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# College Choice and Persistence at a Small Private Catholic College: Why Do Students Leave?

James Theeuwes

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COLLEGE CHOICE AND PERSISTENCE AT A SMALL PRIVATE  
CATHOLIC COLLEGE: WHY DO STUDENTS LEAVE?

by

James L. Theeuwes

Submitted in partial fulfillment of  
the requirements for the degree

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## Abstract

In today's world a college education is very important in terms of both a person's cultural and human capital. A college education can increase a person's human capital and either replicate or enhance one's cultural capital. The purpose of this study was to focus on the variables of net college price, institutional grant aid, a family's adjusted gross income, if a student was a first generation college student and a student's high school preparedness and their relationship to persistence. Students are making decisions that impact their future each and every day, when they pick the "right" college to attend. Colleges also participate in the college choice process by picking the "right" students based on their admissions criteria. Once the college choice decision is made by both parties, it is persistence that then matters. Small private Catholic colleges that have limited resources are very concerned with persistence from both an institutional and student point of view. Increasing a student's chance of persistence is a very positive outcome for a college of this type. If a model could be used at the time of admissions to predict a student's chance of persistence, then those students who are admitted but who would be at risk of attrition could receive support services provided by the college in order to increase their persistence. The 2004-05 freshmen cohort of 715 traditional students at a small private Catholic college were studied quantitatively using a logistic regression model. The model was run on the entire sample, on the sample based on SES groupings, and then on the sample based on gender. The results of the model indicate that these variables were not helpful in predicting persistence. Several reasons are discussed for this: lack of variability of the student data for this college, the college's financial aid policy and the sociological and psychological variables (beside economic and academic) that can cause

a student not to persist.

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# CHAPTER I

## INTRODUCTION

A college education is important in today's society for a variety of cultural and economic reasons. Going to college enhances a student's cultural and human capital; cultural capital is wealth based on social status and education (Bourdieu, 1983) and human capital is the economic improvement of social status based on wages made through an increase in skills from education and training (Jacoby, 2004).

The decision to go to the "right" college becomes significant in terms of cultural and human capital. The term "right" college has various meanings. In economic terms it would be the college that provides the student with the "best" educational advantage. This educational advantage would translate into higher potential earnings for a graduate, thus increasing a student's human capital and increasing a student's ability to acquire additional cultural capital. In college jargon, the "right" college refers to a student's "fit". If a student feels "at home" at a college, the student increases their chances of persistence (Bean, 1990; Pascarella & Terenzini, 1991; Spady, 1970, 1971; Tinto, 1975, 1987, 1993, 1998). Fit can be represented by various things from dorm living to academics and everything in between. Thus, the college choice decision becomes an important decision for both the student and the college.

The stakeholders in this decision making process are the students, their families and the college of their choice. How students and their families choose a college is determined by many variables including college price, location of the college, college major, college amenities and financial aid packages.

Students are chosen by colleges based on the variables of high school grade point average, scores on standardized tests, high school rankings and the student's ability to pay.

For the individual, the decision making process can be one of comparison shopping (comparing different institutions), love at first sight (a student and family visits and decides that this college is the right college) or it can be a legacy (my dad went here, so I'm coming here). For the colleges, the choice process is a numerical process.

College admission personnel review admission files and compare the student file to a set of predefined standards, and if a student meets these standards, then they are accepted.

Once the college choice decision is made, then persistence becomes the most important objective of a college career. Persistence is usually defined as obtaining a degree, for this study persistence is defined as completing the freshmen year of college and continuing on. Institutional concern with persistence centers on the first year, as the majority of leaving takes place during this year (Tinto, 1993).

College persistence matters because of the promise that higher education represents. Higher education has long been one of the main drivers of opportunity, social mobility and economic progress in our society (Carey, 2004). Opportunity, social mobility and economic progress are demonstrated by studies that indicate that college graduates earn twice as much as high school graduates and six times as much as high school dropouts and a college educated person's wealth is two and one half times that of a high school graduate and five times that of a high school drop out (DesJardins & Ahlburg & McCall, 2002). These outcomes indicate that persistence does matter over a student's economic lifetime.

If future earnings are important, then the obtaining of a college degree becomes a desirable economic outcome. Economists believe workers will receive a positive return on the investment that they make in their human capital (the improvement of self) through education. Jacoby (2004) explains that human capital theory stresses that education and training can alter the wages that people are paid, thus increasing their level of consumption. Consumption, from an economist's viewpoint, is what powers the American economic system (Mankiw, 1998).

Although a better educated population may provide the country with a stronger economic base, Paulsen and St. John (2002) argue that educational institutions and policies play a role in the class based reproduction of social and economic stratification in American society. If this argument is true then a reason to go to college is to replicate one's social status or improve it. Pierre Bourdieu, a French sociologist and anthropologist, used the term cultural capital to describe wealth based on social status which comes from having or acquiring an education (Lawley, 1994). Thus, cultural capital is a framework that can be used to study college choice and persistence because, if a student makes the "right" college choice and this choice leads to graduation, then the student's socioeconomic status (SES) can be enhanced (Zhang, 2005).

Choosing the right college is thought to increase a student's chance for graduation which indicates a potential link between college choice and persistence. Researchers have demonstrated this link through the analysis of the following variables: college price, financial aid, ethnicity, age, gender, socioeconomic status (SES) and academic preparedness (Bauer & Liang, 2003, DesJardins, et al., 2002; Griswald, 1999; Heller, 1999; Leppel, 2002; McDonough, Korn & Yamasaki, 1997; Paulsen & St John,

2002; Pritchard & Wilson, 2003; Sireci, Zanetti & Berger, 2003; Somers, 1995; St John, Hu, Simmons & Musoba, 2002; St. John & Musoba & Simmons, 2003; Tinto, 1993).

Researchers have provided data and information about college choice and persistence from very large samples representing various types of colleges ranging from large public universities to the elite private colleges (Advisory Committee on Student Financial Assistance, 2002; Heller, 1999; Horn & Wei & Carroll, 2002; Paulsen & St. John, 2002; Strauss & Volkwein, 2004). This study offers a perspective from a small private Catholic college.

## The Problem

### *College Choice*

The college choice decision and its relationship to persistence is important based on the observation that over 40% of all students who start college never finish (Strauss & Volkwein, 2004). This percentage represents a failure of the college choice decision when dealing with persistence.

Students and families make the decision, but once that decision is made, the colleges have the responsibility to provide the necessary “tools” for a student to be successful. These include: academic, financial and social tools. When students fail to persist these tools are normally the three elements which they cite as factors in their failure.

Although colleges offer the tools for success students must use them. But, a 40% attrition rate over a student’s academic career (Strauss & Volkwein, 2004) indicates that these tools are not being used. This lack of persistence represents a loss to the individual, college and society in the form of wasted economic resources

*Persistence*

Once a college choice is made, persistence (which is obtaining a college degree) becomes important. For this study persistence is defined as finishing the freshmen year of college and continuing to the sophomore year. Table 1 demonstrates that over a twelve year period there has been an actual decline in the persistence rate for college freshmen across the entire nation.

Table 1

*Retention rates- First-time College Freshmen returning their Second Year*

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1990	1995	1999	2001	2002
75.0%	74.2%	74.1 %	74.1%	73.6%

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Note: From The NCHEMS Information Center. Retrieved on 01/09/2006 from the Higher Education Information Web site: <http://www.higheredinfo.org/dbrowser/index>.

Table 1 also indicates that in 2002, 26.4% of all freshmen college students failed to return for their second year of studies. Since there is an overall attrition rate of 40% (Strauss & Volkwein, 2004) 50% of all attrition (26.4%) occurs between the freshmen and sophomore years, which is the focus of this research. Research also indicates that nationally the graduation rate of state institutions is normally lower than private institutions and the longer a student is in college, the more it costs and the higher the probability that students will not complete their degree (MacDowell, 2005).

Even with soaring postsecondary enrollments, the proportion of college students completing degrees of any type has remained flat during the past quarter-century (Gladieux, 2002). This would suggest a “natural rate of attrition” that may be difficult to

influence. In economic terms this is seen as a very inefficient use of the limited amount of educational resources that are available at the federal, state and institutional level, because of the lost opportunity cost (opportunity cost is the cost of not being able to do something at the expense of doing something else).

College price, financial aid, SES, high school preparation and a student's cultural capital are all quantifiable variables that affect persistence. Other research has indicated that the quantity and type of a student's socialization and psychological factors can affect persistence (Bean, 1990; Hatcher; Kryter, Prus & Fitzgerald, 1992; Somers & Cofer, 1998; Strauss & Volkwein, 2004; Tinto, 1987).

Student commitment is one of the terms used in studying the psychological factors. Strauss and Volkwein (2004) defined institutional commitment as a student's overall satisfaction, sense of belonging, perception of quality, match with and attraction to a particular institution. While a student's commitment is not part of this study, researchers (Strauss & Volkwein, 2004) feel that it to can be a strong predictor of a student's intent to persist.

Socialization can be anything from joining various organizations to becoming involved in one's chosen major. This bonding with the institution (sense of belonging) during the first year of college can aid persistence (Cabrera, Nora & Castaneda, 1993; Leppel, 2002). Students who identify with the college are less likely to leave and if they do experience difficulties that might affect their persistence they are apt to seek out and receive the necessary help to remain as a student.

## The Variables Related to College Choice and Persistence

### *Price*

One of the important variables in college choice and persistence is college price or cost. From a student's prospective, price and cost are synonyms and they refer to tuition, fees, room, board and other costs such as books, transportation and spending money. For a college, the cost to produce a student's education include faculty and staff salaries, benefits and expenditures for items other than teaching such as technology, facilities, student affairs, marketing and public relations and general administration (Johnstone, 1998). Price is defined as what the college would charge for tuition, fees, room and board. For this study, price is defined at the amount the college charges for tuition, fees, room and board.

College price is important in the college choice decision. It represents a significant financial issue for the students, as the cost of a college education has increased dramatically over the last 20 years (Horn, et al., 2002; Horn & Chen & Chapman, 2003; Horn & Wei & Berker & Carroll, 2003). College tuition and its add-ons (fees, room and board) make higher education the second largest expense (after home mortgages) for most American families (Wood, 2004).

If the price is too high students will not bother to apply for admission to a particular college thus limiting a student's ability to increase their human capital value and perhaps limiting their ability to grow their cultural capital. Therefore, the price that is charged can directly influence both who attends and how a family pays for college (Lee, 1999).

If college price has a direct impact on student choice, then the ability to pay for

college becomes important. The ability to pay for college has always been considered primarily a family responsibility which is met through some combination of income, savings and borrowing (Choy & Berker & Carroll, 2003). This responsibility can be helped by government financial aid, institutional financial aid and private donations. This study provides information on the effect that college price and financial aid have on student persistence.

Whether a college is public or private, the issue of persistence is important. Students and families make economic decisions based on price. Therefore, it could be assumed that those colleges with lower price (normally state institutions) would enroll a certain number of students based on price and that their rate of persistence would then be high based on lower price. This is not the case, normally public institutions have higher attrition rates than do private colleges (MacDowell, 2005). Price is important, but it is not the only variable involved in the persistence discussion.

Colleges compete with each other on price when it comes to the college choice decision. They offer financial resources to help families meet this price obligation in the form of financial aid packages to the student and families that can determine whether or not a student chooses a particular college.

### *Financial Aid*

Financial aid is directly associated with college price and the college choice decision for both the student and institution. In today's market driven economy this choice centers on price. Sticker price is the published price and some students do not get past the "sticker" shock. They cease to see college as an economic option, and choose not to attend. But other students are luckier, as colleges offer financial aid packages to help

ease the “sticker” shock that they face thus helping them make their college choice.

Financial aid packages include: federal loans and grants, state grants, institutional aid, work and other outside aid. Institutional aid is the newest “member” of this aid package and as such is embraced by enrollment management (this is the body of knowledge dealing with admission issues). The term that is used for the administration of institutional aid is “discounting.” Colleges recruit a number and mix of students and offer these students financial aid packages to help them make the college choice decision. The financial aid packages are tied to the college’s enrollment and budget goals, and if successful in enrolling these students the colleges will meet their enrollment objectives. For the student and family the financial aid package represents affordability, if it is affordable then the student and family will decide to come, if not they will not attend.

To help meet affordability and enhance the student’s college choice decision institutions are increasing their institutional financial aid. In 1992-93, 17% of undergraduates at public institutions received institutional aid averaging about \$2,200. By 1999-2000 that number rose to 23%, with the average student receiving about \$2,700. Private colleges reported that 47% of their undergraduates were receiving institutional aid averaging about \$5,900 in 1992-93, while 58% did so in 1999-2000, with the average student receiving about \$7,000 (Choy, et al., 2003).

Federal financial aid is also increasing. This aid is in the form of the Pell Grant, federal work study, and loans. All three types of aid are family income dependent. The lower a student and family income, the higher the aid. For example, the Pell Grant for 2002 was capped at \$3,700 (for 2005 the level was \$4,050) for the lowest income level student.

State financial aid is often more critical than federal financial aid in the decision making process for students deciding on which college to attend. In contrast to federal financial aid policies, which are consistent across the country, state financial aid policy characteristics, including eligibility criteria and average awards, vary from state to state.

Public (state) college tuition policy has had a direct effect on the college choice decision. Public college tuition has been kept low compared to private college prices, largely in recognition of the societal benefits of public higher education (Heller, 1999). These benefits include lower crime rates, lower welfare rates, higher employment rates and higher tax revenue. Therefore, a policy that keeps tuition low may be in society's best interest.

