majors to use *to learn more about things that interest me* in their decision to attend college. Levene's test of homogeneity of variance revealed a *p*-value of 0.000.

- The results between groups for the "reason" variable, *to prepare myself for graduate or professional school,* were: *SS*=47.780; *df*=2; *MS*=23.890; *F*=48.770l; and *p*=0.000. Because the *p*-value was less than 0.05, there was a significant difference between academic major groups. The Tukey and Scheffé post hoc test revealed that there was a significant difference (*p*=0.000) between the Business and Science major groups, suggesting that Science majors were more likely than Business majors to use *to*

prepare myself for graduate or professional school in their decision to attend college.

Levene's test of homogeneity of variance revealed a *p*-value of 0.084.

Table 4.7 provides the mean and standard deviation results for each of the "choose"

variables by academic major groups:

Table 4.7. Mean and standard deviation results for each of the "choose" variables
by academic major groups

Variable	Academic Major		
	Business Mean (SD) N=186	Science Mean (SD) N=150	Education Mean (SD) N=81
Relatives' wish	1.42 (0.594)	1.36 (0.547)	1.40 (0.585)
Advice of teacher	1.44 (0.605)	1.27 (0.473)	1.45 (0.593)
Good academic reputation	2.66 (0.559)	2.69 (0.491)	2.72 (0.480)
Good social reputation	2.22 (0.697)	2.29 (0.669)	2.44 (0.592)
Offered financial aid	2.62 (0.615)	2.61 (0.590)	2.53 (0.672)
Cost of attending	1.88 (0.752)	1.92 (0.747)	1.84 (0.715)
Advice of HS guidance counselor	1.41 (0.602)	1.39 (0.601)	1.41 (0.608)
Advice of private college counselor	1.32 (0.533)	1.23 (0.484)	1.33 (0.592)
Wanted to live near home	1.58 (0.701)	1.55 (0.719)	1.80 (0.858)
Not offered aid by first choice	1.30 (0.601)	1.17(0.460)	1.20 (0.485)
Grads go to top grad school	1.95 (0.735)	2.34 (0.740)	1.88 (0.765)
Grads get good jobs	2.68 (0.501)	2.63 (0.572)	2.68 (0.567)
Religious affiliation	1.31 (0.578)	1.41 (0.626)	1.31 (0.562)
Size of college	2.25 (0.730)	2.45 (0.691)	2.48 (0.709)
Rankings in national magazines	1.48 (0.645)	1.37 (0.597)	1.37 (0.621)
Information from a website	1.51 (0.618)	1.51 (0.674)	1.50 (0.636)
Early action program	1.12 (0.405)	1.12 (0.346)	1.10 (0.339)
Visit to campus	2.40 (0.676)	2.52 (0.610)	2.54 (0,574)

Using the descriptive statistical findings stated previously, a series of one-way

analysis of variance (ANOVA) were conducted to determine if there are differences in the

mean of the "choose" variables and college major groups of Business, Science, and

Education. A *p*-value of less than .05 was established for statistical significance. The results

of the one-way analysis of variance of the five "choose" dependent variables with a *p*-value of less than 0.05 are given as follows:

- The results between groups for the "choose" variable, *my teacher advised me to go,* were: *SS*=2.888; *df*=2; *MS*=1.444; *F*=4.629; *p*=0.010. Because the *p*-value was less than 0.05, there was a significant difference between academic major groups. The Tukey and Scheffé post hoc test revealed that there was a significant difference (p=0.017) between the business and education major groups suggesting that education majors were more likely than business majors to use the *advice from a teacher* in their decision to attend this particular college. Levene's test of homogeneity of variance revealed a *p* value of 0.000.

- The results between groups for the "choose" variable, *this college has a good reputation for its social activities,* were: *SS*=2.832; *df*=2; *MS*=1.416; *F*=3.175; and *p*=0.043. Because the *p*-value was less than 0.05, there was a significant difference between academic major groups. The Tukey and Scheffé post hoc test revealed that there was a significant difference (*p*=0.032) between the Business and Science major groups, suggesting that Science majors were more likely than Business majors to use *a good social reputation* in their decision to attend this particular college. Levene's test of homogeneity of variance revealed a *p*-value of 0.683.

- The results between groups for the "choose" variable, *this college's graduates gain admission to top graduate/professional schools*, were: *SS*=16.805; *df*=2; *MS*=8.403; *F*=15.228, and *p*=0.000. Because the *p*-value was less than 0.05, there was a significant difference between academic major groups. The Tukey and Scheffé post hoc test revealed that there was a significant difference (*p*=0.000) between the

Business and Science major groups, suggesting that Science majors were more likely than Business majors to use *graduates gain admission to top graduate schools* in their decision to attend this particular college. Levene's test of homogeneity of variance revealed a *p*-value of 0.097.

- The results between groups for the "choose" variable, *I wanted to go to a school about the size of this college*, were: *SS*=4.676; *df*=2; *MS*=2.338; *F*=4.610; and *p*=0.010. Because the *p*-value was less than 0.05, there was a significant difference between academic major groups. The Tukey and Scheffé post hoc test revealed that there was a significant difference (*p*=0.037) between the Business and Education major groups, suggesting that Education majors were more likely than Business majors to use *graduates the size of this college* in their decision to attend this particular college. Levene's test of homogeneity of variance revealed a *p*-value of 0.951.

- The results between groups for the "choose" variable, *I wanted to live near home,* were: *SS*=3.610; *df*=2; *MS*=1.805; *F*=3.294; *p*=0.038. Because the *p*-value was less than 0.05, there was a significant difference between academic major groups. The Tukey and Scheffé post hoc test revealed that there was a significant difference (*p*=0.040) between the Education and Science major groups, suggesting that science majors were more likely than education majors to use the *wanting to live close to home* in their decision to attend this particular college. Levene's test of homogeneity of variance revealed a *p* value of 0.003.

Summary of the ANOVA Results by Academic Major

The ANOVA analyses revealed there were mean differences in several of the "reason" and "choose" variables and college major groups of Business, Science, and Education. A *p*-value of less than .05 was established for statistical significance. Because *p*<.05, the null hypothesis was rejected and a significant difference between college major groups was identified for the following dependent variables: *My parents wanted me to go, able to make money; to learn more about things that interest me; to prepare myself for graduate or professional school; my teacher advised me; this college has a good reputation for its social activities; this college's graduates gain admission to top graduate/professional schools; and I wanted to go to a school about the size of this college.* The results of the ANOVAs were significant; therefore, both the Tukey and Scheffé post hoc tests were conducted to compare and contrast the mean differences. The tests identified significant mean differences between Business and Science majors for the following variables:

- Learn more about things (Mean Difference = -0.195: *p*=0.003)
- Prepare for grad school (Mean Difference = -0.720; *p*=0.000)
- Advice of teacher (Mean Difference = 0.169: *p*=0.017)
- Grads go to top grad schools (Mean Difference = -0.394: *p*=0.000)
- Size of college (Mean Difference = -0.199: *p*=0.030)

The tests identified significant mean differences between Business and Education majors for the following variables:

- Parents wishes (Mean Difference = -0.262: *p*=0.25)
- Make more money (Mean Difference = 0.228: *p*=0.005)
- Good social reputation (Mean Difference = -0.224: *p*=0.032)
- Size of college (Mean Difference = -0.234: *p*=0.037)

The validity of the ANOVA is based on the following assumptions: independent of the population, even distribution, and equal variances. Due to the varying distributions, Levene's test of homogeneity of variance was used to determine if the three groups had equal variances. Levene's test of homogeneity yielded the followings results: Learn more about things ($p=0.000$); prepare for grad school ($p=0.084$); advice of teacher ($p=0.000$); grads go to top grad schools ($p=0.097$); size of college ($p=0.951$); parents wishes with ($p=0.429$); make more money ($p=0.000$); and good social reputation ($p=0.683$). The results identify several possible limits in the use of the following variables and college major groups based on homogeneity: Learn more about things; advice from teacher; and make more money.

In conclusion, the series of one-way analysis of variance and subsequent post hoc tests suggested that there is a slight difference in the use of the major college choice college choice factors by different reported college academic major groups.

Multivariate Regression Analysis

Research question 5: To what extent do the economic and social variables predict students majoring in business or non-business, science and education?

To address the last research question and determine if one can predict which college choice college-choice factors will be used by students who choose to major in Business, a factor analysis and a series of logistic regression models were utilized. First, using the 2006, 2005, and 2004 CIRP data set, the 18 CHOOSE variables (Reasons for Choosing This College) and the 12 REASON variables (Reasons for Attending College) were selected to explore the underlying dimensions that might explain the relationships among the responses. The exploratory factor analysis of first-time, fulltime freshmen responses yielded five factors with alpha reliabilities greater than 0.50. Comrey and Lee (1992) suggested that loadings in

excess of .71 are considered excellent, .63 very good, .55 good, .45 fair, and .32 poor. Table

4.8 summarizes the findings of the exploratory factor analysis.

Table 4.8. Factor analysis results for first-time, fulltime freshmen (n = 751)

Variable	Factor Loading
School Reputation (α = 0.678)	
(reasons for choosing this college[a])	
Graduates go to top graduate schools	0.770
Graduates get good jobs	0.705
Good academic reputation	0.596
(reasons for attending college[a])	
Prepare for graduate school	0.548
Advice of Others (α = 0.675)	
(reasons for choosing this college[a])	
High school counselor advised me	0.756
Teacher advised me	0.735
Private counselor advised me	0.665
Liberal Education (α = 0.680)	
(reasons for attending college[a])	
Gain general education	0.755
Become a more cultured person	0.721
Learn more about things that interest me	0.716
Financial (α = 0.522)	
(reasons for choosing this college[a])	
Offered financial assistance	0.777
Cost of attending this college	0.748
Image (α = 0.638)	
(reasons for choosing this college[a])	
Information from a website	0.752
Rankings in a magazine	0.711
Admitted through Early Action	0.533
Attracted by religious affiliation	0.512
Earnings (α = 0.700)	
(reasons for attending college[a])	
Make more money	0.858
Get a better job	0.838

[a]Variables ranked on a 3-point scale: 1="Not important"; 2="Somewhat important";
 3="Very important"

Next, the six identified factors were named according to the research of Richard and Holland (1965) as the foundation, and computed to form the following composite variables: School reputation, Advice of others, Liberal education, Financial (cost), Image, and Earnings. Using these composite variables, a series of one-way analysis of variance (ANOVA) were conducted to test if there are differences in the mean of the composite variables and college major groups of Business, Science, and Education. A *p*-value of less than .05 was established for statistical significance.