#### *Socioeconomic Status*

The type of state grant, either merit based or need based, can affect the college choice decision by limiting who applies and who ultimately attends colleges and persists. Research shows that students from low socioeconomic (SES) backgrounds tend not to qualify for merit based financial aid grants (Perna & Titus, 2004). These students usually benefit more from the traditional need based grant framework for financial aid. The need based framework has been used by the Federal government to allocate educational resources. Thus, merit based aid can be a factor determining who attends college and where he/she attends by limiting choice.

Socioeconomic status (SES) becomes an important variable along with college price and financial aid in making the college choice decision. Students from lower SES backgrounds will not even apply to some colleges because of their price.

Paulsen and St. John (2002) noted that an understanding of social class is critical

to understanding the role of finances in a student's choice and persistence decisions.

Social class plays an important role in education and persistence and therefore should be a critical element when examining educational policy of any institution. In this study a student's SES was examined to see what type of student was choosing the college, which students were leaving the college and based on this information whether the college could have predicted this outcome and provided necessary resources to change it.

These prospective students all face the challenges presented by the variables of price, financial aid, SES and high school preparation.

### *High School Preparedness*

College preparation during high school has been found to be significant to college persistence (Perna & Titus, 2004). Clifford Adelman, a researcher for the U.S. Education Department states that the academic intensity of a student's high school curriculum still counts more than anything else in a student's pre-collegiate history in providing momentum toward completing a bachelor's degree (Capriccioso, 2006). In "Answers in the Tool Box," a longitudinal study which explores the high school class of 1992, Alderman states that students from the lowest socioeconomic status quintile attend high schools that are much less likely to offer any math above Algebra II, in contrast to those schools attended by students in the upper economic quintile. This would indicate that these students are at a disadvantage when it comes to persisting at college as research indicates that academic preparation in high school can be a predictor of college success, this preparation can be measured by the number of higher level math courses (Algebra I, Geometry, Algebra II and one other advanced class) that a student takes (Perna & Titus, 2004). Further, Adelman states in his report, that the highest level of mathematics

reached in high school continues to be a key marker in pre-collegiate momentum, with the tipping point of momentum toward a bachelor's degree now firmly above Algebra II (Capriccioso, 2006).

This preparation begins early in a high school student's academic career and a student's academic record is used by colleges to make their admissions decisions (Schneider, 2003). Today's adolescents have high ambitions and sometimes get caught in what Schneider (2003) calls an "ambition paradox"; students have high expectations that are filled with problems. These problems can be financial but most are related to their high school preparation and their academic advising from high school and college.

### *Cultural Capital*

When students come to college, they are treated as "equals." High school "cliques" are forgotten, the playing field is level and all students have the same chance for success. But students have different expectation levels based on their economic and cultural capital. Economic capital refers to the level of income that a family experiences and cultural capital can be thought of as the traits that are passed on by parents to their children in the form of attitudes, preferences and behaviors (Walpole, 2003).

Bourdieu (1977, 1990), provides an alternative way to conceptualize how social and cultural forces influence educational attainment (Paulsen & St. John, 2002). He believed that a person's attitudes, goals, behaviors and choices are influenced by internalized beliefs which they receive from their immediate cultural, social and family environments. Education is one of these beliefs.

Students who come from a higher SES background have more access to college materials. They also have more material wealth, which strengthens their cultural capital.

Their choices are only limited by their academic abilities. As stated previously students choose colleges and colleges choose students based on abilities. Students from a lower SES background have less material wealth, which lessens their cultural capital. These students tend to have less access to school related information, thus limiting their college choices and their understanding of available financial aid (Paulsen & St. John, 2002). Some of these students do not even apply to college and when they do, it is without good information which can have an effect on persistence. A measure of a student's cultural capital can be the level of education of the parents.

Colleges are concerned with a student's college choice and their persistence from an economic (human capital) and cultural capital perspective. Most colleges can determine why students choose them, but why students leave is another matter. As previously stated, the largest decline in enrollment is from the freshmen to sophomore year therefore making the freshmen year critical. Colleges try to focus on freshmen retention in order to increase persistence. Persistence is what "pays off" for our society. Persistence increases both the cultural and human capital of the individual. The more education a person achieves; the more cultural capital they acquire. Cultural capital makes for a more enlightened citizenry. Also, the more college educated citizens we have as a nation, the stronger we become economically because college graduates earnings are significantly greater than high school graduates which provides for greater consumer consumption (DesJardins et al., 2002).

## Purpose and Significance

This researcher's hope was that by studying a small private Catholic college he was able to provide information and data regarding college persistence that was representative and is useful to like institutions. Small private Catholic colleges (defined here as colleges with enrollments less than 5,000) which have limited endowments and are tuition driven can ill afford mistakes in the college choice decision. An example of a mistake that colleges could make would be admitting a student who is at risk of not persisting, based on the variables of this study, and not providing that student with support. A small number of these mistakes in choosing students could be a cause for alarm, because a tuition driven college uses the money generated from the students to pay operating expenses such as salaries, utilities and maintenance. If students do not stay, there is a tuition loss, and the college must replace that student with another.

Once the college choice decision is made, persistence is what matters. If a college could predict the chance of a student's persistence at the admissions stage of the choice process, then the college could offer its services such as tutoring and counseling to those students deemed at risk, thus improving their retention outlook. Variables of importance for this study are: college price, financial aid, socioeconomic status (SES), a student's academic preparation from high school and a student's cultural capital. Each of these variables will be analyzed for their individual effect and collective effect on persistence

## The Study

This study examined student choice and college persistence at a small private Catholic college located in Northwestern Pennsylvania. The focus of this quantitative study was on the traditional undergraduate cohort that was admitted for the fall term of the 2004-05 year. The sample data used for comparison included 132 students who left and 578 students who persisted to their second year.

Archival data from the college was used in this study. Demographic data included home location (State or Country) and gender. High school GPA, standardized test scores (SAT), and the number of high school math courses were used to measure the level of high school preparation. The researcher developed an index of high school preparation based on these three variables. The index was used to see if a relationship exists between high school preparation and a student's persistence.

Cultural capital was measured by the level of parental education which was used to determine if a student was a first generation college student (Perna & Titus, 2005). The families' adjusted gross income was used to measure a families SES. Net total price was calculated using the difference in the total college cost less the families expected family contribution. Institutional grant aid was used as the measure for financial aid. It included all the grant and scholarship aid received by the student from the institution.

The sample was analyzed using the total sample, the sample split into SES groupings and the sample split by gender. The analyses included a correlation of the variables which helped to determine the strength of any relationship between the variables. A logistic regression model was used to see if the variables had any predictability on persistence.

This study offers information from a small private Catholic college perspective that can be useful in determining why students leave college. If this information can have a predictive value, support programs can be offered to students who are risk of leaving in order to potentially alter that outcome. It is hypothesized that there is a relationship between the variables of college price, financial aid, SES, high school preparation, a student's cultural capital and persistence. If this is true, then a model could be used to predict a student's chance of persistence at the time of admissions. This would be a win-win situation as both the student and the college could be economically better off.

#### Limitations

Limitations to this study were the generalizability of the findings, since the sample is from a small private Catholic Northwestern Pennsylvania college. Private Catholic college policies on tuition, financial aid and admissions vary greatly from college to college. When private college policies are compared to public colleges, there are still greater differences in tuition policies and admissions policies.

The focus of this study was only on a traditional four year cohort. The findings therefore might not be of use with regard to an adult population or a student population that is attempting less than a four-year baccalaureate degree.

Ethnicity is not considered as a variable for this study. Research has indicated that minority students from low SES backgrounds represent a higher percentage of students who do not persist than those students who continue (Perna & Titus, 2005). The number of minority students represented in this study's population was small and therefore ethnicity was not included in this study.

The international population was also excluded from this study for correlation and

logistic regression, even though they are classified as traditional students. Demographic data is reported in Chapter Four but data on SES, high school preparation and the educational level of parents were too incomplete to measure, and therefore has been excluded from the study for these students. It should be noted international students were recruited by the school as a means to help diversify the student population. These students were both academically and financially qualified to attend, and these students on the average were given higher financial aid packages to attend. It was felt that including these students as participants would cause the data to be less than accurate.

## Definitions

College Choice	how a student chooses the right college and how a college chooses a student
College Cost	a function of faculty and staff salaries, benefits and expenditures for items other than teaching
Discounting	paying less than list price for college cost
Financial aid	money received by students to attend college: includes grants, loans and scholarships from federal, state and other sources
IPEDS	Integrated Postsecondary Education Data System
Merit Base	term used for financial aid that is not based on need but on some attribute that the student has, examples would be athletic talent, musical talent
Need Based	term used for financial aid that is based on financial need
Need Blind	admissions not based on the ability to pay
Net Price	what a student and family pays after financial aid
Price	cost for students: tuition, fees, room and board
Persistence	obtaining a college degree
SES	Socioeconomic status based on income
State Appropriation	the amount of state revenue received by a public college
Sticker price	the price that a college charges before any type of financial aid
Subsidized Loans	the federal government pays the interest on the Stafford Loan while the student is in college
TRA 1997	Tax reform act from 1997
Unsubsidized Loans	the student pays the interest on the Stafford Loan while in college

## CHAPTER II

### LITERATURE REVIEW

#### Introduction

The purpose of this review is to gain insight into the dynamics surrounding the idea of the college choice decision for today's college student. The first section of this chapter is a historical overview of the how funding of a college education has developed and changed over time. The second section will focus on the economic principles that impact college choice and persistence decisions using the framework of human capital theory. After discussing the economic principles the author will review studies that link college choice and persistence using the framework of Bourdieu's cultural capital theory.

#### Historical Perspective

Higher education in America officially began in 1636, when the general court of Massachusetts appropriated funds for the establishment of a college at Newton (later to become Cambridge) with actual instruction beginning two years later (Lucas, 1994). Nine other colleges were founded before the American Revolution all with the expressed purpose of educating civic leaders and preparing a learned clergy.

Challenges for these early colleges included struggles in the areas of: enrollment, curriculum, housing, funding, endowment, and viability in the political and social climate of the times (Lucas, 1994). Additionally, early educators based the American educational traditions on the European models of education. From academic attire to the core curriculums that are followed today, these models were and remain very strong. But, as the educational system expanded in America, new ideas influenced and reshaped our system.

A new approach in the American model of education which was different than the European model was the funding of a student's education by governmental bodies. Traditionally, funding was a family affair with some outside donors (these were usually family friends or wealthy merchants) paying scholarships, as there was no state or federal government funding. As time passed colleges became acknowledged as places that prepared students to take an active role in society and thus became more significant. As public perception changed colleges started receiving funding directly from the state and federal governments.

The Morrill Act of 1862 was a landmark decision where the federal government provided funding which allowed access to higher education. The act established large scale land grants to states for the purpose of establishing institutions of higher education. The states were allowed discretion as to the use of the land grants, as the act only specified that along with the classical education of the time, the institutions utilizing the land grant had to provide instruction in agriculture, mechanic arts and military tactics (Zumeta, 2001).

States were allowed to decide on which institutions would receive the grants. In some states private institutions such as Cornell in New York benefited while in California, existing private liberal arts colleges were merged to create the University of California. In many states, new colleges were formed to take advantage of this new federal policy. The states controlled the process of administration of the land grants, while the federal government provided the resources (the land grants themselves).

A version of this funding model has continued today, with states and the federal government supporting higher education. In more recent years, other colleges have

sought additional ways to increase their funding sources by becoming “corporate academes,” entrepreneurial capitalistic institutions that are highly individualistic and intensely competitive with one another (Lucas, 1994). These characteristics of entrepreneurialism and competitiveness are associated with business, as well as the characteristics of having mission statements, strategic planning, intense budgeting, marketing, professional management practices, division of labor, measuring of output and the meeting of federal and state regulatory requirements (Lucas, 1994). All these characteristics are found today at most colleges. The idea that colleges are becoming businesses and are no longer just “ivory towers” of learning is true for both public and private institutions. .

Another difference between the American and European model is the philosophy regarding the population that should be educated. We recognize today that educational opportunities should not be limited to the elite of our society, this was not the case throughout European and early American history, where only the ruling and religious classes of society were educated (Lucas, 1994). The educational ideal in America has evolved and today is premised on the belief that everyone should have the opportunity to be educated (Advisory Committee on Student Financial Assistance, 2002). We have developed a system of technical, trade, two year community colleges and traditional colleges and universities to deliver education to our varying student population. Each type of institution is unique, yet similar; each has its own identity and challenges while serving their unique student populations.

This right to an education has changed the composition of the student population. No longer is it just white men of means, as women now out-number men at colleges,

minorities are attending in greater numbers and more non-traditional age students are going to college (Advisory Committee on Student Financial Assistance, 2002). These changes did not happen overnight. A Civil War, several constitutional amendments, a depression and several recessions, two world wars, several acts of congress and some grass roots demonstrations were necessary before these access changes occurred (Lucas, 1994).

### *Federal Government Aid*

Each one of the aforementioned events helped send more students to college. For example, after World War II (WWII), there was a large increase in both the numbers of students attending college and the amount of governmental funding for college. The Servicemen's Readjustment Act of 1944, known as the GI Bill, allowed many men returning from military service the opportunity to attend colleges because of adequate funding. The GI Bill represented the single largest program (federal) to provide funding to students for college access at that time (Conklin & Finney, 1999). The significance of the GI bill was that money was given directly by the federal government to the student and not to the institution (Zumeta, 2001). This promoted college choice for the students and it also kept the federal government at arm's length (no direct dollars to colleges, therefore no direct oversight) in regulating colleges and universities. The GI Bill was the financing model that was used for what is known today as Federal Student Aid.

Another historical event brought education spending back to the attention of the federal government. The appearance of the Russian satellite, Sputnik, on October 4, 1957 shocked Americans into the realization that U.S. scientific and educational leadership could not be assumed (Association of American Universities, 2006). A

national education and research strategy emerged, with the National Defense Education Act (NDEA) of 1958 representing the education portion of this strategy. The act addressed science education by creating new programs to support the development of modern curricula in science and math (Association of American Universities, 2006). Further, it provided the means for funding training institutes for science teachers and the act created new graduate fellowships to encourage development and expansion of Ph.D. programs in all disciplines. To ensure access to college programs the, act provided funding in the form of low cost student loans to both undergraduate and graduate students.

The next milestone in governmental financing of higher education was in 1965. In this year the Higher Education Act (HEA) was passed, which advanced the idea that anyone can afford to go to college. A quote by President Lyndon B. Johnson (Advisory Committee on Student Financial Assistance, 2002) upon signing the Higher Education Act of 1965 sums this up:

The Higher Education Act of 1965 means that a high school senior in this great land of ours can apply to any college or any university in any of the 50 states and not be turned away because his family is poor. (iii)

This act was meant to give financial assistance to everyone who wanted to attend college and therefore it increased the government's involvement in higher education. Prior to the passage of this legislation, most institutional, state and federal aid programs emphasized merit criteria when determining eligibility for assistance (Creech & Davis, 1999) and not financial need. The act was historically significant in that it represented, for the first time, recognition by the federal government of a permanent national interest

in higher education (Zumeta, 2001).

The Higher Education Act has helped guide higher educational policy and has influenced the periodic reauthorizations over the last 30 years in 1968, 1972, 1976, 1980, 1986, 1992, and 1998 (Spencer, 1999). Congress must reauthorize this act every four years or extend the existing law in order to provide the formal authority necessary to keep funding these educational programs (Pell, Stafford Loan program, etc). Each reauthorization of the act is influenced by the prevalent attitudes toward education during that reauthorization period. For example, amendments to the 1972 reauthorization created the Basic Educational Opportunity Grants (now the Pell Grant) program, which created entitlements for all financially needy students and also established the Stafford Loan Program which provides need based assistance to low- and middle-income families. Following the model of the GI bill, the 1972 reauthorization of the Higher Education Act, routed the financial support through the students and not the institutions, thus promoting college choice as an option for many more students (Zumeta, 2001).

During other reauthorization periods, the focus of the Higher Education Act changed from helping students gain access to colleges (the original intent of the federal government) which they could not afford; to helping more students from upper-income levels pay for colleges that they could already afford to attend without assistance. These changes occurred with the 1992 reauthorization of the Higher Education Act which allowed a greater number of upper-income borrowers to receive the need based Stafford Loans (Redd, 1999). This was a shift away from the traditional need based aid approach provided by the federal government (Advisory Committee and Student Financial Assistance, 2002).

The current reauthorization process was begun in 2002 but Congress was unable to complete this process and has been granting one year extensions until the passage of Deficit Reduction Act (DRA) which was signed into law by President Bush in February 2006. The goal of this act is to reduce the federal deficit. Embedded in this act was the Higher Education Reconciliation Act of 2005 (HERA). As a result of the DRA, higher education funding was cut between \$12.7 and \$13.7 billion dollars. HERA takes the place of the Higher Education Reauthorization process.

Besides cutting educational funding, DRA again altered federal financial aid funding. The PELL grant program was unchanged with the maximum level remaining at \$4,050. The Perkins and Trio financial aid programs that are aimed at low income students were being eliminated. The reason for the elimination was Congress felt that the recipients who received these funds could get funding elsewhere (Davis, 2006).

HERA includes changes in the Stafford Loan program. Freshmen and sophomore level loans were increased to \$3,500 and \$4,500 respectively and graduate and professional student's loan levels were increased by \$2,000. By putting more resources into loans the federal government is increasing the amount of money available to students to pay for their college educations. At the same time our government created two new grants: the Academic Competitiveness Grant and the SMART Grant.

The Academic Competitiveness Grant authorizes amounts of \$750 and \$1,300 to first and second year undergraduate students respectively. These students must be PELL grant eligible (this means that their expected family contribution as reported on the Free Application for Federal Student Aid is below \$4,000) and first year students must have completed a rigorous secondary school program of study recognized by the Secretary.

To date, the Secretary of the Department of Education (DOE) has yet to define what constitutes a rigorous secondary school program, it is hoped that these rules will be established before July 1, 2006. Second year students must also have earned at least a 3.0 QPA in their first year of college (Davis, 2006).

SMART Grant is an acronym for “National Science and Mathematics Access to Retain Talent (SMART) Grants. These grants authorize \$4,000 for 3<sup>rd</sup> and 4<sup>th</sup> year undergraduate students who must be PELL grant eligible. These students must be pursuing a major in one of several areas of “national need” related to science, mathematics, or a foreign language. These students must have earned at least a 3.0 QPA in the coursework required for their major. The rules of how to apply for and administer this grant are not yet in place. The DOE hopes to have these in place by May 1, 2006 (Davis, 2006).

These grants are an attempt by the federal government to tie merit achievement to need. It is a move away from the role that the federal government has traditionally had in education: providing support for those students who are most needy without regard to academic merit. These grants try to make the connection between academic success and financial aid, a tenet that the Higher Education Act of 1965 was based on (Advisory Committee on Student Financial Assistance, 2002). These grants are trying to quantify what “academically qualified” means.

Other changes also occurred in who was eligible to receive financial aid. In the 1970s, financial aid was used to help students attend the college of their choice and therefore financial aid acted as an incentive for students to enroll in college (Creech & Davis, 1999). But in the 1980s the changing student demographics forced a change in the

focus of student aid programs from that of access to recruitment. The reason for this change was that there were fewer high school students graduating during the 1980s, which created a smaller applicant pool for colleges. In response to this decline colleges started recruiting more nontraditional age students. However, these students also required financial aid assistance. Therefore, federal financial aid policies shifted to offer this group more financial aid in the form of loans and grants by expanding the definitions of aid eligible recipients which would include more types of students.

Another example of this financial aid policy shift is found in the Tax Payers Relief Act of 1997 (TRA 1997). This legislation established educational tax credits, the Hope Scholarship and Lifetime Learning Tax Credit, aimed at the middle to upper income levels that reduced the amount of taxes owed by the parents of college students (in the case of dependent students). Table 2 includes the highlights of these tax credits:

Table 2

*HOPE Scholarship and Lifetime Learning Tax Credits*

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	Hope Scholarship	Lifetime Learning Credit
Type of Tax Benefit	Tax Credit (non-refundable)	Tax Credit (non-refundable)
Annual Limits	\$1,500 per student	\$2,000 per taxpayer after 12/31/2002
What Education Qualifies?	1 <sup>st</sup> and 2 <sup>nd</sup> year undergraduate education	3 <sup>rd</sup> year of undergraduate through graduate school
How are taxes calculated?	100% of first \$1,000 eligible costs 50% of next \$1,000 eligible costs	20% of the first \$10,000 costs
Income phase outs for	AGI from \$43,000 to single filers	AGI from \$43,000 to \$53,000
Income phase outs for joint filers	AGI from \$87,000 to \$107,000	AGI from \$87,000 to \$107,000

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*Note.* From “An Analysis of the Use of Education Tax Credits at Four Public Community Colleges, by Silliman, B.R., 2005. *Journal of Student Financial Aid*, 2005, p. 37. Copyright 2005, by NAFFAA.

Both tax credits are figured on the amount of tuition and eligible expenses (room and board charges are not eligible for this calculation) that are left after subtracting any grants or scholarships received by the students. In order to make use of the tax credits, taxpayers must have a tax liability; lower income families usually do not have the income to generate a tax savings by using the tax credits. Therefore, by establishing TRA 1997, Congress gave more financial resources to assist in funding a college education to middle

and upper income tax payers.

With the advent of the TRA of 1997, the partnership that had been in place for 30 years between the federal government and colleges and universities began to erode (Spencer, 1999). Both the federal government and colleges and universities determine the amount of aid available, the rules for disbursement as well as the eligibility requirements necessary to receive the aid. As part of this partnership, the colleges and universities established financial aid departments to deliver federal aid and information to the students. This partnership seemed to work, however with the TRA of 1997, it was weakened because taxpayers now have the ability to directly receive educational tax credits and use these credits as they see fit (Spencer, 1999). These tax credits do not flow through the financial aid offices, like the other federal grant and loan programs.

These credits are not a direct resource for colleges, since parents and students do not have to use these monies to pay for college expenses. Also, these credits are usually received after the college bill is paid and they are received after the school year is normally completed. The TRA of 1997 presents a challenge to colleges because a large number of students are receiving educational tax credits and colleges are not able to take this into account when figuring out a student's anticipated financial aid as these credits are not considered a source of payment, but are considered as a source for financial aid on a student's Free Application for Federal Student Aid (FAFSA).

These tax credits can be a benefit to middle and upper income level families by indirectly giving them more cash as they pay less taxes, but the credits can be seen as a liability to lower income groups because they lack the income necessary to take advantage of the tax credit. This liability stems from the fact that TRA 1997 is not tied to

higher education policy. A goal of this policy was to distribute aid resources such as the Pell Grant, which is an income based grant, to students with the greatest financial need.

As stated previously, by providing these tax credits in greater amounts the federal government has demonstrated a shift away from funding of the need based financial aid programs for financing a college education. For example, in 1998 the Pell Grant Program cost approximately \$650 million or 7% of the expected cost (\$9 billion) for tuition tax credits (Conklin & Finney, 1999). This shift results in decreased college access for the student with a low socioeconomic background. Thus, TRA 1997 moves away from the historical role that the federal government has played in providing access to college for students from low income families (Conklin & Finney, 1999). These credits cause the Federal Government to make economic decisions because the government is not a source of unlimited funding (money), therefore in order to fund these tax credits the federal government has to limit other types of financial aid resources, usually at the expense of lower income groups.

The Federal Pell Grant individual grant amounts have not kept pace with the rising cost of education. This is demonstrated by the purchasing power of the Federal Pell grant, which was at a high of 84% of public college tuition in the mid-1970s to a low of 34% in the mid-1990s (Advisory Committee on Student Financial Assistance, 2002). Stated differently, 84 cents of public tuition was covered in the mid 1970's by a Pell Grant compared to 34 cents in the mid 1990s. Therefore the Pell Grant has not kept pace with the increasing cost of higher education for all students.

Besides the TRA of 1997, the funding level of the Stafford Loan program has also increased which puts additional pressure on the funding level of the Pell Grant program.

In 1987, 3.6 million students borrowed an average of \$2,500 under the subsidized Stafford Loan program, by 2001, 4.7 million students borrowed an average of \$3,500 under the subsidized program and an additional 3.4 million (some of the same students) borrowed an average of \$4,100 in unsubsidized Stafford Loans (Baum & O'Malley, 2003).

As stated previously, the idea of expanding the loan program and passing TRA 1997 was to allow more student access to college but the economic tradeoff is that there are fewer Pell Grant dollars available to low income students. This tradeoff limits their access to certain colleges. Also, high tuition prices prevent some low-income students from even trying to gain admission to higher priced colleges, thus limiting their college choices (Advisory Committee on Student Financial Assistance, 2002). State governments also are critical in the funding of higher education.

#### *State Government Aid*

Like the federal government, the state's role in higher education has also changed over the years. State support of higher education began with public allocations to private, largely church-chartered institutions (Heller, 2003). During the first half of the 20<sup>th</sup> century states began to develop state-sponsored financial aid programs. During the 1969-1970 academic year there were 19 state run programs awarding \$200 million in grants to 488,000 students (Heller, 2003). With the first reauthorization of the Higher Education Act in 1972, significant changes occurred. One of the changes was the creation of the State Student Incentive Grant program, which provided federal matching funds for state run, need-based financial aid programs. This brought an increase in the number of state run financial aid plans. By 1974, 36 states had financial aid plans and awarded \$423

million, increases in financial aid continued until every state and the District of Columbia had financial aid plans and by 1979 distributed a total of over \$800 million. Growth of these state programs (with the exception of Alaska and South Dakota) continued through the 1980s and 1990s, and in 2000-2002 over \$5 billion was awarded by the states (Heller, 2003). As noted previously, state financial aid is often critical in the decision making process for students. Therefore, the type of state funding becomes important in the choice decision.

Research suggests the following may influence the type of college that individuals in the state attend: (a) policies regarding direct appropriations to higher education institutions, (b) financial aid policies to students, (c) tuition policies, and (d) policies related to academic preparation at the elementary and secondary levels (Perna & Titus, 2004).

Low public tuition policies in higher education have been implemented by many states to address the goals of college access and affordability (Conklin & Finney, 1999). States provide funding to state supported institutions of higher education by direct appropriations which act as a subsidy to the cost of education for college students. Along with the state grants these state appropriations, which are the monies that state legislatures grant to public institutions for operating purposes, also affect the college choice decision. These appropriations are being cut by individual states in order to help balance their state budgets.

One reason that states are cutting these appropriations can be found in the Tax Reform Act of 1997 which is the largest single increase in federal funding for higher education since the GI Bill of WW II (Conklin & Finney, 1999). States are recognizing

that students and their families are benefiting from this federal tax policy, and in turn they are either downsizing or not increasing the size of their state appropriations to public colleges. Thus the Tax Reform Act of 1997 is a federal tax policy that is having implications for state financial aid policies. These appropriations make up a large proportion of the state's expenditures for higher education.