Table 4.9. One-way ANOVA by major groups

Composite Variable	Groups	SS	df	MS	F	P
N=408; Business=179, Science=150, & Education=79						
School Reputation	Between Groups	103.133	2	51.567	17.281**	0.000
	Within	1208.511	405	2.984		
	Total	1311.645	407			
N=415; Business=185, Science=150, & Education=80						
Advice of Others	Between Groups	7.786	2	3.893	2.194	0.113
	Within	730.899	412	1.774		
	Total	738.684	414			
N=416; Business=185, Science=150, & Education=81						
Liberal Education	Between Groups	5.456	2	2.728	2.467	0.086
	Within	456.660	413	1.105		
	Total	462.115	415			
N=416; Business=185, Science=150, & Education=81						
Financial (Cost)	Between Groups	1.326	2	0.663	0.516	0.597
	Within	530.520	413	1.285		
	Total	531.846	415			
N=412; Business=183, Science=149, & Education=80						
Image	Between Groups	1.111	2	0.556	0.228	0.796
	Within	995.190	409	2.433		
	Total	966.301	411			
N=414; Business=185, Science=149, & Education=80						
Earnings	Between Groups	4.699	2	2.349	2.377	0.094
	Within	406.270	411	0.988		
	Total	410.969	413			

*p < .05; **p < .01

Because *p*<. 05, the null hypothesis was rejected, and a significant difference between college major groups was identified for the following composite variable: School Reputation. Table 4.9 summarizes the results of the one-way ANOVA.

The results of the ANOVAs were significant for School Reputation; therefore, both the Tukey and Scheffé post hoc tests were conducted to compare and contrast the mean differences. The tests identified significant mean differences between Business and Education majors (mean difference -1.048; *p*-value=0.000). The validity of the ANOVA is based on the following assumptions: independent of the population, even distribution, and equal variances. Due to the varying distributions, Levene's test of homogeneity of variance was used to determine if the three groups had equal variances. Levene's test of homogeneity yielded the followings results: School Reputation (0.101; *df1*=2; *df2*=405; *p*=0.904).

Logistic Regression Results

Next, these college choice combinations were used in a series of logistic regression models to identify the students who were more likely to use School Reputation, Advice of Others, Liberal Education, Financial (cost), Image, and Earnings. The question asked was: *How do variables; school reputation, advice of others, liberal education, financial (cost), image, and earnings affect choosing to major in business?* The response variables: business/non-business, business/science, and business/education, were created by recoding the academic major variable resulting in the following: business 1=177 and non-business 0=515, business 1=177 and science 0=148, and education 0=77.

Sample size calculation for logistic regression is a complex problem. Based on the work of Peduzzi et al. (1996), the following guideline for a minimum number of cases included in the study was suggested: Let **p** be the smallest of the proportions of negative or

positive cases in the population and **k** the number of covariates (the number of independent variables). Thus, the minimum number of cases to include was N=10k/p. Therefore, applying the formula (10 × 6 composite variables ÷ by smallest of the proportions), which is 77 (education) = 77.9. However, Long (1997) suggested having a minimum of 100 cases in the study. The three models meet the aforementioned threshold, with business/non-business at 692, business/science at 325, and business/education at 254. Next, the response rates were checked in each of the composite variables by academic major groupings to ensure even distributions. The following results were obtained: Business (school reputation=179, advice of others=185, liberal education=185, financial (cost)=185, image=183, and earnings=185); Science (school reputation=150, advice of others=150, liberal education=150, financial (cost)=150, image=149, and earnings=149); and Education (school reputation=79, advice of others=80, liberal education=81, financial (cost)=81, image=80, and earnings=80).

Using the theoretical framework of the college choice model presented by Hossler, Braxton, and Coopersmith (1989) and the conceptual framework of grouping college-choice variables into economic forces (Pascarella & Tenenzini, 1991) and social forces (Alba & Lavin, 1981), the following regression model framework was developed: dependent variable (students majoring in business) and independent variables were computed using the results of factor analysis findings, and grouping them in blocks representing economic forces and social forces.

Business/Non-Business

A sequential logistic regression analysis was performed through SPSS to assess prediction of membership in one the two categories of outcome (students choosing to major in business and students not choosing to major in business), first on the basis of two

economic predictors and then after the addition of four social predictors. Economic predictors were financial (composite variable of offered financial assistance and cost of attending college) and earnings (composite variable of make more money and get a better job). Social predictors were advice of others (composite variable of high school counselor advised me, teacher advised me, and private counselor advised me), image (composite variable of information from a website, rankings in a magazine, admitted through early action, and attracted by religious affiliation), school reputation (composite variable of graduates go to top graduate schools, graduates get good jobs, good academic reputation, and prepare for graduate school) and liberal education (composite variable of gain general education, become more cultured person, and learn more about things that interest me).

After 61 missing cases of students who did not report an academic major were removed, data from 177 students choosing to major in business and 515 students not choosing to major in business were available for analysis. The Hosmer and Lemehow test revealed a Chi-square of 4.412 (*df*=8), resulting in a *p*-value of 0.818. If the Hosmer and Lemehow goodness-of-fit is greater than 0.05, this implies the model's estimates fit the data at an acceptable level.

Table 4.10 provides a summary of the results of the logistic regression analysis of Academic Major as a function of Economic and Social Factors: Business vs. Non-Business. The first step of this model (step 0) included no predictors and just the intercept which defined the null model as predicting 74.4%.

In step 1 (block 1) a logic regression was used to predict the student choosing to pick the academic major of business from financial (cost) and earnings. Earnings were significant predictors of students choosing to major in business. The results are summarized in Table

4.10. The odds of a student using earnings in their decision were increased by 1.281 if they were choosing to major in business. However the regression model only indicated a less than 1% of the dependent variable may be accounted for by the predictor variables. The

Table 4.10. Logistic regression analysis of Academic Major as a function of Economic and Social Factors: Business vs. Non-Business

Independent Variable	Odds Ratio (standard error)		
	Step 0 Null	Step 1 Economic	Step 2 Economic & Social
(N=254; breakdown: Business majors N=177, non-business majors N=515)			
Constant	0.344 (0.087)**	0.157 (0.584)*	0.225 (0.704)*
Financial (Cost)		0.938 (0.079)	0.946 (0.084)
Earnings		1.221 (0.089)*	1.281 (0.092)**
Advice of Others			1.194 (0.075)*
Image			1.045 (0.063)
School Reputation			0.907 (0.051)
Liberal Education			0.852 (0.087)

*$p < .05$; **$p < .01$

predicted percentage only improved to 74.8 from 74.4, which was similar to the Cox and Snell R-square value of 0.006.

The next step of the sequential regression model was to add the social predictors of advice of others, image, school reputation, and liberal education. In step 2 (block 2) a logic regression was used to predict the student choosing to pick the academic major of business from financial (cost), earnings, advice of others, image, school reputation, and liberal education. The results are summarized in Table 4.10. Earnings and advice from others were significant predictors of students choosing to major in business. The odds of a student using

earnings and advice of others in their decision were increased by 1.281 and 1.194, respectively, if they were choosing to major in business. However the regression model only indicated a less than 3% of the dependent variable may be accounted for by the predictor variables. The predicted percentage for the full model only improved to 77.3 from 74.4, which was similar to the Cox and Snell R-square value of 0.027.

Business/Science

This set of analyses was conducted using students choosing to major in business and students choosing to major in science. A sequential logistic regression analysis was performed through SPSS to assess prediction of membership in one of the two categories of outcome (students choosing to major in business and students choosing to major in science), first on the basis of two economic predictors and then after the addition of four social predictors. Economic predictors were financial (composite variable of offered financial assistant and cost of attending college) and earnings (composite variable of make more money and get a better job). Social predictors were: advice of others (composite variable of high school counsel advised me, teacher advised me, and private counselor advised me), image (composite variable of information from a website, rankings in a magazine, admitted through early action, and attracted by religious affiliation), school reputation (composite variable of graduates go to top graduate schools, graduates get good jobs, good academic reputation, and prepare for graduate school) and liberal education (composite variable of gain general education, become more cultured person, and learn more about things that interest me). The results are summarized in Table 4.11.

As shown in Table 4.11, after 428 missing cases of students not reporting an academic major of business and/or science were removed, data from 177 students choosing

to major in business and 148 students not choosing to major in science were available for

analysis. The Hosmer and Lemehow test revealed a Chi-square of 4.495 (*df*=6), resulting in

a *p*-value of 0.610. If the Hosmer and Lemehow goodness-of-fit is greater than 0.05 implies

Table 4.11. Logistic regression analysis of Academic Major as a function of Economic
and Social Factors: Business vs. Science

Independent Variable	Odds Ratio (standard error)		
	Step 0 Null	Step 1 Economic	Step 2 Economic & Social
(*N*=254; breakdown: Business majors *N*=177; Science majors *N*=148)			
Constant	1.196 (0.179)	0.793 (0.762)	7.799 (1.026)
Financial (Cost)		0.950 (0.099)	1.080 (0.112)
Earnings		1.126 (0.117)	1.254 (0.131)
Advice of Others			1.358 (0.105)**
Image			1.011 (0.088)
School Reputation			0.654 (0.078)**
Liberal Education			0.877 (0.126)

p < .05; **p* < .01

the model's estimates fit the data at an acceptable level. The first step of this model (step 0),

included no predictors and just the intercept which defined the null model as predicting

54.5%.

In step 1 (block 1) a logic regression was used to predict the students choosing to pick

the academic major of business from financial (cost) and earnings. Earnings were significant

predictors of students choosing to major in business. The results are summarized in Table

4.11. The odds of a student using financial (cost) and/or earnings were not statistical

significant with a *p* value of less than 0.05. The predicted percentage decreased from 54.4 to 53.8, which was similar to the Cox and Snell R-square value of 0.004.

The next step of the sequential regression model was to add the social predictors of advice of others, image, school reputation, and liberal education. In step 2 (block 2) a logic regression was used to predict the student choosing to pick the academic major of business from financial (cost), earnings, advice of others, image, school reputation, and liberal education. School reputation was a significant predictor of students choosing to major in science. The results are summarized in Table 4.11. The odds of a student using school reputation in their decision were increased by 0.425 if they were choosing to major in science. The regression model indicated more than 12% of the dependent variable may be accounted for by the predictor variables. The predicted percentage for the full model only improved to 66.5 from 54.5, which was similar to the Cox and Snell *R*-square value of 0.129.

Business/Education

The next set of analyses was conducted using students choosing to major in business and students choosing to major in education. A sequential logistic regression analysis was performed through SPSS to assess prediction of membership in one of the two categories of outcome (students choosing to major in business and students choosing to major in education), first on the basis of two economic predictors and then after the addition of four social predictors. Economic predictors were financial (composite variable of offered financial assistant and cost of attending college) and earnings (composite variable of make more money and get a better job). Social predictors were advice of others (composite variable of high school counsel advised me, teacher advised me, and private counselor advised me), image (composite variable of information from a website, rankings in a

magazine, admitted through early action, and attracted by religious affiliation), school

reputation (composite variable of graduates go to top graduate schools, graduates get good

jobs, good academic reputation, and prepare for graduate school) and liberal education

Table 4.12. Logistic regression analysis of Academic Major as a function of Economic
and Social Factors: Business vs. Education

	Odds Ratio (standard error)		
Independent Variable	Step 0 Null	Step 1 Economic	Step 2 Economic & Social
(*N*=254; breakdown: Business majors *N*=177; Education majors *N*=77)			
Constant	2.299 (0.137)**	0.472 (0.848)	0.785 (1.114)
Financial (Cost)		1.038 (0.121)	1.036 (0.130)
Earnings		1.304 (0.127)*	1.389 (0.133)*
Advice of Others			1.008 (0.116)
Image			1.142 (0.104)
School Reputation			1.040 (0.090)
Liberal Education			0.648 (0.154)**

*$p < .05$; **$p < .01$

(composite variable of gain general education, become more cultured person, and learn more

about things that interest me). The results are summarized in Table 4.12.

As shown in Table 4.12, After 499 missing cases of students not reporting an

academic major of business and/or education were removed, data from 177 students choosing

to major in business and 77 students not choosing to major in education were available for

analysis. The Hosmer and Lemehow test revealed a Chi-square of 3.735 (*df*=6), resulting in

a *p*. value of 0.712. If the Hosmer and Lemehow goodness-of-fit is greater than 0.05 implies

the model's estimates fit the data at an acceptable level. The first step of this model (step 0),

included no predictors and just the intercept which defined the null model as predicting 69.7%.

In step 1 (block 1) a logic regression was used to predict the student choosing to pick the academic major of business from financial (cost) and earnings. Earnings were significant predictors of students choosing to major in business. The results are summarized in Table 4.12. The odds of a student using earnings in their decision where increased by 1.304 if they were choosing to major in business. However, the regression model only indicated less than 2% of the dependent variable may be accounted for by the predictor variables. The predicted percentage increased from 69.7 to 70.9, which was similar to the Cox and Snell R-square value of 0.017.

Then next step of the sequential regression model was to add the social predictors of advice of others, image, school reputation, and liberal education. In step 2 (block 2) a logic regression was used to predict the student choosing to pick the academic major of business from financial (cost), earnings, advice of others, image, school reputation, and liberal education. Liberal education was a significant predictor of students choosing to major in science; whereas, earnings was a significant predictor of students choosing to major in business. The results are summarized in Table 4.12. The odds of a student using school reputation in their decision were increased by 0.425 if they were choosing to major in science. Whereas, the odds of a student using earnings in their decision were increased by 1,389 if they were choosing to major in business. The regression model indicated only 2% of the dependent variable may be accounted for by the predictor variables. The predicted percentage for the full model only improved to 71.7 from 69.7, which was similar to the Cox and Snell R-square value of 0.052. .

Summary

In conclusion, the odd ratios indicate a greater likelihood of composite variables of advice of others and earnings to be used by students choosing to major in the business area. Whereas, the composite variable of school reputation more likely used by students choosing to major in science and liberal education factors more likely used by students selecting to major in education.

The next chapter will summarize and discuss the findings of the study and provide implications for policy and practice. Chapter 5 will also review the study's limitations and identify areas for future research.

CHAPTER 5. FINDINGS AND CONCLUSIONS

The decisions that students make about college have a lasting impact on their lives.
−Don Hossler, Jack Scmidt, and Nick Vesper −

This chapter provides a summary of the major findings using the marketing theoretical framework of understanding the marketplace, and business students' needs and wants regarding selecting this particular college. The chapter also includes potential marketing strategies, and implications for policy and practice for the School of Business and the Enrollment Management team. The chapter concludes with the limitations of the study, and suggestions for areas of future research and action to complete the marketing management process.

The primary goal of this research study was to gather information on the market structure of business students who choose to attend this particular small private Midwest College. Researchers remind us that markets and the choices confronting both buyers and sellers are at once mysterious and straightforward—mysterious to those who believe markets do not matter and reasonably straightforward after one accepts that the market is not a metaphor but a system of exchanges that shapes the enterprise. It is the nature and direction of those transactions that the structure of the market is reflected (Zemsky et al, 2001, p. 21).

The study examined student responses to selected questions from the CIRP survey to begin creating a student profile of business students who choose to attend this particular college. The intent was that the student profile might be used to identify key elements to create value for the students enrolled at this small, private Midwest college while proving the foundation to build a strong student-college relationship.

To address the conclusions of this study, one needs to return to the theoretical framework—the Marketing model provided by Kotler and Armstrong (2008). According to Kotler and Armstrong, the first step in the marketing process is to gain an understanding of the marketplace, and customer needs and wants.

Marketplace and Student Needs/Wants

The first step in the Marketing model is to develop an understanding of the marketplace and to evaluate the trends affecting higher education (Kotler, 1977). This study identified four major trends affecting higher education in Chapter 1: (a) the decreasing number of high school graduates in the region; (b) increasing competition; (c) a tightening of the student loan markets; and (d) the changing expectations of the "millennial" college student.

The next step in the marketing process is to answer a set of questions designed to explore the following: market definition, market segmentation, needs assessment, market awareness and attitude, image analysis, consumer behavior, and consumer satisfaction assessment to answer the question, *What is our primary market (market definition)?* The market for this study was defined as first-time, fulltime students who attended a small, private Midwest college with the focus on students choosing to major in business. *What are the major market segments in this market (Market Segmentation)?* This study investigated whether this college's first-time, fulltime entering college students could be segmented by academic major to answer the question, *What are the needs of each market segment (needs assessment)?*

The following student profile emerged from this research study:

- Demographic results: Approximately 98% of the students are of traditional college age (18 or 19); approximately 95% are white; approximately 52% are female; approximately 86% have a Christian religious preference; and the median family income is in the $40,000-59,000 range,

- Geographic results: Approximately 48% reported the distance from home is the 101 to 500 mile range followed by approximately 30% in the 51 to 100 mile range.

- Sociological and Psychological results: Get a better job, learn more, training more specific career were common reasons for going to college by all three academic major groups, whereas business majors added make money. The three major groups also agreed on the least influential reason for attending college: Mentor/role model, could not find a job, and nothing better to do.

Weinstein (2004, p. 49) explained that a complex segmentation model is not advisable if a simpler design adequately provides the required information. He also cautioned that, in data analysis, practicality is of the essence. The second step of the Marketing model is to design a customer-driven marketing strategy.

Marketing Strategies

Kotler (1977) suggested that the marketing strategy formula should begin with an analysis of the college's resources and mission. The information about the college's mission and resources was taken from their 2009-2010 Academic Catalog. The college's mission statement is given as follows:

> [College Name] develops students for lifelong success through innovative and imaginative academic and professional preparation. Students

realize our mission through: Real-world learning, expert personalized mentoring, a global perspective, and educational experiences for life success. We aspire to a remarkable educational community challenging every student, faculty and staff member to set and meet the highest standards of academic achievement, character, conscience, and compassion. Our informed, self-confident graduates leave here with a competitive advantage that enables them to succeed in a changing society. (p. 4)

While the college has many resource strengths upon which to build, the catalog highlights several as follows. The college awards bachelor of applied studies, bachelor of arts, bachelor of science, master of education and master of science degrees. Students can select from 43 majors and 15 pre-professional programs offered in five academic schools (p. 6). The student/faculty ratio is 13:1. More than 65% of the 79 fulltime professors hold doctorates or terminal degrees in their field. Faculty members serve as academic advisors during the student's undergraduate career, and are committed to personalized instruction and academic excellence (p. 6). Students participate in more than 65 campus organizations plus 19 intercollegiate sports and intramural athletics. In addition, the college has many structured leadership development programs in diverse areas. Spiritual development is enhanced through weekly chapel service and participation in religious groups. The college also provides a series of academic and cultural performances and lectures, for which students earn academic credit and provides each student the means to interact with people in all walks of life (p. 6). This college believes in prudent financial management demonstrated by operating within a balanced budget each year and since the late 1970s; the endowment of this college has increased from $663,000 to a current market value of over $93 million (p. 7). The college has also been nationally recognized as one of the top 20 Midwestern comprehensive colleges in *U.S. News & World Report*, as one of the nation's leading schools promoting student leadership in *The Templeton Guide: Colleges that Encourage Character*

Development, and as a "top college for top students" in *Peterson's Guide to Competitive Colleges* (p. 7).

The next step is to combine the information collected from the market, resource, and mission analyses. This information will be used to begin forming School of Business marketing strategies.

Implications for Policy and Practice

Kotler and Armstrong (2006, p. 46) defined marketing strategy by the marketing logic by which the business unit hopes to achieve its marketing objectives. The business unit in this study was the School of Business, and the key marketing objective was to build an initial student profile that could provide information to enhance the tools and systems used to recruit students. Thus, how can the findings of this study be put into action?

The first step is for the faculty and staff of this college's School of Business to answer the following questions for each of the "reason" and "choose" variables identified as being "very important" in their college decision making process:

Question 1: How do we in the School of Business define or perceive the named variable?

Question 2: What methods/artifacts do we currently have to support our "value" in this area?

Question 3: What current tools and information do we use to communicate or support this definition and/or perception?

Question 4: Are there additional or more effective tools and/or processes to get this information to prospective students?

Question 5: How and who should this information be providing to prospective students?

Question 6: What data do we need to collect and analyze to improve our tools and

processes?

The findings of the study indicated the top "reason" variable for attending college

was identified as to "get a better job". The following questions need to be asked to address

this variable.

- How does the faculty/staff define good jobs in the area of business currently?

- What are the current employment trends of students graduating from the School of

  Business?

- Who has this information currently?

- How do prospective student receive this information?

- What future tools and processes could be used to more efficiently and effectively

  communicate "value" to our prospective students?

The top "reason" variables used by students choosing to major in business were

identified in Chapter 4 as: get a better job, make more money, and training for a specific

career. The same process should be used for the top "choose" variables, which were good

academic reputation, offered financial aid, graduates get good jobs, and campus visit.