Historically, states have provided appropriations directly to the state institutions of higher education and this approach has worked. However this method of providing funding might not be the most economical (Francis, 2005). A better approach might be to follow the model of the GI Bill, which is very successful in providing educational funding to deserving students. This approach could be used today by the states to appropriate their scarce resources to fund education: give the money directly to the student and let the student decide where to enroll, either public or private colleges. Subsidizing state owned institutions has been indicated as being an inefficient means of using taxpayer dollars (MacDowell, 2005).

These appropriations for education are competing with the other funding needs of the states. There are 41 states suffering budget shortfalls, resulting in reductions in the appropriations to institutions. This in turn has caused substantial increases in public college tuition, averaging 7.7% nationwide (Advisory Committee on Student Financial Assistance, 2002). An analysis by the National Center for Higher Education Systems projects state spending and revenues for eight years, 2005 to 2013, and concludes that all states face potential budget deficits that will serve to limit the funding of higher education (Jones, 2006), thus causing shortfalls that are typically made up with tuition increases. These increases in tuition can limit the access to these public colleges to lower SES

students.

The tuition that is charged by public institutions is not technically set by a state entity, but is influenced in part by the state policies regarding appropriations and financial aid (Perna & Titus, 2004). The authority for setting state tuition rates is dispersed among state legislatures, state higher education coordinating or governing boards, college or university systems, and individual institutions (Heller, 1999). As state appropriations decrease (as reflected in the response to Tax Reform Act of 1997), public institutions of higher education have had to increase their tuition dollars or cut goods and services. Heller (1999) states that most analysts agree the “golden age” of expansion of public higher education has ended. Reasons cited were the other constraints on state budgets: funding prisons, elementary and secondary educational cost, Medicaid and welfare benefit costs.

States are also increasing their use of merit based scholarships, at the expense of need based aid. Most of these merit based scholarships are oriented to middle and upper income families (Gladieux, 2002). Merit aid moves away from the idea of equity and access because the income status of the recipient is not part of the qualifications to receive this aid. The qualifications are usually tied to a student’s high school academic achievements. The idea is to use the limited funding to help the best and the brightest students with the cost of a college education.

An example of this is Georgia’s HOPE scholarship program. HOPE is tied to high school and college performance; if a student attends a public Georgia college or university on a HOPE scholarship the state pays the tuition and mandatory fees and if a student attends a private university, two payments will be made to the college: the Hope

Scholarship of \$3,000 and a tuition equalization grant of \$1,045 (Wendt, 2004). This program helps keep the best and brightest students in the state (Perna & Titus, 2004).

Both the state and federal government financial aid programs are significant in the funding of a student's education. The third source of funding for a college education is the higher educational institution chosen by the student.

### *Institutional Aid*

Colleges and universities in conjunction with the federal and state government systems have developed financial aid systems to help supplement the cost of college. College aid in the form of grants and scholarships by the host institution is a fairly recent phenomenon and the U.S. Department of Education has tracked this spending since 1987 (Heller, 2003; Horn & Carroll, 2004). In fiscal year 1987 public institutions awarded \$486 million in institutional grants and scholarships for both merit and need based aid. By 1996 this had increased to over \$1.9 billion, an increase of 294%. Private college grants and scholarships increased 227% during this same time period.

As stated previously, this practice of providing institutional grants and scholarships is referred to as "tuition discounting." This practice makes paying for college easier for students but is dependent on selectivity. Selectivity is the term used to describe the outcome of the admission's criteria used by colleges to admit their incoming classes. It is thought that the more prestigious a college is, the more selective they are in admitting students. This selectivity also influences the institutional aid that is awarded to students.

Another influence on the awarding of institutional grants and scholarships are the actual goals of the college. College goals are varied as these examples demonstrate:

promoting access to education for low-income students, increasing diversity, promoting academic excellence and raising tuition revenues (Horn & Peter, 2003). These goals are not mutually exclusive and are normally established by the college's governing body. Tuition discounting, can aid in the achieving these goals, by providing the prospective students with financial aid packages which helps make college affordable.

This affordability is demonstrated by the increase in institutional financial aid that is found in the not for profit institutions. Forty-seven percent of students in 1992-93 received institutional aid averaging \$5,900, while in 1999-2000 58% did so averaging \$7,000 (Horn & Peter, 2003). At this same time there was a large increase in the upper income quartile of students attending these institutions from 41% of all students attending in 1992-93 to 51% in 1995-96. Also, much of this aid increase during this time went to students in the form of merit based aid (Horn & Peter, 2003). This is following a national trend of giving more merit aid to students, which leaves less financial aid available for lower SES students.

The college choice isn't any easier with availability of all this aid. Students and their families must still pick the right college based on all factors: college price, location of the college, college major, college amenities and financial aid packages. How people make these decisions and how colleges determine their price will be discussed in the next section of this chapter on economics.

## Economic Perspective

In our market driven economy people serve a dual function: they are economic resources (human capital) producing output, as well as consumers who purchase the output. In today's economy there are four factors of production: labor, land, capital and technology (Mankiw, 1998). Therefore, labor is a price (cost) for production. The price is based on whether the labor is skilled or unskilled. Jacoby (2004) states that human capital theory stresses that education and training can alter the wages that people are paid, allowing them more income which in turn will increase their consumption of goods and services. People need to consume what is produced in order to drive our economy (Mankiw, 1998). All people follow economic principles in their consumption (purchasing) activities which is true regardless of any differences in demographic characteristics. How people make purchasing decisions (consumption) is based on several economic principles: a) people face tradeoffs, b) the cost of something is what you give up to get it, c) rational people think at the margin, and d) people respond to incentives (Mankiw, 1998). College choice is an example of a purchasing decision.

### *Economic Principles*

A person's (family) purchasing ability is not unlimited; each person has to face tradeoffs in how they use their resources. Wood (2004) indicated that a college education is the most expensive good that a family can purchase after a mortgage. If this is true, the family has to make tradeoffs in their spending since they can't buy everything they want or desire. This leads to the principle of opportunity cost. This is the cost of something that you give up to do something else. For example, if a family sends their student to a private college that costs \$20,000 a year, they might have to give up their annual vacation

for the next four years. So, there is a link between what you want and what you can have.

Rational people think at the margin, in economic terms this means that we look at the next dollar of spending and then we try to determine what benefit or cost that dollar will bring (Mankiw, 1998). If the marginal benefit outweighs the cost then the choice to spend should be made. Perna and Titus (2004) state that an individual makes a decision about attending a college by comparing the benefits with the cost of any possible alternatives and then selecting that alternative which has the greatest net benefit, given the individual's personal taste and preferences. This leads to the next economic principle that people react to incentives and today students are given many incentives to stay in college and persist to graduation.

An example of an incentive would be the financing of a college education. The federal government, state government and colleges all offer incentives for students to help with the expense of college. Incentives in the forms of grants and scholarships allow the students to make decisions about college choice and once this choice is made, financial aid can have a direct impact on persistence (Heller, 2003). Financial aid affects persistence decisions by maintaining equality between the net price that a student pays and the perceived financial returns of degree attainment. Persistence effects can be measured in dropout rates, transfer rates from community colleges to four-year institutions and institutional levels of need based student aid (Heller, 2003).

Another economic principle that affects choice and persistence is the principle of supply and demand. People demand goods and firms supply these goods. As the cost of the good decreases people will demand more of the good. As the cost of the good increases, people will either not buy as much or seek alternatives for the good. A college

education can be considered an economic good, which is supplied by institutions of higher education. Students and their families demand (want) these goods. If colleges wanted to increase the demand for their school they could do this by lowering their price. This would allow more people to purchase the good. If colleges raise their prices, students may seek alternatives. Once a student attends college, they have to deal with increases in price, thus price can also have an affect on persistence.

Increases in college tuition happen for various reasons. Hawkins (2004) noted that 15 million students were enrolled in 2003 and increased enrollment growth is expected over the next 10 years, which could make the demand for higher education out pace the supply. It would seem then that colleges could raise their prices to take advantage of this increase in demand. Another reason that colleges need to raise their prices is that costs of supplying an education are rising faster than the consumer price index (Heller, 2003). For example: educational salaries, campus maintenance and programming costs are all increasing. Also there are cut-backs in federal and state financial aid to the institution (appropriations) and to the students (grants and scholarships). With these rising costs students face tougher college choice decisions with less financial resources available. Creech and Davis (1999) state:

It is readily apparent that combined student financial aid funds from all sources (state, federal, institutional, and private) are insufficient to meet all students' needs, let alone their demands for assistance. Statewide and regional studies of "unmet need," since the first ones in the late 1960s, always have shown that at least some students and families need more financial aid funds than are available to them. It is very unlikely that student aid funds will become sufficient in the foreseeable future. (p. 133)

### *Human Capital Theory*

If the above is true, why do students and their families make the college choice decision? This choice decision, which also later influences persistence, is rooted in human capital theory. Human capital theory promotes the improvement of the human being in order to make him/her a more productive asset (Jacoby, 2004). The idea that a student's academic ability, however measured, would effect earnings has been widely supported among human capital economists as well as sociologists (Paulsen, 2001). The idea that a parents' education, occupation, and income would affect subsequent earnings has also received consistent support based on the work of human capital economists and other scholars (Paulsen, 2001).

Therefore it is believed that skills gained though education and training increase the wages that people receive. This idea has fueled a growing perception by the general public that higher education is essential (Conklin & Finney, 1999). A good job means a better standard of living. Over their lifetime, college educated people out earn high school graduates and high school dropouts (DesJardins, et al., 2002). Figure 1 which shows the medium earnings by gender for full time workers from 2003 demonstrates this.

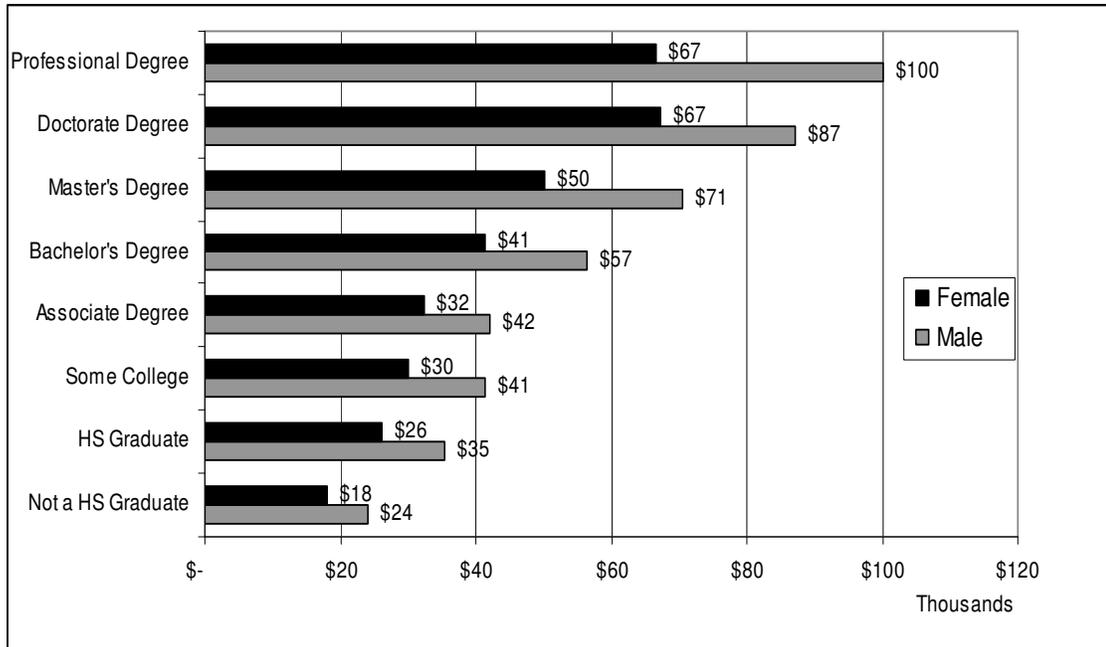


Figure 1 Earnings: Education Level and Gender, 2003.

Note. From “Education Pays,” by The College Board, 2004, The College Board p. 14. Copyright 2004 by College Entrance Examination Board.

As the level of education for both female and males increase so does the level of earnings. This figure reinforces the belief that a college education is important from an economic viewpoint.

A comparison of the benefits that an individual receives from a higher education and the benefits that accrue to society because of this education is made by Kerr (1997):

The returns to individuals include higher income, more satisfying jobs, better care of health, greater consumer and investor efficiency and more fruitful leisure. The returns to society include higher productivity, higher tax contributions, greater citizen participation, more tolerance among groups, and greater military security. (p. 346)

These returns make higher education a “must buy” for many students and their families.

The investment in education pays off for individuals, but not equitably when comparisons are made between men and women. Women, who outnumber men as post secondary graduates, can expect to receive employment that pays less than their male counterparts (Snyder, 2002). For example, in Figure 1 a female who has a Ph D. earns approximately \$67,200 compared to \$87,100 for a male that has the same credential. Therefore there is a built in gender bias, women have to work as hard (invest in) to receive an education but the returns (incomes) are less than men. Still education does pay, therefore families and students want a college education and they will pay whatever the price is to obtain it. But colleges continue to worry about the price.