This college has an excellent opportunity to leverage the two possible predictors—

school reputation and advice of others (the results from the regression models) and campus

visit (reason for attending this college result). The data collected on the Millennial student's

characteristics suggest that these students are self confident, tech-savvy, and want to feel

special. This college has a national reputation for its use of technology—it was one of the

first colleges to issue all incoming students a laptop computer and access to a wireless

connection on campus. The college could run a pilot study allowing prospective business

students to design their own unique campus visit experience. The prospective business students could select different combinations of activities to fill the normal 4-hour campus visit experience. The prospective business student would be asked to pick from a structured set of options to facilitate efficient and effective use of the college's faculty/staff and other campus resources. The recommended options should include items that the student feels adds "value". For example, to reinforce "good academic reputation", prospective students could choose from a set of three options: (a) attend a session of a business course; (b) talk with a student and/or faculty member about the curriculum and degree options; or (c) have a discussion with current students about their academic experience. Another time slot could give the student an opportunity to gather specific information from college professors, career services, athletic coaches, financial aid counselors or other college resource personnel. The campus visit could also include gathering information regarding specific areas of campus activities—spiritual, cultural, travel, or service opportunities. The campus visit options could also be developed and revised based on the information and the tools and/or processes identified in the enrollment management plan developed by the School of Business.

In summary, today's first-year (freshmen) college students are being asked to make a series of very important choices that will have a major impact on their future success. The starting point for many of these students is to identify their academic major. For college faculty and staff, it is essential that they have a better understanding of the reasons and college-choice factors to utilize in this process. By identifying patterns and/or trends, faculty and staff can customize student resources, tools, and recruiting techniques to enhance student outcomes.

The study revealed that business students have a need to understand the job market and earning capabilities in the business areas; therefore, career services data would be a strong recruiting supplement. Another tool would be a cost/benefit breakdown to reveal tuition costs, financial aid availability, and future business career area salaries. The findings also disclosed that academic reputation and a solid educational foundation are very important. This means that colleges need to identify in their literature, recruiting, and advising tools how academic outcomes are measured and rank with other institutions. This information can be used to build better marketing and brand identifiers to maximize perceived value. The information can also be used to help strengthen the college's student services and career development functions. The findings indicated that, for students majoring in business, career services are essential.

One of the most important decisions students will make that will directly impact their social and economic status in today's workplace is college choice. Institutions should continue to evaluate their models, methods, and techniques to support this key decision-making process. In view of the rapidly changing environment for higher education (the demographic and economic environments and the competitive environment among institutions), Litten (1982, p. 401) advised that the ways in which students' attributes affect the college-selection process will need to be periodically monitored. This advice is still valid in today's college marketplace.

According to Litten (1980), market research will advance our understanding of the college selection process and improve our capacity to deliver our quality education services. Litten perceived that market research can better determine the cost/benefit relationships of

the services provided by the educational institutions so that those institutions can more efficiently and effectively use their limited resources (p. 44).

The findings of this study revealed that, for students who self-reported an academic major of business, their main reasons for attending college are economic. These students who chose to major in business were attending college to be able to get a better job, to be to make more money, and to get training for a specific career. They chose to attend this small, private Midwest College because the college has a very good academic reputation, they were offered financial aid, graduates from this college get good jobs, and they visited campus. Another encouraging result of the study is that approximately 81% of these students identified this particular college as their first choice in higher education institutions.

The survey results did not reveal solid information on an individual group of people (relatives, teachers, guidance counselors, and college recruiters) that influenced decisions on attending college and/or attending this particular college.

The findings pointed out the need to have recruiting and/or advising models that can be adapted to the changing economic and social factors used by college students in the complex decision-making process of college choice. Research by Hu (1990) demonstrated empirically that college choice does have a direct effect on a college student's intent to stay or leave an institution, increasing the value of an accurate and current student profile.

Limitations

This study provided a good set of statistical data and findings to enable this college's School of Business to formulate an enrollment management plan and structure for a new recruiting and advising model. However, there are some limitations in transferring the

findings into practice. First, this study only examined a small sample of students who chose to attend this particular college. Second, the student profile was developed based on exploring only seven questions from the CIRP survey. Although the questions were selected after a review of current literature, they might contain biases as a result of this researcher's experience in higher education. Third, this study only focused on the first two steps of the Marketing model (Kolter & Armstrong, 2006): Understanding the marketplace and customer (student) needs and wants and Design a customer-driven marketing strategy. Therefore, future research should be conducted to complete the marketing cycle.

Recommendations for Future Research

As mentioned previously, as this study addressed only the first two steps of the Marketing model by Kolter and Armstrong (2006), the marketing cycle research should be completed on the remaining three steps to complete the marketing cycle using both quantitative and qualitative research methods. This study provided data and findings on Step 1: Understanding the marketplace and customer needs and wants, and Step 2: Design a customer-driven marketing strategy. The next steps to be researched are:

- Step 3: Construct a marketing program that delivers superior value. The key elements are identified as product and service design to build strong brands, pricing to create value, distribution to manage;

- Step 4: Build profitable relationships and create customer delight. The key elements are customer relationship management to build strong relationships with chosen customers and partner relationship management to build strong relationships with marketing partners. And

- Step 5: Capture value from customers to create profits and customer equity. The key elements are to create satisfied, loyal customers, capture customer lifetime value, and increase share of market and share of customers (students).

Kotler and Armstrong (2006) explained that the first four steps in the marketing process create value for the customer. In the final step, the company (college) reaps the rewards of its strong customer (student) relationships by capturing value from its customer.

The private college in this study is currently collecting data from many diverse areas of the college as part of a comprehensive enrollment plan including data from the National Survey of Student Engagement, Foundation of Excellence Project, success coaching process, student exit interviews, and many other internal initiatives. The final research recommendation would be to develop a system for each of these individual data collection tools to be integrated into the five step model presented in this research study.

APPENDIX A. 2005 FRESHMAN SURVEY AND CODEBOOK

PLEASE PRINT NAME AND PERMANENT/HOME ADDRESS (one letter or number per box)

FIRST MI LAST When were you born?

NAME:

ADDRESS:

Month (01-12) Day (01-31) Year

CITY: STATE: ZIP: PHONE: — —

2005 STUDENT INFORMATION FORM

MARKING DIRECTIONS
Your responses will be read by an optical mark reader. Please,
- Use a pencil or black or blue pen.
- Fill in the oval completely.
- Erase cleanly any answer you wish to change or "X" out mark if in pen.

CORRECT MARK   INCORRECT MARKS

PLEASE PROVIDE YOUR ID NUMBER (as instructed) | Mark here if directed | GROUP CODE A | GROUP CODE B

1. Your sex: ○ Male ○ Female

2. How old will you be on December 31 of this year? (Mark one)
16 or younger . . ○ 21-24 . . . . . . ○
17 . . . . ○ 25-29 . . . . . . ○
18 . . . . ○ 30-39 . . . . . . ○
19 . . . . ○ 40-54 . . . . . . ○
20 . . . . ○ 55 or older . . ○

3. Is English your native language?
○ Yes ○ No

4. In what year did you graduate from high school? (Mark one)
2005 . . . . ○ Did not graduate but
2004 . . . . ○ passed G.E.D. test . ○
2003 . . . . ○ Never completed
2002 or earlier . ○ high school . . . . ○

5. Are you enrolled (or enrolling) as a:
(Mark one) Full-time student? . . . . ○
Part-time student? . . . ○

6. How many miles is this college from your permanent home? (Mark one)
5 or less ○ 11-50 ○ 101-500 ○
6-10 ○ 51-100 ○ Over 500 ○

7. What was your average grade in high school? (Mark one)
A or A+ ○ B ○ C ○
A– ○ B– ○ D ○
B+ ○ C+ ○

8. From what high school did you graduate?

Name of High School

City State

9. From what kind of high school did you graduate? (Mark one)
○ Public school (not charter or magnet)
○ Public charter school
○ Public magnet school
○ Private religious/parochial school
○ Private independent college-prep school
○ Home school

10. What were your scores on the SAT I and/or ACT?
SAT VERBAL . . . .
SAT MATH . . . .
ACT Composite . . . .

11. Citizenship status:
○ U.S. citizen
○ Permanent resident (green card)
○ Neither

12. Which of the following statements applies to you? (Mark one)
I was born in the United States . . . . ○
I came to the United States:
Before age 6 . . . . ○
Between ages 6-12 . . . . ○
After age 12 . . . . ○

13. If you or your parents were not born in the United States, indicate the country of birth:

You

Mother

Father

14. Prior to this term, have you ever taken courses for credit at this institution?
○ Yes ○ No

15. Since leaving high school, have you ever taken courses, whether for credit or not for credit, at any other institution (university, 4- or 2-year college, technical, vocational, or business school)?
○ Yes ○ No

16. Where do you plan to live during the fall term? (Mark one)
With my family or other relatives . . . . ○
Other private home, apartment, or room . ○
College residence hall . . . . ○
Fraternity or sorority house . . . . ○
Other campus student housing . . . . ○
Other . . . . ○

17. Is this college your: (Mark one)
First choice? . . . . . . ○ Less than third
Second choice? . . . ○ choice? . . . . . ○
Third choice? . . . . . ○

18. To how many colleges other than this one did you apply for admission this year?
None ○ 1 ○ 4 ○ 7-10 ○
2 ○ 5 ○ 11 or more ○
3 ○ 6 ○

19. Have you had, or do you feel you will need, any special tutoring or remedial work in any of the following subjects? (Mark all that apply)

	Have Had	Will Need
English	○	○
Reading	○	○
Mathematics	○	○
Social Studies	○	○
Science	○	○
Foreign Language	○	○
Writing	○	○

20. What is the highest academic degree that you intend to obtain? (Mark one in each column)

	Highest Planned	Highest preferred AT this College
None	○	○
Vocational certificate	○	○
Associate (A.A. or equivalent)	○	○
Bachelor's degree (B.A., B.S., etc.)	○	○
Master's degree (M.A., M.S., etc.)	○	○
Ph.D. or Ed.D.	○	○
M.D., D.O., D.D.S., or D.VM.	○	○
J.D. (Law)	○	○
B.D. or M.DIV. (Divinity)	○	○
Other	○	○

21. Are your parents: (Mark one)
Both alive and living with each other? . . ○
Both alive, divorced or living apart? . . . . ○
One or both deceased? . . . . ○

- 1 -

22. How much of your first year's educational expenses (room, board, tuition, and fees) do you expect to cover from each of the sources listed below? (Mark one answer for each possible source)