Colleges have constraints on what they can charge. As noted earlier, public institutions are controlled by legislative actions and private colleges are controlled by the market place. Therefore it would seem rational that if a college wanted to increase revenue and if they couldn't do it by increasing price then they would have to increase volume, which would indicate that the colleges would have to cut price to make it more appealing to the student and their families.

This would be the traditional pricing model of cutting price to increase volume, which does not hold true with higher education institutions. These institutions can't just cut price and increase volume to cover cost. The reason is found in the economic model that the higher education institutions use in determining cost.

The basic economic model for business operation is  $\text{Price} = \text{Cost} + \text{Profit}$ . Businesses set their prices to make a profit. For colleges, the model becomes  $\text{Price} = \text{Cost} + \text{Subsidy}$  (Winston, 1999). The difference between the two models is one of profit versus subsidy. Profit is the amount of earnings a firm makes over its cost, whereas

subsidy is the difference between the cost of a college education and what the college charges.

No student pays the full cost for their educational experience. “Robinhooding” the idea that the rich help subsidize the poor is a popular myth. This is a myth, as Larson (1997) noted because rich students may get a smaller subsidy (institutional aid) than the poor students, but they all get subsidized, even those who pay the full sticker price, which is the published price for tuition, fees, room and board (Winston, 1999). The full paying students are not paying what it cost to educate them, they are paying the published rate and therefore they are also receiving a “subsidy.”

The college economic model points out that a subsidy plays an important role in the cost of a college education. The higher the subsidy, the lower the price a student will be expected to pay. College pricing practices are usually determined by some type of finance committee of the college. The committee develops cost and revenue projections and determines what type and how much revenue is needed, then the rates for tuition and other costs are set.

A description of how tuition prices are set is offered by Ehrenburg (2000), who served for three years as Cornell’s Vice President for Academic Programs, Planning and Budgeting. He states that selective private institutions have almost always increased their tuition levels each year by more than the rate of increase in the consumer price index. He argues that the primary cost driver is competition among selective private institutions which use price “to maximize the value of their institutions” (Perna, 2002). A higher tuition price is believed by students and their families to represent value, the higher the price the better the institution. Public colleges are also increasing their tuition levels but

for a different reason. These colleges are increasing their tuition in response to cost increases and in response to the decrease in state appropriations. Thus an increase in tuition can have an impact on college choice especially for students from low socioeconomic backgrounds.

Researchers have studied the link between cost and college choice as well as the link between cost and persistence. The next section will discuss several of these studies and the models that they use to analyze the different variables that affect college choice and persistence.

### A Review of College Choice and Persistence

#### *Cultural Capital Theory*

College choice and persistence are thought to enhance cultural capital. Pierre Bourdieu, a French sociologist and anthropologist developed a theory of cultural capital, which is defined as wealth based on social status from having or acquiring an education (Lawley, 1994). Bourdieu (1983) states:

The notion of cultural capital initially presented itself to me, in the course of research, as a theoretical hypothesis which made it possible to explain the unequal scholastic achievement of children originating from the different social classes by relating academic success, i.e., the specific profits which children from the different classes and class fractions can obtain in the academic market, to the distribution of cultural capital between the classes and class fractions. (p244)

Bourdieu's studies of sociology are rooted in Marxist theories of class and conflict. He states that there are three types of capital: economic, social and cultural. Economic capital refers to having control over cash and other assets and social capital refers to

having resources based on group membership, relationships and networks that influence and support a person's status. Different types of knowledge, educational skill and any advantage a person may have refers to cultural capital. Parents provide children with cultural capital, instilling in them the attitudes and knowledge that helps make the educational system a comfortable and familiar place in which the children can succeed easily (Bourdieu, 1983).

Cultural capital is wealth based on social status and education and takes three forms: the embodied state, the objectified state and the institutionalized state (Bourdieu, 1983). The embodied state of cultural capital is acquired over time and it represents long lasting improvements in mind and the body. This acquisition of self-improvement represents an investment (economic) of personal cost, mainly time. Therefore cultural capital can be acquired depending on the period of time, the society and the social class of an individual but it can't be accumulated beyond the capacity of an individual and it dies with the bearer (Bourdieu, 1983). This means that it can't be passed on to future generations unlike economic capital which can be transferred (property and title). It represents symbolic capital, which means that it is not recognized as economic capital rather it represents the value of one's development over time. Time is the deciding factor in acquisition of the embodied state of cultural capital.

The initial accumulation of cultural capital starts at the beginning of one's life especially for those children whose families have strong cultural capital and it can last a lifetime. It can be seen immediately that the link between economic and cultural capital is established through the time it takes to acquire: the longer the time the more it costs. The time needed to acquire it is determined by how much free time a person's family can

provide him (Bourdieu, 1983). Free time means lost opportunity for economic gain, as there is a cost associated with acquiring education and cultural capital. The family unit normally decides how much they can “afford” to pay for the student that is not being economically self-sufficient. Individuals from lower SES families are expected to “earn” their way sooner, than those individuals from higher SES families, thus imposing a limitation on their educational opportunities. For example, the family unit allows the student to gain education instead of working to earn a living. During this time spent acquiring an education, there is a lost economic opportunity to the student (the wages earned from work) that the family compensates for by “paying” the cost of the education. In the end the student gains economic and cultural capital with their higher education level. The other forms of cultural capital also depend on SES status.

The objectified state of cultural capital has physical shape. It is the objects one either owns or surrounds themselves with. Examples are writings, paintings, monuments, and instruments. This form of capital can be transmitted from one to another (generation to generation). It has substance and has economic form (value can be placed on it). This form is somewhat dependent on the embodied state of cultural capital to give it value to the individual and to society. Bourdieu (1983) states that to possess machines, he (person) only needs economic capital, to appropriate them but to use them in accordance with their specified purpose (defined by cultural capital) he must have access to embodied cultural capital, either in person or proxy.

The institutionalized state represents the objectification of cultural capital in the form of academic qualifications and has the same biological limits as its bearer it ceases to exist when a person dies (Bourdieu, 1983). This represents the seal of approval which

is the degree or certificate that certifies the education (cultural competence) of the individual. The certification gives economic value to the individual, a value that is measurable. This measurement allows society to separate individuals, people with no education to those with the most education; people from institutions that have academic prestige to those people from institutions which do not, all based on academic qualifications. It can be used as a tool for establishing conversion rates between cultural capital and economic capital by guaranteeing the monetary value of a given academic capital (Bourdieu, 1983). The better the academic credential a person has, the better off he or she is, in the market place. This is true as long as the credential (resource) has value.

Value is based on the scarcity of the resource. The scarcer a resource is; the more value it has. Bourdieu (1983) indicated the explosion in schooling and the inflation of qualifications could alter cultural capital by lessening the value of it. This means a person would have to obtain more education in order for it to be of value. For example, it used to be that if a person had a high school education, they could expect to have a high standard of living; today that is not the case. A bachelor's degree is seen as the "degree of entry" for most positions. As previously stated, a college education increases a person's potential earnings.

Lawley (1994), states that Bourdieu believed that success in school and society depends largely on the individual's ability to absorb the cultural ethos, which he referred to as habitus. Habitus is dependent on the idea of class. It refers to the enduring, internal system of attitudes, beliefs, actions and fundamental values acquired from the immediate family, school, and community environments of the student (Paulsen, 2001). People

from higher classes will continue to have high *habiti* and seek to replicate this in future generations. Individuals (students) from lower classes will try to gain a higher level of *habiti*, but face obstacles by lacking adequate economic resources to pursue a higher education. When these students gain access to colleges, their rates of persistence are lower as noted by various researchers (Advisory Committee on Student Financial Services, 2002; DesJardins et al., 2002; Heller, 1999; Paulsen & St. John, 2002; Strauss & Volkwein, 2004).

A student's social class, and related cultural capital and *habitus*, consistently frame, structure, and constrain their patterns of college-going decision-making (Paulsen, 2001). Recent research has indicated that models of investment in higher education based on human capital theory may have greater explanatory power when they include measures of *habitus*, social and cultural capital (Paulsen, 2001).

Information represents symbolic wealth that is transmitted from upper middle- and upper-class parents to their children and is thus tied to the theory of cultural capital. The idea is that the parents are educated and are motivated to educate their children, thus they provide the necessary help and information in the college decision making process. This is contrasted with students from lower social economic groups, where the parents usually are not as educated and are not as equipped to motivate their children in educational decisions (Paulsen, 2001). This information can center on the understanding of college pricing and how to manage the financial aid process.

### *College Price and Financial Aid*

Paulsen and St. John (2002) studied the variables of social class and college price and their impact on the college choice decision and persistence. These researchers also support the concept of habitus and use cultural capital as a framework. Paulsen and St. John state that “the cultures and values of habitus that constitute a student’s early school and family environments have a substantial influence on the way they frame and make educational choices” (p.192). Their study used the financial nexus model which they used in previous research to establish a linkage between college choice and persistence. The nexus is the link between the two primary aspects of student enrollment behavior – college choice and persistence (Paulsen & St. John, 2002).

The data for Paulsen and St John’s (2002) study came from the National Postsecondary Study Aid Survey of 1987. The researchers believed this to be an appropriate database, given their intent to examine class differences in how students experience financial factors in their college choice and persistence decisions. The sample was divided into four income groups. Logistic regression was used as it is an appropriate statistical method for the study of variables that influence qualitative, dichotomous outcomes, like persistence (Paulsen & St. John, 2002). Sequential logistic analysis was used because it provides visibility into the ways different variables interrelate to influence persistence.

Paulsen and St. John (2002) developed their model to study the sequence of student college choice, as well as how factors that affect earlier choices (choice of colleges) could also influence subsequent choices (persistence). Their financial nexus theory argues that if students perceive low tuition or a low living cost to be very

important in their college choice, then these cost consequences may have an impact on their subsequent decisions to persist in college. Similarly, at the time a student is making the decision to continue, the actual dollar amounts of college tuition and financial aid that a student experiences may have a direct effect on their persistence (Paulsen & St. John, 2002). Results from their study indicated that policies of low tuition and financial aid have an impact on college choice and persistence for lower SES groups.

Tuition at both public and private institutions can affect the college choice decision. Higher tuition rates at either type of college will result in fewer students attending or students switching to other alternatives such as lower cost institutions or not attending. This would seem to limit the value of their human and cultural capital. The Advisory Committee on Student Financial Assistance (2002), indicated that because of record-high financial barriers, nearly one-half of all college-qualified, low-and moderate-income high school graduates- over 400,000 students fully prepared to attend a four year college will be unable to do so, and 170,000 of these students will attend no college at all, the rest attending some other type of college rather than a four year institution. Projecting this data out to the end of the decade, losses of college-qualified students become 4.4 million who are unable to enroll in a four-year college and 2 million who will be denied access to any college at all (Advisory Committee on Student Financial Assistance, 2002).

As demonstrated by Paulsen and St. John (2002), price (tuition) becomes an important factor in the college` choice decision and it can limit those who cannot afford to attend. A 2002 study by the National Center for Education Statistics (Choy, et al., 2002) indicated that for the period from 1992 to 2000, there was a measurable increase in

the average total tuition and average total cost of college attendance. This increase was implemented across all institutional types: four year public and private and two year public and private with the results of the increased tuition indicating that increasing cost was limiting access for college choice decisions.

Another study, conducted by Heller (1999), involved public four year and two year institutions; the researcher used both cross sectional and time series observations called “panel data” composed of enrollment, population, tuition, financial aid and unemployment to study the effect of higher tuition on college choice. The enrollment data came from the Integrated Postsecondary Education Data System (IPEDS) surveys, tabulated by the National Center for Education Statistics 1998 and from the Washington State Higher Education Coordinating Board 1996 (Heller, 1999). A fixed-effects model was used to analyze the panel data. The researcher found that in real terms, for every \$100 increase in tuition there could be expected about three-quarters of a percentage point decrease in college participation of 18 – 24 year olds. This could put students of lower SES at a disadvantage for college access as they are more susceptible to changes in tuition. This supports the cultural capital theory of Bourdieu (1983) because students with limited resources will not have the necessary resources to gain access and therefore will not persist to graduation. Changes in tuition represent one major variable for the college choice and persistence dichotomy. Other researchers have studied different variables and what affect these variables have on college choice and persistence including high school preparation and SES.

### *High School Preparedness*

As previously stated, it is thought that high school preparation has an effect on a student's persistence. Research by Schneider, Swanson & Reigle-Crumb (1998) indicates that only rigorous advanced-level mathematics and science courses taken in high school are strongly predictive of four-year college attendance and persistence. Therefore it seems natural that high school counselors would encourage students with college aspirations to enroll in a sequence of math and science courses. This is not always the case because the counselors are not the only stakeholders involved in this decision. The other stakeholders include parents, school administration and the students themselves. Each stakeholder has a voice concerning which courses a student would take. Students might not want to take a "hard" course load, and/or school administrators might not be able to offer enough challenging courses or have the right faculty to teach the course. Parents usually do not get involved in course selection, as most parents are busy and believe that it is not their job. Guidance counselors might not have the time to devote to these students in helping make these types of decisions.

While people might be at the heart of the problem, the schools themselves might be another reason that students do not take demanding courses. In a 2005 survey Achieve, Inc. (2006), found that in most states there is a large gap between what high schools expect and what colleges and employers demand, referred to as an expectation gap. In Achieve's published state by state report, only two states – Arkansas and Texas- had graduation requirements that included four years of both rigorous English and mathematics at least through Algebra II for graduation. A conclusion from this report indicates that one of the reasons students do not take higher level math courses is that

they are not required for graduation.