	None	$1-$500	$1,000-2,999	$3,000-5,999	$6,000-9,999	$10,000+
Family resources (parents, relatives, spouse, etc.)	○	○	○	○	○	○
My own resources (savings from work, work-study, other income)	○	○	○	○	○	○
Aid which need not be repaid (grants, scholarships, military funding, etc.)	○	○	○	○	○	○
Aid which must be repaid (loans, etc.)	○	○	○	○	○	○
Other than above	○	○	○	○	○	○

23. What is your best estimate of your parents' total income last year? Consider income from all sources before taxes. (Mark one)

- ○ Less than $10,000
- ○ $10,000-14,999
- ○ $15,000-19,999
- ○ $20,000-24,999
- ○ $25,000-29,999
- ○ $30,000-39,999
- ○ $40,000-49,999
- ○ $50,000-59,999
- ○ $60,000-74,999
- ○ $75,000-99,999
- ○ $100,000-149,999
- ○ $150,000-199,999
- ○ $200,000-249,999
- ○ $250,000 or more

24. Current religious preference: (Mark one in each column)

	Yours	Father's	Mother's
Baptist	○	○	○
Buddhist	○	○	○
Church of Christ	○	○	○
Eastern Orthodox	○	○	○
Episcopalian	○	○	○
Hindu	○	○	○
Islamic	○	○	○
Jewish	○	○	○
LDS (Mormon)	○	○	○
Lutheran	○	○	○
Methodist	○	○	○
Presbyterian	○	○	○
Quaker	○	○	○
Roman Catholic	○	○	○
Seventh Day Adventist	○	○	○
Unitarian/Universalist	○	○	○
United Church of Christ/Congregational	○	○	○
Other Christian	○	○	○
Other Religion	○	○	○
None	○	○	○

25. Are you: (Mark all that apply)

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

26. For the activities below, indicate which ones you did during the past year. If you engaged in an activity frequently, mark Ⓕ. If you engaged in an activity one or more times, but not frequently, mark Ⓞ (Occasionally). Mark Ⓝ (Not at all) if you have not performed the activity during the past year. (Mark one for each item)

	Frequently	Occasionally	Not at all
Attended a religious service	Ⓕ	Ⓞ	Ⓝ
Was bored in class	Ⓕ	Ⓞ	Ⓝ
Participated in organized demonstrations	Ⓕ	Ⓞ	Ⓝ
Tutored another student	Ⓕ	Ⓞ	Ⓝ
Studied with other students	Ⓕ	Ⓞ	Ⓝ
Was a guest in a teacher's home	Ⓕ	Ⓞ	Ⓝ
Smoked cigarettes	Ⓕ	Ⓞ	Ⓝ
Drank beer	Ⓕ	Ⓞ	Ⓝ
Drank wine or liquor	Ⓕ	Ⓞ	Ⓝ
Felt overwhelmed by all I had to do	Ⓕ	Ⓞ	Ⓝ
Felt depressed	Ⓕ	Ⓞ	Ⓝ
Performed volunteer work	Ⓕ	Ⓞ	Ⓝ
Played a musical instrument	Ⓕ	Ⓞ	Ⓝ
Asked a teacher for advice after class	Ⓕ	Ⓞ	Ⓝ
Voted in a student election	Ⓕ	Ⓞ	Ⓝ
Socialized with someone of another racial/ethnic group	Ⓕ	Ⓞ	Ⓝ
Came late to class	Ⓕ	Ⓞ	Ⓝ
Used the Internet for research or homework	Ⓕ	Ⓞ	Ⓝ
Performed community service as part of a class	Ⓕ	Ⓞ	Ⓝ
Used a personal computer	Ⓕ	Ⓞ	Ⓝ
Discussed religion	Ⓕ	Ⓞ	Ⓝ
Discussed politics: In class	Ⓕ	Ⓞ	Ⓝ
With friends	Ⓕ	Ⓞ	Ⓝ
With family	Ⓕ	Ⓞ	Ⓝ
Worked on a local, state, or national political campaign	Ⓕ	Ⓞ	Ⓝ

27. Did your high school require community service for graduation?

- ○ Yes
- ○ No

28. What is the highest level of formal education obtained by your parents? (Mark one in each column)

	Father	Mother
Grammar school or less	○	○
Some high school	○	○
High school graduate	○	○
Postsecondary school other than college	○	○
Some college	○	○
College degree	○	○
Some graduate school	○	○
Graduate degree	○	○

29. In deciding to go to college, how important to you was each of the following reasons? (Mark one answer for each possible reason)

	Very Important	Somewhat Important	Not Important
My parents wanted me to go	Ⓥ	Ⓢ	Ⓝ
I could not find a job	Ⓥ	Ⓢ	Ⓝ
Wanted to get away from home	Ⓥ	Ⓢ	Ⓝ
To be able to get a better job	Ⓥ	Ⓢ	Ⓝ
To gain a general education and appreciation of ideas	Ⓥ	Ⓢ	Ⓝ
There was nothing better to do	Ⓥ	Ⓢ	Ⓝ
To make me a more cultured person	Ⓥ	Ⓢ	Ⓝ
To be able to make more money	Ⓥ	Ⓢ	Ⓝ
To learn more about things that interest me	Ⓥ	Ⓢ	Ⓝ
To prepare myself for graduate or professional school	Ⓥ	Ⓢ	Ⓝ
A mentor/role model encouraged me to go	Ⓥ	Ⓢ	Ⓝ
To get training for a specific career	Ⓥ	Ⓢ	Ⓝ
To find my purpose in life	Ⓥ	Ⓢ	Ⓝ

30. How would you characterize your political views? (Mark one)

- ○ Far left
- ○ Liberal
- ○ Middle-of-the-road
- ○ Conservative
- ○ Far right

31. Rate yourself on each of the following traits as compared with the average person your age. We want the most accurate estimate of how you see yourself. (Mark one in each row)

	Highest 10%	Above Average	Average	Below Average	Lowest 10%
Academic ability	○	○	○	○	○
Artistic ability	○	○	○	○	○
Computer skills	○	○	○	○	○
Cooperativeness	○	○	○	○	○
Creativity	○	○	○	○	○
Drive to achieve	○	○	○	○	○
Emotional health	○	○	○	○	○
Leadership ability	○	○	○	○	○
Mathematical ability	○	○	○	○	○
Physical health	○	○	○	○	○
Public speaking ability	○	○	○	○	○
Religiousness	○	○	○	○	○
Self-confidence (intellectual)	○	○	○	○	○
Self-confidence (social)	○	○	○	○	○
Self-understanding	○	○	○	○	○
Spirituality	○	○	○	○	○
Understanding of others	○	○	○	○	○
Writing ability	○	○	○	○	○

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32. Mark only three responses, one in each column.

- Your mother's occupation
- Your father's occupation
- Your probable career occupation

NOTE: If your father or mother is deceased, please indicate his or her last occupation.

Accountant or actuary
Actor or entertainer
Architect or urban planner
Artist
Business (clerical)
Business executive (management, administrator)
Business owner or proprietor
Business salesperson or buyer
Clergy (minister, priest)
Clergy (other religious)
Clinical psychologist
College administrator/staff
College teacher
Computer programmer or analyst
Conservationist or forester
Dentist (including orthodontist)
Dietitian or nutritionist
Engineer
Farmer or rancher
Foreign service worker (including diplomat)
Homemaker (full-time)
Interior decorator (including designer)
Lab technician or hygienist
Law enforcement officer
Lawyer (attorney) or judge
Military service (career)
Musician (performer, composer)
Nurse
Optometrist
Pharmacist
Physician
Policymaker/Government
School counselor
School principal or superintendent
Scientific researcher
Social, welfare, or recreation worker
Therapist (physical, occupational, speech)
Teacher or administrator (elementary)
Teacher or administrator (secondary)
Veterinarian
Writer or journalist
Skilled trades
Laborer (unskilled)
Semi-skilled worker
Unemployed
Other
Undecided

33. Mark one in each row:

- Disagree Strongly
- Disagree Somewhat
- Agree Somewhat
- Agree Strongly

There is too much concern in the courts for the rights of criminals
Abortion should be legal
The death penalty should be abolished
Marijuana should be legalized
It is important to have laws prohibiting homosexual relationships
Racial discrimination is no longer a major problem in America
Realistically, an individual can do little to bring about changes in our society
Wealthy people should pay a larger share of taxes than they do now
Colleges should prohibit racist/sexist speech on campus
Same-sex couples should have the right to legal marital status
Affirmative action in college admissions should be abolished
The activities of married women are best confined to the home and family
Federal military spending should be increased
If two people really like each other, it's all right for them to have sex even if they've known each other for only a very short time
The federal government should do more to control the sale of handguns
Only volunteers should serve in the armed forces
The federal government is not doing enough to control environmental pollution
A national health care plan is needed to cover everybody's medical costs
Grading in the high schools has become too easy
Undocumented immigrants should be denied access to public education
Through hard work, everybody can succeed in American society
Dissent is a critical component of the political process

34. During your last year in high school, how much time did you spend during a typical week doing the following activities?

Hours per week: None, Less than 1 hour, 1-2, 3-5, 6-10, 11-15, 16-20, Over 20

Studying/homework
Socializing with friends
Talking with teachers outside of class
Exercise or sports
Partying
Working (for pay)
Volunteer work
Student clubs/groups
Watching TV
Household/childcare duties
Reading for pleasure
Playing video/computer games
Prayer/meditation

35. Do you have any concern about your ability to finance your college education? (Mark one)

None (I am confident that I will have sufficient funds)
Some (but I probably will have enough funds)
Major (not sure I will have enough funds to complete college)

36. Below are some reasons that might have influenced your decision to attend this particular college. How important was each reason in your decision to come here? (Mark one answer for each possible reason)

Very important, Somewhat important, Not important

My relatives wanted me to come here
My teacher advised me
This college has a very good academic reputation
This college has a good reputation for its social activities
I was offered financial assistance
The cost of attending this college
High school counselor advised me
Private college counselor advised me
I wanted to live near home
Not offered aid by first choice
This college's graduates gain admission to top graduate/professional schools
This college's graduates get good jobs
I was attracted by the religious affiliation/orientation of the college
I wanted to go to a school about the size of this college
Rankings in national magazines
Information from a website
I was admitted through an Early Action or Early Decision program
A visit to the campus

- 3 -

37. Below is a list of different undergraduate major fields grouped into general categories. Mark only one oval to indicate your probable field of study.