The Achieve (2006) study also indicated that high schools were failing to prepare all students for success at postsecondary institutions. Too many students were dropping out of the education pipeline (going from junior high, to high school, to college), 30% of students nationally do not graduate (Achieve, 2006). The U.S. economy can no longer absorb these+ workers with inadequate education in low-skill jobs (Achieve, 2006). In fact few of these jobs exist. A middle-class life style requires higher level mathematics and better communication skills than ever before. Even with a high school diploma students will have a hard time achieving career success as 67% of today's jobs require some postsecondary education (Achieve, 2006). It seems then, that higher level mathematics becomes essential. Another effect of higher mathematics courses is found in their relationship to SAT test performance.

SAT performance has been found to increase in students who were taking more advanced courses in science and mathematics, a student who takes rigorous mathematics and science courses in high school can potentially gain 265 points on the SAT, compared with a student who takes no advanced courses (Schneider, 2003). This is critical, as most college admission offices use either the SAT or American College Test (ACT) as an entrance exam. The higher the test score that a student has, the opportunity for acceptance in college increases. For private colleges higher academic test scores usually translate into larger financial aid packages that are based on merit scholarships.

Schneider (2003), states that students with higher academic abilities are more likely to be enrolled in higher-level courses, therefore if average students are also enrolled in these courses and they persist, then they are likely to receive the same

admission benefits as other students with higher test scores. This would mean higher financial aid packages. The better prepared the students are the more likely they will persist all things being equal.

### *Socioeconomic Status*

If persistence matters, then what happens after graduation can also be of importance when students make their college choice decisions. Walpole (2003) studied what effect graduation results have had on the SES of students. The researcher used longitudinal data from the national study of college students which is prepared by the Cooperative Institutional Research Program (CIRP) sponsored by the Higher Education Research Institute at UCLA and the American Council on Education. His study used the 1985 Student Information Form, the 1989 Four-Year Follow-Up Survey and the 1994 Nine-Year Follow-Up Survey. The survey sample was approximately 12,376 subjects from 209 four-year institutions. Descriptive information was used to study differences in college activities of low SES students versus high SES students. Multivariate analysis was used with stepwise logistic regression to gain insight into the effects of college environment and to determine variables associated with graduate school attendance.

The results from this study indicate that college students with high SES are converting the capital (the worth of their education) accumulated in college into graduate school attendance, degree attainment, and attainment of the most prestigious degrees at higher rates than students with low SES. The low SES students are converting their capital into membership in the workforce at higher rates but are securing lower paying positions than their high SES peers (Walpole, 2003). These results support the cultural capital model of Bourdieu by demonstrating that even when the lower SES students

complete their educational studies, their “pay off” is less than that of the higher SES students, thus the habit of students does play an important role in their educational results.

These results do indicate that persistence pays off for all levels of SES students. It could be argued that the equity of the outcomes is a problem because higher SES students receive more benefits (privileges, higher paying jobs, etc.) than the lower SES students. But the lower SES students are upwardly mobile when compared to their parents; this reinforces the idea that a college education can improve social mobility for these students even though it is not as high as the higher SES groups.

#### Summary

The historical changes in both the development of the educational system and in how financial resources have been and are made available to the students were the focus of this chapter. How colleges determine cost and pricing and economic decision making using human capital theory was discussed in the section on economic perspectives. The last section of this chapter reviewed college choice and persistence and the variables of price, financial aid, high school preparation and socioeconomic status that affect both of these situations using Bourdieu’s theory of cultural capital as a framework.

This literature review was an attempt to provide a framework by which this researcher can continue to study the question of college choice and the effect that this decision has on a student’s persistence for small private colleges. The variables of college price, SES, financial aid, cultural capital and high school preparation and their impact on student choice and persistence was the focus of this study.

## CHAPTER III

### RESEARCH DESIGN

This quantitative study investigated the relationships that different variables have on persistence once the college choice decision has been made for students at a small private Catholic college located in Northwestern Pennsylvania. The goal of this study was to provide information about why students leave college after they make the college choice decision and later tries to determine if this information has any predictive qualities that colleges of this type can use to increase the rate of persistence between the freshmen and sophomore year. Quantitative research methods work well in studies of college choice and persistence as demonstrated by various researchers (Pascarella, Pierson, Wolniak & Terenzini, 2004; Paulsen & St. John, 2002; Strauss & Volkwein, 2004; St. John et al., 2000). Since data needed for this study was measurable and quantifiable, comparisons and correlations could be calculated to determine if any relationships exist between the predictive (persistence) and criterion variables (price, financial aid, SES, cultural capital and high school preparation).

As noted previously, extensive research exists on college choice and persistence using data from national data sources with the focus primarily on public institutions (DesJardins et al., 2002; Griswald, 1999; Heller 1999; Leppel, 2002; McDonough et al., 1997; Paulsen & St John, 2002; Pritchard & Wilson 2003; Sireci et al., 2003; St John et al., 2002). While this research is of value in the study of choice and persistence, the application of these studies to small private Catholic colleges might be limited because of the homogeneity that is found in the admissions pool.

Emphasis is placed on admissions to choose the right students because these

institutions are tuition driven. These colleges place an emphasis on persistence by allocating scarce resources in dealing with retention issues. The hope of this researcher was to provide additional information on the discussion of college choice and persistence from a small private Catholic college perspective that can be used in a predictive manner to ensure that a student, who might be at risk of persistence, can succeed.

The variables of price, SES, financial aid, high school preparation and a student's cultural capital and their relationship to persistence were studied. The research subjects, procedure and data analysis that was utilized in this study are presented in this chapter, in order, to provide a basis for further interpretation.

#### Research Subjects

The data for this study came from the students who withdrew from the college during their first year of attendance as well as those who persisted. The study focused on the traditional cohort that was admitted for the fall term of academic year of 2004-05. The sample size was 132 students who left and 578 students who persisted to the second year of their college education. The sample was further reduced for analysis by removing the 38 international students, leaving 130 students who left and 542 students who continued.

#### Instrumentation

Data was retrieved from the college records for all participants. Demographics included in the data analysis were gender and geographic location (state or country) of residence. The participant's SES was measured by the financial aid data consisting of the family's adjusted gross income. The parent's educational level was the variable used to measure cultural capital. This ranged from the level of no high school to a level of

advanced college degree, an index was developed combining each parent's level of education into one measure for each student, and if neither parent had a college education the student was considered a first generation college.

Financial aid data included in the study was the amount of institutional financial grant aid that the student received. High school preparation was measured by an index that was developed using high school grade point average, standardized test scores and the number of higher level math courses completed. Price was measured as net total price, which was the difference between the college's charges and the amount of institutional grant aid that a student received. Persistence was measured as a dichotomous variable having a yes or no outcome (yes = 1, no = 0).

#### Procedure

This study involved using data for traditional age students during their freshmen year from a small private Catholic college. The data was as analyzed by three different approaches. The first approach used the total sample. Then the sample was split into an AGI index by using a student's SES; as defined by the family's adjusted gross income. This income was separated into quartiles based on a model used in the U.S. 1992 census. This approach has been used by other researchers in order to sort data for comparative purposes (Hill, Winston & Boyd, 2003). Finally, the researcher analyzed the data by gender.

Data was collected from the college database. Data comparisons between those students who left and those students who stayed was made to determine if there was variability in the data using the three methods of splitting the sample. Correlations and logistic regression were conducted in order to see if any relationship exists.

## Data Analysis

Demographic information of sex and geographic location (home) was summarized. Mean values for high school grade point, institutional grant aid and a student's family adjusted gross income were included in the analysis

Correlations were run on all variables for each of the three approaches. The statistical method used by the researcher was a technique known as logistic regression computed by SPSS (Statistical Products and Service Solution a statistical package). This method has been used by other researchers (Aldrich & Nelson, 1984, St. John, et al., 2000) to study dichotomous outcomes of the dependent variables. The dependent variable in this research study is persistence, which has a yes or no outcome (coded as 1 or 0).

The measure for testing significance was the Odds Ratio (OR). This is analogous to  $R^2$  (used for regression analysis) in that it measures the strength of the association between the independent variables and the dependent variables. Significance was tested at the 95% confidence level for this study.

The effect that a change in the independent variable has on the dependent variable (the predictability) was measured by Wald  $X^2$  (Chi-square measurement) with significance at  $p < .05$ .

## Summary

This chapter has outlined the participants, instrumentation, procedure and data analysis that the researcher will use in studying the college choice and persistence decision. Analysis of the data will be found in Chapter IV.

## CHAPTER IV

### RESULTS AND ANALYSIS

#### Introduction

This research analysis includes a discussion of the variables, the statistical techniques used, demographic data, correlation tables and logistic regression results. Further analysis was done by splitting the sample into SES groupings and then by gender with the demographic, correlation and logistic results presented for each.

#### Discussion

This research on college choice and persistence included the following variables: Total Family Adjusted Gross Income (TotAGI), Net Total Price (Netopr), Institutional Grant Aid (Intaid), First Generation College Student (FG), High School Preparedness Index (HSInd), and Persistence (WD). The variables are defined as: Total Adjusted Gross Income is equal to the student plus the parent's adjusted gross income as reported on the student Free Application for Federal Student Aid (FAFSA) and was used to measure a student's SES; Net Total Price is total cost (tuition, fees, room and board) of going to the subject college less institutional aid; Institutional Grant Aid represent the institution's financial aid (grants and scholarships) received by the student for the academic year; First Generation College Student, a measure of a student's cultural capital, was determined by examining the education level of both the father and mother of the student as reported by the student on the FAFSA and if neither parent was college educated the student was considered a first generation college student (0 and 1 were used to code these students with 0 representing a first generation student and a 1 a non first generation student); High School Preparedness was determined by combining three

variables: a student's high school grade point average, their SAT combined test score (Math and English) and the number of higher level math courses taken during high school, this variable is used to measure a student's high school preparedness; and finally, persistence was determined by examining the college record of each student to see whether they persisted to their second year at the college.

Persistence (WD) was the dependent variable of this study; it is a dichotomous variable which has either a value of 1 meaning that a student persisted or 0 which would mean that the student did not. The research question asked: could a student's persistence be predicted at the time of admissions by a combination of variables which exist for each student who has been accepted into the freshmen class of a small Catholic college?

Correlations were run on the variables of the study to determine if any relationship existed between the variables. The statistical method used by the researcher was logistic regression which was computed by SPSS. This method has been used by other researchers (Aldrich & Nelson, 1984, St. John, et al., 2000) to study dichotomous outcomes of the dependent variables.

The measure for testing significance was the Odds Ratio (OR). This is analogous to  $R^2$  (used for regression analysis) in that it measures the strength of the association between the independent variables and the dependent variables. Significance was tested at the 95% confidence level for this study. The effect that a change in the independent variable has on the dependent variable (the predictability) was measured by Wald  $X^2$  (Chi-square measurement) with significance at  $p < .05$ .

### Analysis by Total Sample

The study examined the high school and college records for the 2004-05 freshmen class of 715 students. Table 3 contains the demographics for the entire sample. Males comprised 38.9% of the sample; this is slightly lower than the national average of 40% (Strauss & Volkwein, 2004). The persistence rate for all the sample's first year students was 81.5%, stated differently 18.5% of all first year students withdrew; this is below the national average of all students and is on par with what is expected for private colleges (MacDowell, 2005).

Table 3

*Demographics for 2004-05 Freshmen Class*

	Gender	WD	Home	TotAGI	HSGPA	Intaid
Total Students	715					
Averages for Students				99,375	3.395	8,901
Female	437					
Male	278					
Did Not Persist		132				
Persisted to 2 <sup>nd</sup> Year		578				
Unknown		5				
Pennsylvania			330			
Ohio			149			
New York			120			
Other States			78			
International			38			
—						

The Home column in Table 3 indicates the home state for each student.

Pennsylvania students comprise 46.2% of the freshmen class and three states (PA, Ohio, NY) represent 83.4% of all freshmen students. The international students comprise 4.9%

of the students. As noted previously, these students were excluded from the rest of this study, as the data for these students was found to be incomplete because their family's SES and the student's high school preparedness could not be accurately determined. Also, the college had a goal of increasing diversification by increasing the numbers of international students, which led to significant institutional grants for these students which were not based on need but on geographic location and the need to increase diversity. Five other students were dropped from further analysis due to insufficient information on high school data, parent educational data and family financial data, bringing the sample size to 672 for the rest of the study's analysis.

*Correlation of Sample*

A correlation analysis was run on the total sample to determine if any relationship existed between the variables. Table 4 contains those results.

Table 4

*Correlation Table of 2004-05 Freshmen Class*

---

	TotAGI	Intaid	Netopr	HSInd	FG
TotAGI	1.00	- .121**	.121 **	.072	- .193**
Intaid	-.121**	1.00	-1.00 **	.190**	.034
Netopr	.121**	- 1.00**	1.00	-.190**	-.034
HSInd	.072	.190**	-.190**	1.00	.040
WD	.043	.052	-.052	.066	.034

---

\*\*p < .01 level (2-tailed), Pearson Correlation

\*p < .05 level (2 -tailed)

Significance was tested where  $p < .01$  and  $p < .05$ . Variables for the study did not show any significance at  $p < .05$ . Variables which are positively correlated and have  $p < .01$  are Total Family Adjusted Gross Income with Net Total Price and High School Preparedness with Institutional Grant Aid. Negatively correlated variables at  $p < .01$  include Total Family Adjusted Gross Income with Institutional Grant Aid; Net Total Price with Institutional Grant Aid; Net Total Price with High School Preparedness and First Generation College Student with Total Family Adjusted Gross Income. Persistence has no correlation that at either  $p < .05$  or  $p < .01$ .

#### *Logistic Regression by Total Sample*

Table 5 is the Logistic Regression table for the sample. The B column in the table represents the constant in the regression equation for each predictor variable; the Wald  $X^2$  column is the Chi-square measurement and the Sig. column is the significance at  $p < .05$ . This statistic is used to test the significance of individual logistic regression coefficients for each independent variable. Exp (B) column represents the Odds ratio, which is a statistic that tells how well the model is predicting. The constant in the data array is the variable Net Total Price; SPSS selects the constant by determining which variable has the least effect on the model. Neither, the Wald or the Exp (B) columns shows significance.

The variables of Total Family Adjusted Gross Income and Institutional Grant Aid have the value of 1 for Exp (B). This means that these variables are totally independent of the dependent variable. The number 1 represents statistical independence, in other words, a change in the true value of the independent variable is not associated in a change of the odds of the dependent variable assuming a given value and therefore the variable is not

considered a useful predictor in the logistic model (Garson, 2006). First Generation College Student, High School Preparedness and Net Total Price all have Exp (B) greater than 1, but are all close to one. As noted above, these variables appear not to be useful as predictors in this logistic model.

Table 5

*Logistic Regression for 2004-05 Freshmen Class*

---

Predictor	B	Wald	Sig	Exp B
Total Family AGI	.000	1.452	.228	1.00
Institutional Aid	.000	1.506	.220	1.00
First Generation	.117	.281	.596	1.124
HS Preparedness	.040	1.535	.215	1.040
Constant	.354	.457	.499	1.424

---

When logistic regression is run on a sample, it uses a two step process, called Block 0 and Block 1. Block 0 represents the testing of the null hypothesis: what is the predictability of the equation without the independent variables? Block 1 reruns the logistic regression to see what happens to the predictability of the equation as the variables are added. Table 6 shows the outcomes for the sample for Block 0 and Block 1.

Table 6

*Predictability of Logistic Regression Equation for 2004-05*

*Freshmen Class*

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	Block 0	Block 1
	Percentage correct prediction	Percentage correct prediction
Total Sample	81.2	81.2

---

The above results indicate that there was no change in the predictability of the logistics regression equation when the independent variables were added.

Sample Analysis by SES

As indicated previously, SES can be used as a measure of both cultural capital and human capital. It is thought that students with high SES have greater cultural capital and greater human capital (Bourdieu, 1983). Therefore it might be anticipated that the results of this study might be different for students from different SES classifications. The sample was analyzed by forming classifications based on a student's family adjusted gross income which is a measure of SES. Six groups were established forming an AGI Index: Full Pay (represents those students who did not file a FAFSA, which is the form that is used by colleges to help determine financial aid need. Financial aid need is the difference between the results of the FAFSA and the total cost of attending college), Low, Middle Low, Middle, Upper Middle and Upper as used in previous research (Hill, Winston & Boyd, 2003).

Table 7 contains data for the number of students: in the AGI Index, that were first

generation students and who persisted to their second year (WD). The mean of each AGI index of Total Family Adjusted Gross Income (Mean AGI), High School GPA and Institutional Grant Aid are also included.

Table 7  
*AGI Index with various statistics for the 2004-05 Freshmen Class*

AGI Index	Student Number	FG	WD	TotAGI	HS GPA	Intaid
Full Pay	27	1	20	N/A	3.18	2,303
Low	48	25	37	11,435	3.40	8,989
Middle Low	65	32	50	33,220	3.44	8,849
Middle	82	38	69	51,680	3.48	10,497
Middle Upper	162	45	138	76,513	3.41	10,082
Upper	288	60	230	156,018	3.35	8,397

The number of students increased when going from the Low group to the Upper group. The Middle Upper and Upper groups account for 66.8% of the total sample. The students who were First Generation College Students as a percentage of each group declined from the Low group (52.1%) to the Upper group (20.8%). The amount of Institutional Grant Aid shows that the Middle group received the largest average financial aid grant, they were 16.7% and 25.0% larger than the Low group and Upper group, respectively. The persistence rate for the sample ranged from a low of 74.1% from the Full Pay group to a high of 85.2% from the Middle Upper group. Of the students who did not persist, 63.1% came from the Middle Upper and Upper groups. The Upper groups mean family AGI was 13.6 times greater than the Low group, while their

institutional aid was 6.4% lower. The High School GPA ranged from 3.18 (Full Pay) to 3.48 (Middle Income).

*Correlation by SES*

A correlation was run on all the groupings of the AGI index. Table 8 and 9 shows the results. The Full Pay group had no significant correlations. Unlike the total sample correlation (Table 4) there are correlations of variables at  $p < .05$ .

Table 8

*Correlation Table by AGI Index for 2004-05 Freshmen Class for Full Pay, Upper and Middle Upper SES Groups*

---

Index	Variable	TotAGI	Intaid	Netopr	FG	HSInd
Full Pay	TotAGI	a	a	a	a	a
	Intaid	a	1.000	-1.000**	a	-.149
	Netopr	a	-1.000**	1.000	a	.149
	FG	a	a	a	a	a
	HSInd	a	-.149	.149	a	1.000
	WD	a	.131	-.131	a	-.492**
Upper	TotAGI	1.000	-.228**	.228**	-.196*	-.021
	Intaid	-.228**	1.000	-1.000**	.000	.127*
	Netopr	.228**	-1.000**	1.000	.000	-.127*
	FG	-.196*	.000	.000	1.000	-.063
	HSInd	-.021	.127*	-.127*	.063	1.000
	WD	.053	.017	-.017	.017	.136*
Middle Upper	TotAGI	1.000	-.233**	.233**	-.059	-.067
	Intaid	-.233**	1.000	-1.000**	.031	.202*
	Netopr	.233**	-1.000**	1.000	-.031	-.202*
	FG	-.059	.031	-.031	1.000	-.026
	HSInd	-.067	.202*	-.202*	-.026	1.000
	WD	.144	-.038	.038	-.077	.071

---

\*\* $p < 0.01$  level (2-tailed)

\*  $p < 0.05$  level (2-tailed).

a Cannot be computed because at least one of the variables is constant.

Table 9

*Correlation Table by AGI Index for 2004-05 Freshmen Class for Middle, Middle Low and Low SES Groups*

---

Index	Variables	TotAGI	Intaid	Netopr	FG	HSInd
Middle	TotAGI	1.000	.024	-.024	.046	-.128
	Intaid	.024	1.000	-1.000**	-.018	.277*
	Netopr	-.024	-1.000**	1.000	.018	-.277*
	FG	.046	-.018	.018	1.000	.188
	HSInd	-.128	.277*	-.277*	.188	1.000
	WD	.095	.143	-.143	-.030	.024
Middle Low	TotAGI	1.000	-.083	.083	-.106	-.070
	Intaid	-.083	1.000	-1.000**	-.138	-.192
	Netopr	.083	-1.000**	1.000	.138	.192
	FG	.048	-.090	.090	1.000	.230
	HSInd	-.070	-.192	.192	.230	1.000
	WD	.048	-.090	.090	.059	.253*
Low	TotAGI	1.000	-.232	-1.000**	.066	.142
	Intaid	-.232	1.000	-1.000**	.169	-.311*
	Netopr	.232	-1.000**	1.000	-.169	.311*
	FG	.066	.169	.066	1.000	-.021
	HSInd	.142	.311*	-.311*	-.021	1.000
	WD	.087	.047	-.047	.044	-.034

---

\*\*p < 0.01 level (2-tailed)

\* p < 0.05 level (2-tailed).

a Cannot be computed because at least one of the variables is constant.

All groups have Net Total Price and Institutional Grant Aid negatively correlated with  $p < .01$  this is the same relationship that exists in Table 4. Persistence is also correlated at  $p < .05$  for the Upper Income group with the variable of High School Preparedness and this relationship also exists for the Middle Lower Income group. These persistence results are opposite of what was found in Table 4.

*Logistic Regression by SES*

Logistic regression was run on the AGI Index to see if there was any predictability in the model. The constant for Table 10 and 11 is Institutional Grant Aid compared to Net Total Price for Table 5.

Table 10

*Logistic Regression by AGI Index for 2004-05 Freshmen Class for AGI Index of Full Pay, Upper and Middle Upper Income*

AGI Ind	Predictor	B	Wald	Sig.	Exp(B)
Full Pay	Netopr	.000	1.124	.289	1.000
	FG	-41.237	.000	1.000	.000
	HSIndex	-.644	4.153	.042	.525
	Constant	20.879	2.965	.085	18.404
Upper	Netopr	.000	.053	.818	1.000
	FG	.095	.067	.796	1.100
	HSInd	.099	3.444	.063	1.104
	Constant	-.399	.124	.724	.671
	TotAGI	.000	.915	.339	1.000
Middle Upper	Netopr	.000	.102	.750	1.000
	FG	-.061	.016	.901	.940
	HSInd	.089	.896	.344	1.093
	Constant	-2.633	1.047	.306	.072
	TotAGI	.000	1.900	.168	1.000

Table 11

*Logistic Regression by AGI Index for 2004-05 Freshmen Class for AGI Index of Low, Middle Low and Middle Income*

---

Low	Netopr	.000	.105	.746	1.000
	FG	.313	.197	.657	1.367
	HSIndex	-.067	.205	.651	.935
	Constant	1.368	.264	.607	3.926
	TotAGI	.000	.490	.484	1.000
Middle					
Low	NetoPr	.000	.319	.572	1.000
	FG	.289	.195	.659	1.335
	HSInd	.447	6.391	.011	1.564
	Constant	-8.031	4.496	.034	.000
	TotAGI	.000	.262	.609	1.000
Middle					
Income	NetToPr	.000	1.379	.240	1.000
	FG	-.009	.000	.988	.991
	HSInd	-.002	.000	.987	.998
	Constant	.967	.050	.823	2.631
	TotAGI	.000	.589	.443	1.000

---

For the Full Pay group and the Middle Low group the variable High School Preparedness has a Wald  $X^2$  value with  $p < .05$ . The Exp (B) value is also significant. The constant (Institutional Grant Aid) for the Middle Low group had a Wald  $X^2$  value with  $p < .05$  but the Exp (B) value was not significant.

The predictability results for each SES level represented by the AGI Index for Block 0 and Block 1 logistic regression equations are in Table 12. The results indicate the same general pattern as Table 5 with one exception: the Full Pay group shows a stronger predictability as more variables are added to the equation, the rate of prediction increases by 18.5%.

Table 12

*Predictability of Logistic Regression Equation by AGI Index for 2004-05*

*Freshmen Class*

---

AGI Index	Block 0	Block 1
	Correct Predictability Percentage	Correct Predictability Percentage
Low	78.7	78.7
Middle Low	77.3	74.2
Middle	84.1	84.1
Middle Upper	85.2	85.2
Upper	77.9	79.5
Full Pay	63.0	81.5

---

Sample Analysis by Gender

Demographics for the sample based on gender are in Table 13. The sample consisted of 61.5% female students and 38.5% males. Female students represented 67.1% of the first generation college students and 61.9% of the students who persisted. Mean values for Total Family Adjusted Gross Income, High School GPA and Institutional Grant Aid are also in Table 13.

Table 13

*Demographics by Gender for 2004-05 Freshmen Class*

---

Gender	N	FG	WD	TotAGI	HS GPA	Intaid
Female	413	135	336	99,916	3.521	8,886
Male	259	66	206	99,220	3.183	9,030

---

The females in the sample had a higher mean for the Family's Total Adjusted Gross Income by \$696, had lower Institutional Grant Aid of \$144 and their High School GPA was .338 higher than the males.

*Correlation by Gender*

Positive correlations at  $p < .01$  are indicated for the variables of Total Family Adjusted Gross Income with Net Total Price. Negative correlations at  $p < .01$  are also indicated for the variables of Total Family Adjusted Gross Income with Institutional Grant Aid and First Generation College Student and Net Total Price with Institutional Grant Aid. These relationships hold true for both females and males as indicated in Table 14. For females the correlations of Institutional Grant Aid with High School Preparedness and Net Total Price with High School Preparedness are  $p < .01$ . For the males these relationships have  $p < .05$ .

Table 14

*Correlation by Gender for 2004-05 Freshmen Class*

---

Gender	Variable	TotAGI	Intaid	Netopr	FG	HSInd	WD
Female	TotAGI	1.000	-.227**	.227**	-.225**	.006	.067
	Intaid	-.227**	1.000	-1.000**	.025	.162**	.020
	Netopr	.227**	-1.000**	1.000	.025	-.162**	-.020
	FG	-.225**	.025	.025	.000	.023	.028
	HSInd	.006	.162**	-.162**	.023	1.000	-.025
Male	TotAGI	1.000	-.203**	.203**	-.240**	-.040	-.032
	Intaid	-.203**	1.000	-1.000**	.106	.153*	.103
	Netopr	.203**	-1.000**	1.000	-.106	-.153*	-.103
	FG	-.240**	.106	-.106	1.000	.061	-.012
	HSInd	-.040	.153*	-.153*	.061	1.000	.045

---

\*\* $p < .01$  (2 tailed test)

\* $p < .05$  (2 tailed test)

*Logistic Regression by Gender*

Gender was used to sort the data for the logistic regression results of Table 15. High School Preparedness for the female group has a Wald  $X^2$  value with  $p < .05$ . The Exp (B) value is also significant. No other variables for either female or males were significant at that level. The constant for this model is the variable Net Total Price, which is consistent with Table 5.