ARTS AND HUMANITIES
- Art, fine and applied
- English (language and literature)
- History
- Journalism
- Language and Literature (except English)
- Music
- Philosophy
- Speech
- Theater or Drama
- Theology or Religion
- Other Arts and Humanities

BIOLOGICAL SCIENCE
- Biology (general)
- Biochemistry or Biophysics
- Botany
- Environmental Science
- Marine (Life) Science
- Microbiology or Bacteriology
- Zoology
- Other Biological Science

BUSINESS
- Accounting
- Business Admin. (general)
- Finance
- International Business
- Marketing
- Management
- Secretarial Studies
- Other Business

EDUCATION
- Business Education
- Elementary Education
- Music or Art Education
- Physical Education or Recreation
- Secondary Education
- Special Education
- Other Education

ENGINEERING
- Aeronautical or Astronautical Eng
- Civil Engineering
- Chemical Engineering
- Computer Engineering
- Electrical or Electronic Engineering
- Industrial Engineering
- Mechanical Engineering
- Other Engineering

PHYSICAL SCIENCE
- Astronomy
- Atmospheric Science (incl. Meteorology)
- Chemistry
- Earth Science
- Marine Science (incl. Oceanography)
- Mathematics
- Physics
- Statistics
- Other Physical Science

PROFESSIONAL
- Architecture or Urban Planning
- Family & Consumer Sciences
- Health Technology (medical, dental, laboratory)
- Library or Archival Science
- Medicine, Dentistry, Veterinary Medicine
- Nursing
- Pharmacy
- Therapy (occupational, physical, speech)
- Other Professional

SOCIAL SCIENCE
- Anthropology
- Economics
- Ethnic Studies
- Geography
- Political Science (gov't., international relations)
- Psychology
- Social Work
- Sociology
- Women's Studies
- Other Social Science

TECHNICAL
- Building Trades
- Data Processing or Computer Programming
- Drafting or Design
- Electronics
- Mechanics
- Other Technical

OTHER FIELDS
- Agriculture
- Communications
- Computer Science
- Forestry
- Kinesiology
- Law Enforcement
- Military Science
- Other Field
- Undecided

DO NOT WRITE IN THIS AREA

38. Please indicate the importance to you personally of each of the following: (Mark one for each item)
(N) Not Important (S) Somewhat Important (V) Very Important (E) Essential

- Becoming accomplished in one of the performing arts (acting, dancing, etc.)
- Becoming an authority in my field
- Obtaining recognition from my colleagues for contributions to my special field
- Influencing the political structure
- Influencing social values
- Raising a family
- Having administrative responsibility for the work of others
- Being very well off financially
- Helping others who are in difficulty
- Making a theoretical contribution to science
- Writing original works (poems, novels, short stories, etc.)
- Creating artistic work (painting, sculpture, decorating, etc.)
- Becoming successful in a business of my own
- Becoming involved in programs to clean up the environment
- Developing a meaningful philosophy of life
- Participating in a community action program
- Helping to promote racial understanding
- Keeping up to date with political affairs
- Becoming a community leader
- Integrating spirituality into my life
- Improving my understanding of other countries and cultures

39. What is your best guess as to the chances that you will: (Mark one for each item)
(N) No Chance (VL) Very Little Chance (S) Some Chance (VG) Very Good Chance

- Change major field?
- Change career choice?
- Participate in student government?
- Get a job to help pay for college expenses?
- Work full-time while attending college?
- Join a social fraternity or sorority?
- Play varsity/intercollegiate athletics?
- Make at least a "B" average?
- Participate in student protests or demonstrations?
- Transfer to another college before graduating?
- Be satisfied with your college?
- Participate in volunteer or community service work?
- Seek personal counseling?
- Communicate regularly with your professors?
- Socialize with someone of another racial/ethnic group?
- Participate in student clubs/groups?
- Strengthen your religious beliefs/convictions?
- Participate in a study abroad program?

40. Do you give the Higher Education Research Institute (HERI) permission to include your ID number should your college request the data for additional research analyses? HERI maintains strict standards of confidentiality and would require your college to sign a pledge of confidentiality. ○ Yes ○ No

The remaining ovals are provided for questions specifically designed by your college rather than the Higher Education Research Institute. If your college has chosen to use the ovals, please observe carefully the supplemental directions given to you.

41. 42. 43. 44. 45. 46. 47.
48. 49. 50. 51. 52. 53. 54.
55. 56. 57. 58. 59. 60. 61.

THANK YOU!

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APPENDIX B. CODING AND SCALING OF THE VARIABLES

Higher Education Research Institute
Graduate School of Education & Information Studies
University of California, Los Angeles
3005 Moore Hall / Mailbox 951528
Los Angeles, CA 90095-1528

F I L E   D O C U M E N T A T I O N

2005 FRESHMAN SURVEY FILE

File Name: CIRP2005.DAT

Record Length: 317

2005 FRESHMAN SURVEY FILE

 1-4 ACE: College (ACE) I.D.
 5-6 SHRED: Shred (Breakout) Code
 7-8 GRPA: Group Code A
 9-10 GRPB: Group Code B
 11-16 SUBJID: Subject (SIF) I.D.
 17-25 SSN: Social Security Number
 26 SEX: Your sex
  1=Male
  2=Female
 27-28 AGE: How old will you be on December 31 of this year?
  1=16 or younger
  2=17
  3=18
  4=19
  5=20
  6=21 to 24
  7=25 to 29
  8=30 to 39
  9=40 to 54
  10=55 or older
 29 NATENGSP: Is English your native language?
  1=No
  2=Yes
 30 YRGRADHS: In what year did you graduate from high school?
  1=2005
  2=2004
  3=2003
  4=2002 or earlier
  5=Did not graduate but passed G.E.D. test
  6=Never completed high school
 31 FULLSTAT: Are you enrolled (or enrolling) as a:
  1=Part-time student
  2=Full-time student
 32 DISTHOME: How many miles is this college from your permanent home?
  1=5 or less
  2=6 to 10
  3=11 to 50
  4=51 to 100
  5=101 to 500
  6=Over 500
 33 HSGPA: What was your average grade in high school?
  1=D

2=C
3=C+
4=B-
5=B
6=B+
7=A-
8=A or A+

34 HSTYPE: From what kind of high school did you graduate?
 1=Public school (not charter or magnet)
 2=Public charter school
 3=Public magnet school
 4=Private religious/parochial school
 5=Private independent college prep school
 6=Home school

35 CITIZEN: Citizenship status
 1=Neither
 2=Permanent resident (green card)
 3=U.S. citizen

36 STUDBORN: Which of the following statements applies to you?
 1=I was born in the United States
 2=I came to the United States before age 6
 3=I came to the United States between ages 6-12
 4=I came to the United States after age 12

2005 FRESHMAN SURVEY FILE

37 PREVCRED: Prior to this term, have you ever taken courses for credit at this
  institution?
 1=No
 2=Yes

38 OTHRCOLL: Since leaving high school, have you ever taken courses, whether for credit
  or not for credit, at any other institution (university, 4- or 2-year
  college, technical, vocational, or business school)?
 1=No
 2=Yes

39 LIVEPLAN: Where do you plan to live during the fall term?
 1=With my family or other relatives
 2=Other private home, apartment, or room
 3=College dormitory
 4=Fraternity or sorority house
 5=Other campus student housing
 6=Other

40 CHOICE: Is this college your:
 1=Less than third choice
 2=Third choice
 3=Second choice
 4=First choice

41 NUMAPPLY: To how many colleges other than this one did you apply for admission this
  year?
 1=None
 2=One
 3=Two
 4=Three
 5=Four
 6=Five
 7=Six
 8=Seven to ten
 9=Eleven or more

 Had you had any special tutoring or remedial work in:
 1=Not marked
 2=Marked

42 HADREM1: English
43 HADREM2: Reading
44 HADREM3: Mathematics
45 HADREM4: Social Studies
46 HADREM5: Science
47 HADREM6: Foreign Language
48 HADREM7: Writing
 Do you feel you will need special tutoring or remedial work in:
  1=Not marked
  2=Marked
49 NEEDREM1: English
50 NEEDREM2: Reading
51 NEEDREM3: Mathematics
52 NEEDREM4: Social Studies
53 NEEDREM5: Science
54 NEEDREM6: Foreign Language
55 NEEDREM7: Writing
 What is the highest academic degree that you intend to obtain?
  1=None
  2=Vocational certificate
  3=Associate (A.A. or equivalent)
  4=Bachelor's degree (B.A., B.S., etc.)
  5=Master's degree (M.A., M.S., etc.)
  6=Ph.D. or Ed.D.
  7=M.D., D.O., D.D.S., D.V.M.
  8=J.D. (Law)
  9=B.D. or M.DIV. (Divinity)
  10=other
 56-57 DEGASP05: Highest planned
 58-59 HIDEGHRE: Highest planned at this college
 2005 FRESHMAN SURVEY FILE

 60 PARSTAT: Are your parents?
  1=One or both deceased
  2=Both alive, divorced or living apart
  3=Both alive and living with each other
 How much of your first year's educational expenses (room, board, tuition, and fees) do
 you expect to cover from:
  1=None
  2=Less than $1,000
  3=$1,000 - 2,999
  4=$3,000 - 5,999
  5=$6,000 - 9,999
  6=$10,000 +
 61 AID1:   Family resources (parents, relatives, spouse, etc.)
 62 AID2:   My own resources (savings from work, work-study, other income)
 63 AID3:   Aid which need not be repaid (grants, scholarships, military funding, etc.)
 64 AID4:   Aid which must be repaid (loans, etc.)
 65 AID5:   Other than above
 66-67 INCOME: What is your best estimate of your parents' total income last year?
  Consider income from all sources before taxes
  1=Less than $10,000
  2=$10,000 to $14,999
  3=$15,000 to $19,999
  4=$20,000 to $24,999
  5=$25,000 to $29,999
  6=$30,000 to $39,999
  7=$40,000 to $49,999
  8=$50,000 to $59,999
  9=$60,000 to $74,999

10=$75,000 to $99,999
11=$100,000 to $149,999
12=$150,000 to $199,999
13=$200,000 to $249,999
14=$250,000 or more
Current religious preference
1=Baptist
2=Buddhist
3=Church of Christ
4=Eastern Orthodox
5=Episcopalian
6=Hindu
7=Islamic
8=Jewish
9=LDS (Mormon)
10=Lutheran
11=Methodist
12=Presbyterian
13=Quaker
14=Roman Catholic
15=Seventh Day Adventist
16=Unitarian/Universalist
17=United Church of Christ/Congregational
18=Other Christian
19=Other Religion
20=None
68-69 RELIG05: Yours
70-71 FRELIG: Father's
72-73 MRELIG: Mother's
2005 FRESHMAN SURVEY FILE

Are you:
1=Not marked
2=Marked
74 RACE1:   White/Caucasian
75 RACE2:   African American/Black
76 RACE3:   American Indian/Alaska Native
77 RACE4:   Asian American/Asian
78 RACE5:   Native Hawaiian/Pacific Islander
79 RACE6:   Mexican American/Chicano
80 RACE7:   Puerto Rican
81 RACE8:   Other Latino
82 RACE9:   Other
Indicate which activities you did during the past year
1=Not at all
2=Occasionally
3=Frequently
83 ACT0501: Attended a religious service
84 ACT0502: Was bored in class
85 ACT0503: Participated in organized demonstrations
86 ACT0504: Tutored another student
87 ACT0505: Studied with other students
88 ACT0506: Was a guest in a teacher's home
89 ACT0507: Smoked cigarettes
90 ACT0508: Drank beer
91 ACT0509: Drank wine or liquor
92 ACT0510: Felt overwhelmed by all I had to do
93 ACT0511: Felt depressed
94 ACT0512: Performed volunteer work
95 ACT0513: Played a musical instrument

96 ACT0514: Asked a teacher for advice after class
97 ACT0515: Voted in student election
98 ACT0516: Socialized with someone of another racial/ethnic group
99 ACT0517: Came late to class
100 ACT0518: Used the Internet for research or homework
101 ACT0519: Performed community service as part of a class
102 ACT0520: Used a personal computer
103 ACT0521: Discussed religion
104 ACT0522: Discussed politics: In class
105 ACT0523: Discussed politics: With friends
106 ACT0524: Discussed politics: With family
107 ACT0525: Worked on a local, state, or national political campaign
108 CSVREQ: Did your high school require community service for graduation?
 1=No
 2=Yes
 What is the highest level of formal education obtained by your parents?
 1=Grammar school or less
 2=Some high school
 3=High school graduate
 4=Postsecondary school other than college
 5=Some college
 6=College degree
 7=Some graduate school
 8=Graduate degree
109 FATHEDUC: Father
110 MOTHEDUC: Mother
 In deciding to go to college, how important to you was each of the following reasons?
 1=Not important
 2=Somewhat important
 3=Very important
111 REASON01: My parents wanted me to go
112 REASON02: I could not find a job
113 REASON03: Wanted to get away from home
114 REASON04: To be able to get a better job
115 REASON05: To gain a general education and appreciation of ideas
116 REASON06: There was nothing better to do
117 REASON07: To make me a more cultured person
118 REASON08: To be able to make more money
 (continued)
2005 FRESHMAN SURVEY FILE

 In deciding to go to college, how important to you was each of the following reasons?
 (continued)
 1=Not important
 2=Somewhat important
 3=Very important
119 REASON09: To learn more about things that interest me
120 REASON10: To prepare myself for graduate or professional school
121 REASON11: A mentor/role model encouraged me to go
122 REASON12: To get training for a specific career
123 REASON13: To find my purpose in life
124 POLIVW05: How would you characterize your political views?
 1=Far right
 2=Conservative
 3=Middle-of-the-road
 4=Liberal
 5=Far left
 Rate yourself on each of the following traits as compared with the average person your
 age. We want the most accurate estimate of how you see yourself.
 1=Lowest 10%

2=Below average
3=Average
4=Above average
5=Highest 10%
125 RATE0501: Academic ability
126 RATE0502: Artistic ability
127 RATE0503: Computer skills
128 RATE0504: Cooperativeness
129 RATE0505: Creativity
130 RATE0506: Drive to achieve
131 RATE0507: Emotional health
132 RATE0508: Leadership ability
133 RATE0509: Mathematical ability
134 RATE0510: Physical health
135 RATE0511: Public speaking ability
136 RATE0512: Religiousness
137 RATE0513: Self-confidence (intellectual)
138 RATE0514: Self-confidence (social)
139 RATE0515: Self-understanding
140 RATE0516: Spirituality
141 RATE0517: Understanding of others
142 RATE0518: Writing ability
Career or Occupation of
1=Accountant or actuary
2=Actor or entertainer
3=Architect or urban planner
4=Artist
5=Business (clerical)
6=Business executive (management, administrator)
7=Business owner or proprietor
8=Business salesperson or buyer
9=Clergy (minister, priest)
10=Clergy (other religious)
11=Clinical psychologist
12=College administrator/staff
13=College teacher
14=Computer programmer or analyst
15=Conservationist or forester
16=Dentist (including orthodontist)
17=Dietitian or home economist
18=Engineer
19=Farmer or rancher
20=Foreign service worker (including diplomat)
21=Homemaker (full-time)
22=Interior decorator (including designer)
23=Lab technician or hygienist
24=Law enforcement officer
25=Lawyer (attorney) or judge
26=Military service (career)
(continued)
2005 FRESHMAN SURVEY FILE

Career or Occupation of (continued)
27=Musician (performer, composer)
28=Nurse
29=Optometrist
30=Pharmacist
31=Physician
32=Policymaker/Government
33=School counselor

34=School principal or superintendent
35=Scientific researcher
36=Social, welfare or recreation worker
37=Therapist (physical, occupational, speech)
38=Teacher or administrator (elementary)
39=Teacher or administrator (secondary)
40=Veterinarian
41=Writer or journalist
42=Skilled trades
43=Laborer (unskilled)
44=Semi-skilled worker
45=Unemployed
46=Other
47=Undecided **[student only]**

143-144 CAREER05: Student (probable)
145-146 FCAREERD: Father
147-148 MCAREERD: Mother
Student Opinions
1=Disagree strongly
2=Disagree somewhat
3=Agree somewhat
4=Agree strongly

149 VIEW0501: There is too much concern in the courts for rights of criminals
150 VIEW0502: Abortion should be legal
151 VIEW0503: The death penalty should be abolished
152 VIEW0504: Marijuana should be legalized
153 VIEW0505: It is important to have laws prohibiting homosexual relationships
154 VIEW0506: Racial discrimination is no longer a major problem in America
155 VIEW0507: Realistically, an individual can do little to bring about changes in our society
156 VIEW0508: Wealthy people should pay a larger share of taxes than they donow
157 VIEW0509: Colleges should prohibit racist/sexist speech on campus
158 VIEW0510: Same-sex couples should have the right to legal marital status
159 VIEW0511: Affirmative action in college admissions should be abolished
160 VIEW0512: The activities of married women are best confined to the home and family
161 VIEW0513: Federal military spending should be increased
162 VIEW0514: If two people really like each other, it's all right for them to have sex even if they've known each other for only a very short time
163 VIEW0515: The federal government should do more to control the sale of handguns
164 VIEW0516: Only volunteers should serve in the armed forces
165 VIEW0517: The federal government is not doing enough to control environmental pollution
166 VIEW0518: A national health care plan is needed to cover everybody's medical costs
167 VIEW0519: Grading in the high schools has become too easy
168 VIEW0520: Undocumented immigrants should be denied access to public education
169 VIEW0521: Through hard work, everybody can succeed in American society
170 VIEW0522: Dissent is a critical component of the political process
2005 FRESHMAN SURVEY FILE

During your last year in high school, how much time did you spend during a typical week doing:
1=None
2=Less than one hour
3=1 to 2 hours
4=3 to 5 hours
5=6 to 10 hours
6=11 to 15 hours
7=16 to 20 hours
8=Over 20 hours

171 HPW0501: Studying/homework
172 HPW0502: Socializing with friends
173 HPW0503: Talking with teachers outside of class

174 HPW0504: Exercise or sports
175 HPW0505: Partying
176 HPW0506: Working (for pay)
177 HPW0507: Volunteer work
178 HPW0508: Student clubs/groups
179 HPW0509: Watching TV
180 HPW0510: Household/childcare duties
181 HPW0511: Reading for pleasure
182 HPW0512: Playing video/computer games
183 HPW0513: Prayer/meditation
184 FINCON: Do you have any concern about your ability to finance your college education?
   1=None (I am confident that I will have sufficient funds)
   2=Some (but I probably will have enough funds)
   3=Major (not sure I will have enough funds to complete college)
 Reasons for choosing to attend this particular college
   1=Not important
   2=Somewhat important
   3=Very important
185 CHOOSE01: My relatives wanted me to come here
186 CHOOSE02: My teacher advised me
187 CHOOSE03: This college has a very good academic reputation
188 CHOOSE04: This college has a good reputation for its social activities
189 CHOOSE05: I was offered financial assistance
190 CHOOSE06: The cost of attending this college
191 CHOOSE07: High school guidance counselor advised me
192 CHOOSE08: Private college counselor advised me
193 CHOOSE09: I wanted to live near home
194 CHOOSE10: Not offered aid by first choice
195 CHOOSE11: This college's graduates gain admission to top graduate/professional schools
196 CHOOSE12: This college's graduates get good jobs
197 CHOOSE13: I was attracted by the religious affiliation/orientation of the college
198 CHOOSE14: I wanted to go to a school about the size of this college
199 CHOOSE15: Rankings in national magazines
200 CHOOSE16: Information from a website
201 CHOOSE17: I was admitted through an Early Action or Early Decision program
202 CHOOSE18: A visit to campus
203-204 MAJOR05: Student's Probable Major
   1=Art, fine and applied
   2=English (language & literature)
   3=History
   4=Journalism
   5=Language and Literature (except English)
   6=Music
   7=Philosophy
   8=Speech
   9=Theater or Drama
   10=Theology or Religion
   11=Other Arts and Humanities
   12=Biology (general)
   13=Biochemistry or Biophysics
   14=Botany
   15=Environmental Science
   16=Marine (Life) Science
   17=Microbiology or Bacteriology
 (continued)
 2005 FRESHMAN SURVEY FILE

 203-204 MAJOR05: Student's Probable Major (continued)
   18=Zoology

19=Other Biological Science
20=Accounting
21=Business Administration (general)
22=Finance
23=International Business
24=Marketing
25=Management
26=Secretarial Studies
27=Other Business
28=Business Education
29=Elementary Education
30=Music or Art Education
31=Physical Education or Recreation
32=Secondary Education
33=Special Education
34=Other Education
35=Aeronautical or Astronautical Engineering
36=Civil Engineering
37=Chemical Engineering
38=Computer Engineering
39=Electrical or Electronic Engineering
40=Industrial Engineering
41=Mechanical Engineering
42=Other Engineering
43=Astronomy
44=Atmospheric Science (incl. Meteorology)
45=Chemistry
46=Earth Science
47=Marine Science (incl. Oceanography)
48=Mathematics
49=Physics
50=Statistics
51=Other Physical Science
52=Architecture or Urban Planning
53=Family & Consumer Sciences
54=Health Technology (medical, dental, laboratory)
55=Library or Archival Science
56=Medicine, Dentistry, Veterinary medicine
57=Nursing
58=Pharmacy
59=Therapy (occupational, physical, speech)
60=Other Professional
61=Anthropology
62=Economics
63=Ethnic Studies
64=Geography
65=Political Science (gov't, int. relations)
66=Psychology
67=Social Work
68=Sociology
69=Women's Studies
70=Other Social Science
71=Building Trades
72=Data Processing or Computer Programming
73=Drafting or Design
74=Electronics
75=Mechanics
76=Other Technical
77=Agriculture
78=Communications

79=Computer Science
80=Forestry
81=Kinesiology
82=Law Enforcement
83=Military Science
84=Other Field
85=Undecided

2005 FRESHMAN SURVEY FILE

Indicate the importance to you personally of:
1=Not important
2=Somewhat important
3=Very important
4=Essential

205 GOAL0501: Becoming accomplished in one of the performing arts (acting, dancing, etc.)
206 GOAL0502: Becoming an authority in my field
207 GOAL0503: Obtaining recognition from my colleagues for contributions to my special field
208 GOAL0504: Influencing the political structure
209 GOAL0505: Influencing social values
210 GOAL0506: Raising a family
211 GOAL0507: Having administrative responsibility for the work of others
212 GOAL0508: Being very well off financially
213 GOAL0509: Helping others who are in difficulty
214 GOAL0510: Making a theoretical contribution to science
215 GOAL0511: Writing original works (poems, novels, short stories, etc.)
216 GOAL0512: Creating artistic work (painting, sculpture, decorating, etc)
217 GOAL0513: Becoming successful in a business of my own
218 GOAL0514: Becoming involved in programs to clean up the environment
219 GOAL0515: Developing a meaningful philosophy of life
220 GOAL0516: Participating in a community action program
221 GOAL0517: Helping to promote racial understanding
222 GOAL0518: Keeping up to date with political affairs
223 GOAL0519: Becoming a community leader
224 GOAL0520: Integrating spirituality into my life
225 GOAL0521: Improving my understanding of other countries and cultures

What is your best guess as to the chances that you will
1=No chance
2=Very little chance
3=Some chance
4=Very good chance

226 FUTACT01: Change major field
227 FUTACT02: Change career choice
228 FUTACT03: Participate in student government
229 FUTACT04: Get a job to help pay for college expenses
230 FUTACT05: Work full-time while attending college
231 FUTACT06: Join a social fraternity or sorority
232 FUTACT07: Play varsity/intercollegiate athletics
233 FUTACT08: Make at least "B" average
234 FUTACT09: Participate in student protests or demonstrations
235 FUTACT10: Transfer to another college before graduating
236 FUTACT11: Be satisfied with your college
237 FUTACT12: Participate in volunteer or community service work
238 FUTACT13: Seek personal counseling
239 FUTACT14: Communicate regularly with your professors
240 FUTACT15: Socialize with someone of another racial/ethnic group
241 FUTACT16: Participate in student clubs/groups
242 FUTACT17: Strengthen religious beliefs/convictions
243 FUTACT18: Participate in a study abroad program
244 PERMIT05: Do you give the Higher Education Research Institute (HERI) permission to include your

ID number should your college request the data for additional research analyses?
 1=No
 2=Yes
 Optional Questions
 1=A
 2=B
 3=C
 4=D
 5=E
 245 OPTQ0501: Question #41
 246 OPTQ0502: Question #42
 247 OPTQ0503: Question #43
 248 OPTQ0504: Question #44
 249 OPTQ0505: Question #45
 250 OPTQ0506: Question #46

251 OPTQ0507: Question #47
(continued)

2005 FRESHMAN SURVEY FILE

 Optional Questions (continued)
 1=A
 2=B
 3=C
 4=D
 5=E
 252 OPTQ0508: Question #48
 253 OPTQ0509: Question #49
 254 OPTQ0510: Question #50
 255 OPTQ0511: Question #51
 256 OPTQ0512: Question #52
 257 OPTQ0513: Question #53
 258 OPTQ0514: Question #54
 259 OPTQ0515: Question #55
 260 OPTQ0516: Question #56
 261 OPTQ0517: Question #57
 262 OPTQ0518: Question #58
 263 OPTQ0519: Question #59
 264 OPTQ0520: Question #60
 265 OPTQ0521: Question #61
 266-267 SCAREERA: Student's career (aggregated)
 1=Artist
 2=Business
 3=Business (clerical)
 4=Clergy
 5=College teacher
 6=Doctor (MD or DDS)
 7=Education (secondary)
 8=Education (elementary)
 9=Engineer
 10=Farmer or forester
 11=Health professional
 12=Homemaker (full-time)
 13=Lawyer
 14=Military (career)
 15=Nurse
 16=Research scientist
 17=Social/welfare/rec worker
 18=Skilled worker

19=Semi-skilled worker
20=Unskilled worker
21=Unemployed
22=Other
23=Undecided

Parents' Occupation (aggregated)
1=Artist
2=Business
3=Business (clerical)
4=Clergy
5=College teacher
6=Doctor (MD or DDS)
7=Education (secondary)
8=Education (elementary)
9=Engineer
10=Farmer or forester
11=Health professional
12=Homemaker (full-time)
13=Lawyer
14=Military (career)
15=Nurse
16=Research scientist
17=Social/welfare/rec worker
18=Skilled worker
19=Semi-skilled worker
20=Unskilled worker
21=Unemployed
22=Other

268-269 FCAREERA: Father's
270-271 MCAREERA: Mother's
2005 FRESHMAN SURVEY FILE

272-273 MAJOR05A: Student's Major (aggregated)
1=Agriculture
2=Biological Science
3=Business
4=Education
5=Engineering
6=English
7=Health Professional
8=History or Political Science
9=Humanities
10=Fine Arts
11=Mathematics or Statistics
12=Physical Science
13=Social Science
14=Other Technical
15=Other Non-technical
16=Undecided

Response to
1=No
2=Yes

274 RESPRACE: Race
275 STUDSTAT: Norms Status
1=First-time, full-time
2=First-time, part-time
3=Not a freshman

College Entrance Exam Scores

276-278 SATV: SAT Verbal

279-281 SATM: SAT Math
282-283 ACTCOMP: ACT Composite
 Date of Birth

284-285 BMONTH: Month
286-287 BDAY: Day
288-289 BYEAR: Year
290-291 HOMSTATE: Student's Home State
 (see Appendix)
292-296 HOMEZIP: Student's Home ZIP Code
297-298 STRAT: Stratification Cell
  1=Public university - low select
  2=Public university - medium select
  3=Public university - high select
  4=Private university - low select
  5=Private university - medium select
  6=Private university - high select
  7=Public 4-yr - low select
  8=Public 4-yr - medium select
  9=Public 4-yr - high select
  10=Public 4-yr - unknown select
  11=Nonsectarian 4-yr - low select
  12=Nonsectarian 4-yr - medium select
  13=Nonsectarian 4-yr - high select
  14=Nonsectarian 4-yr - very high select
  15=Nonsectarian 4-yr - unknown select
  16=Catholic 4-yr - low select
  17=Catholic 4-yr - medium select
  18=Catholic 4-yr - high select
  19=Catholic 4-yr - unknown select
  20=Other religious 4-yr - very low select
  21=Other religious 4-yr - low select
  22=Other religious 4-yr - medium select
  23=Other religious 4-yr - high select
  24=Other religious 4-yr - unknown select
  25=Public 2-yr - very low enroll
  26=Public 2-yr - low enroll
  27=Public 2-yr - medium enroll
  28=Public 2-yr - high enroll

2005 FRESHMAN SURVEY FILE

297-298 STRAT: Stratification Cell (continued)
  29=Public 2-yr - very high enroll
  30=Private 2-yr - very low enroll
  31=Private 2-yr - low enroll
  32=Private 2-yr - medium enroll
  33=Private 2-yr - high enroll
  34=Public 4-yr - predom black
  35=Nonsectarian 4-yr - predom black
  36=Public 2-yr - predom black
  37=Private 2-yr - predom black
  38=Other religious 4-yr - predom black
  39=Catholic 4-yr - predom black
  40=Public university - predom black
  41=Private university - predom black
299 INSTRACE: Institutional Race
  1=White
  2=Black

300 INSTCONT: Institutional Control
 1=Public
 2=Private
301 INSTTYPE: Institutional Type
 1=University
 2=4-year college
 3=2-year college
302 INSTSEX: Institutional Sex
 1=Male only
 2=Female only
 3=Coed
 4=Coordinate
303-304 STATE: Institution's State
 (see Appendix)
305 ACEREG: Region (American Council on Education)
 1=East
 2=Midwest
 3=South
 4=West
306 OEREG: Region (Office of Education)
 1=North Atlantic
 2=Great Plains & Lakes
 3=Southeast
 4=West & Southwest
 5=U.S. service schools
 7=Outlying Areas
307 OBEREG: Region (Office of Business Economics)
 0=U.S. service schools
 1=New England
 2=Mideast
 3=Great Lakes
 4=Plains
 5=Southeast
 6=Southwest
 7=Rocky Mountains
 8=Far West
 9=Outlying areas
308-311 SELECT: Institutional Selectivity (SATV+SATM)
312 NORMSTAT: Norms Status
 1=School & student in Norms
 2=School in Norms, student not in Norms
 3=School not in Norms
313-317 STUDWGT: Weighting Factor (F5.1)
APPENDIX

 HOMSTATE,STATE: Student's & Institution's State
 10=Alabama
 11=Alaska
 12=Arizona
 13=Arkansas
 14=California
 15=Colorado
 16=Connecticut
 17=Delaware
 18=District of Columbia
 19=Florida
 20=Georgia
 21=Hawaii
 22=Idaho

23=Illinois
24=Indiana
25=Iowa
26=Kansas
27=Kentucky
28=Louisiana
29=Maine
30=Maryland
31=Massachusetts
32=Michigan
33=Minnesota
34=Mississippi
35=Missouri
36=Montana
37=Nebraska
38=Nevada
39=New Hampshire
40=New Jersey
41=New Mexico
42=New York
43=North Carolina
44=North Dakota
45=Ohio
46=Oklahoma
47=Oregon
48=Pennsylvania
49=Rhode Island
50=South Carolina
51=South Dakota
52=Tennessee
53=Texas
54=Utah
55=Vermont
56=Virginia
57=Washington
58=West Virginia
59=Wisconsin
60=Wyoming
61=U.S. Service Schools

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