Table 15

*Logistic Regression by Gender for 2004-05 Freshmen Class*

---

Gender	Predictor	B	Wald	Sig	Exp (B)
Female	Intaid	0	.132	.716	1.000
	FG	.224	.607	.436	1.252
	HSIndex.	.121	5.261	.022	1.128
	Constant	-.720	.631	.427	.487
	TotAGI	0	1.740	.187	1.000
Male	Intaid	0	.531	.466	1.000
	FG	-.115	.093	.760	.892
	HSIndex	.066	1.347	.246	1.068
	Constant	.212	.045	.833	1.236
	TotAGI	0	.119	.730	1.000

---

Table 16 shows the results of the predictability for the logistic regression model by gender. The results indicate the same general pattern as Table 6 and 12: little or no difference between the logistic equations for Block 0 and Block 1.

Table 16

*Predictability of Logistic Regression Equation by Gender  
For 2004-05 Freshmen Class*

---

Gender	Block 0	Block 1
	Correct Predictability Percentage	Correct Predictability Percentage
Female	81.7	81.4
Male	80.6	80.6

---

Summary

Chapter 4 is a report of the research findings. A demographics analysis, variable correlations and logistic regression were run and results reported. The sample was then reanalyzed using an AGI index based on SES groups and then by gender as a basis for analysis with their corresponding results.

These results are discussed in Chapter 5. Conclusions are offered on the research question and how well the model predicted relationships. Suggestions for future study on the subject of college choice and persistence are also discussed.

## CHAPTER V

### CONCLUSIONS

#### Introduction

The research question was: once the college choice decision is made, it is hypothesized that there is a relationship between the variables of college price, financial aid, SES, high school preparation, a student's cultural capital and persistence. For a small private Catholic college that has a limited endowment, persistence becomes very important from a cultural and economic perspective. If the college could have a method during the admissions process of predicting which students (who are admissible) might not persist then these students could be assigned counselors (or tutors) who would help ensure their success at the college. This could become a win-win situation for both the student and college as they both could be economically better off.

The results of this research indicate the variables of Total Family Adjusted Gross Income (TotAGI), Net Total Price (Netopr), Institutional Grant Aid (Intaid), First Generation College Student (FG), and High School Preparedness Index (HSInd) have little impact on the Persistence (WD) of students once they have made their admission decision to attend the subject college. The correlation analysis indicated that some variables showed relationships but the logistic regressions results indicate that there was little predictability of the study's variables on a student's persistence.

#### Correlation

Correlations of the variables were run three different ways: on the entire sample, by using an AGI Index and then by gender. Several of the variables were positively and negatively correlated at  $p < .01$  for the entire sample (Table 4): Total Family Adjusted

Gross Income with Net Total Price and High School Preparedness with Institutional Grant Aid are positively correlated and Total Family Adjusted Gross Income with Institutional Grant Aid, Total Family Adjusted Gross Income with First Generation College Student, Institutional Grant Aid with Net Total Price and Net Total Price with High School Preparedness are negatively correlated. These correlations indicate that a relationship exists between the stated variables; if one variable changes then another variable was affected. If the relationship is positive the change in each variable will be in the same direction, if the relationship is negative the change (increase) in one variable will cause an opposite (decrease) change in the other affected variable.

The positive correlations for Total Family Adjusted Gross Income with Net Total Price and High School Preparedness with Institutional Grant Aid are expected. As a student's family's adjusted gross income increases the net total price increases. This happens because their family's financial aid need would decrease and the student would receive less financial aid (from all sources) and therefore they would pay a higher net total price. An increase in a student's high school preparedness would mean a student would have higher SAT scores and/or a higher grade point average, this could cause the student to receive merit aid which is non need based aid that recognizes a student's academic (or other) accomplishments, thus increasing their institutional grant aid. The subject institution does award merit aid for academic performance.

The negative correlations of Total Family Adjusted Gross Income with Institutional Grant Aid, Total Family Adjusted Gross Income with First Generation College Student, Institutional Grant Aid with Net Total Price and Net Total Price with High School Preparedness are also expected for the sample. These correlations are an

outcome of the college's financial aid policy. As the family's adjusted gross income increases the amount of financial aid decreases because a student's financial aid need decreases and therefore a student receives less grant aid. When a student's institutional grant aid increases it would cause a decrease in the student's net total price as the student would owe the college less net dollars after financial aid. A student's net total price would decrease as their high school preparedness index would increase. This is a result of a student receiving more merit based aid based on their high school performance. Also, first generation college students tend to come from one of the lower SES groups (Table 7), thus they would have lower family adjusted gross incomes, therefore the larger a family's adjusted gross income becomes the less likely a student would be a first generation college student.

Additional correlations were run using an AGI index (Table 8 and 9) which split the sample based on the family's adjusted gross income levels and also by gender (Table 13). Results showed stronger correlations between variables at both  $p < .05$  and  $p < .01$ . The AGI index split the sample into six SES groups. These groups are labeled from Full Pay to Low. Full Pay refers to families who did not have need and therefore received little if any institutional grant aid. The other five groups are based on income levels that have been used in other research (Hill, Winston & Boyd, 2003).

Positive correlations of  $p < .01$  are indicated in the Upper and Middle Upper groups for Total Family Adjusted Gross Income with Net Total Price. This is the same result as in Table 4. Negative correlations at  $p < .01$  are found in all the SES groups for the variables of Institutional Grant Aid with Net Total Price which is consistent with the sample results from Table 4. Unlike the full sample where none of the variables were

significantly correlated with Persistence, the Full Pay group had High School Preparedness negatively correlated with Persistence at  $p < .01$  and the Middle Lower group had High School Preparedness positively correlated with Persistence at  $p < .05$ . This indicates for the Full Pay group that as their High School Preparedness increases their Persistence at college would decrease. For the Middle Low group this relationship is positive so as the student's High School Preparedness increases so does their Persistence. High school preparation is thought to be a key to college persistence (Schneider, Swanson & Reigle-Crumb, 1998; Schneider, 2003). Other researchers have indicated that high school math is a good predictor of college persistence (Perna & Titus, 2004). For this study high school preparation was measured by a student's high school grade point average, SAT score (math and verbal) and the number of high school math courses taken.

The results for the Middle Low group would support the above findings but the Full Pay group would indicate just the opposite. Therefore the Full Pay students might have additional requirements in order to persist. The Full Pay students have very high expectations concerning college life, facilities and other social and psychological needs (Bean, 1990; Pascarella & Terenzini, 1998; Spady, 1970, 1971; Tinto, 1987, 1993, 1998). If these needs are not met then persistence for these students could be a problem.

The Full Pay group had the lowest persistence rate of 74% when compared to the other income groups. Financing should not be an issue for these students but when compared with the Upper group, the Full Pay group's persistence rate and institutional grant aid are 9.9% and 72.5% lower respectfully. This would indicate that net total price is also a factor for the Full Pay group. This could be a "value" decision on the part of the Full Pay group; they do not see the value of the college reflected in its price. The Full Pay

group has higher cultural capital expectations (Bourdieu, 1983) than the other groups and therefore would have higher overall expectations about the value of their college choice. The college choice decision was framed by the student's habitus (Paulsen & St. John, 2002) which affects their expectations.

This cultural capital expectation can be seen in the fact that the number of first generation college students, were lowest in the Full Pay group, representing only 3.7% of the total group. In comparison the Low group had a first generation college student rate of 52.0%.

The variables of High School Preparedness with Institutional Grant Aid were positively correlated at  $p < .05$  for the Upper, Middle Upper and Middle groups. The reason for this correlation is the same as above but the relationship is not quite as strong as in the case of the total sample. The variable of Total Family Adjusted Gross Income with First Generation College Student for the Upper group was negatively correlated at  $p < .05$ . This is the only SES group that showed significance for this relationship, which is less than the total samples negative correlation of  $p < .01$ . This relationship as explained previously is understandable as the Upper group is the largest group (42.9% of entire sample) and it also has the most first generation college students (60).

For the Low group, High School Preparedness with Institutional Grant Aid is negatively correlated at  $p < .05$ . This would indicate that as the high school preparedness increases institutional aid would decrease. This same relationship exists for the Full pay group but at  $p < .05$ . This would indicate that these students receive institutional grant aid for other reasons: financial aid for the Low group would be for financial need and for the Full Pay group the financial aid would act as an enticement to attend the subject

college. This is supported by the fact that these students receive institutional aid in the average amounts of \$8,989 and \$2,303 for the Low and the Full Pay group (Table 7) respectively.

When the correlation of variables was done based on gender (Table 14), Total Family Adjusted Gross Income with Net Total Price was positively correlated at  $p < .01$  and Total Family Adjusted Gross Income with Institutional Grant Aid and Institutional Grant Aid with Net Total Price were negatively correlated at  $p < .01$  for both female and male students. These findings are consistent with both the correlation of the sample and AGI groupings. Total Family Adjusted Gross Income with First Generation College Student are negatively correlated at  $p < .01$  for both females and males, again this relationship is consistent with the total sample analysis and supports the findings of the correlation of the Upper group analysis. Institutional Grant Aid with High School Preparedness for females is positively correlated at  $p < .01$ . This relationship for the males is correlated the same except at  $p < .01$ . These results are the same as the total sample and for the same reasons.

The correlation of variables has indicated that relationships exist between some of the variables; it does not answer the question of whether the research variables can predict a student's persistence. Logistic regression was run three different ways: on the full sample, on the AGI groups and by gender to answer the question of predictability.

#### Logistic Regression

Logistic regression was run to analyze the dichotomous outcome of the dependent variable Persistence, which has a yes or no outcome. The analysis was ran on the total sample, the sample split into SES groups and then by gender. None of the predictor

variables were significant as predictors for the total sample, Table 5. For the SES groups of Full Pay and Middle Low (Table 10) the variable High School Preparedness has a Wald  $X^2$  value with  $p < .05$ . The Exp (B) value is also significant. High School Preparedness was also significant for the female group. The constant (Institutional Grant Aid) for Middle Low had a Wald  $X^2$  value with  $p < .05$  but the Exp (B) value was not significant.

These results indicate that as predictors of persistence some of the variables by themselves affected persistence but when combined into the model they were not significant. These results are the same when looking at the predictability percentage of the logistic regression models before adding any predictor variables (Table 6, 12 and 16).

The only exception to this is in Table 12. The Full Pay group's model predictability increased by 18.5% when the predictor variables were added to the equation. This result can be attributed to the fact that the variable of High School Preparedness was found to be both significant as a predictor and in its effect on persistence for that group. While this is a positive outcome for one SES group, this group is the smallest and represents only 4.0% of the entire sample.

Therefore based on this researcher's model as predictors of persistence, the variables of Total Family Adjusted Gross Income, Net Total Price, Institutional Grant Aid, First Generation College Student and High School Preparedness show little relationship to Persistence. This was not the expected outcome.

## Discussion

Based on other research (Pascarella, et al., 2004; Paulsen & St. John, 2002; Strauss & Volkwein, 2004; St. John et al., 2000) it would be expected that there should have been more predictability of the variables on persistence. One of the reasons that this might not be the case is found in the variability within the sample. The students all tend to be somewhat alike when looking at the individual variables. For example, the variability between students with respect to institutional grant aid is not great (Table 3, 7 and 13).

The average institutional grant aid for the entire sample was \$8,901, for females it is \$8,886 and \$9,030 for males. For the SES groups the range went from a low of \$2,303 for the Full Pay group to a high of \$10,497 for the Middle Income group. This range is based on the student's ability to pay. The Full Pay group does not need the institutional grants to attend as they have the ability to pay. Therefore, as the literature suggests they attend for other reasons like college major, location of the college or college amenities. What the institutional aid does is help them make the admissions decision. In contrast is the Low group, their institutional aid does make a difference whether they would attend or not. The Low group also has access to other types of aid: Pell Grants (all the students in this category were eligible for Pell grants of between \$400 and \$4,050) and state grant aid (Pennsylvania residents in this category could receive a maximum of \$3,200 in a state grant) both merit and need based. Therefore the institutional aid helps fill the "gap" left after the federal and state aid.

A family's adjusted gross income is also important in the college choice and persistence decision. The mean family's total adjusted gross income for the entire

sample was \$99,375, the female mean value was \$99,916 and for males it was \$99,220. Therefore there is not a great deal of variability in the mean value of family's total adjusted gross income. Table 7 presents a different picture based on SES groups. The Upper group represents 42.9% of the sample with an average mean value for family's adjusted gross income of \$156,018. The Low group's mean value is \$11,435 and they represent 7.14% of the sample. This difference is somewhat moderated by the colleges institutional grant aid as students in the Low, Middle Low, Middle and Middle Upper all receive greater institutional aid than the Upper and Full Pay groups.

All three middle groups (Middle Low, Middle and Middle Upper) are where college financing could become an issue because their state and federal aid decreases as the income increases, therefore most small private colleges try to "help" this situation by offering more institutional aid in the form of either merit or need based aid. It would seem to be the right thing to do as the rates of persistence are highest for both the Middle Income (84.0%) and the Middle Upper Income (85.0%) groups when compared to the rest of the sample (Table 7).

As previously noted, college price and financial aid do matter for persistence. The correlation tables or logistic regression tables did not show this. The correlation results indicate that a negative relationship exists between these variables: as institutional aid increases net total price decreases. While these results were significant, the logistic regression tables did not show a strong predictability of these variables on persistence. The reason could be in how students today finance the rest of their educational cost not covered by grant aid (as described below).

The average institutional grant aid for this sample was \$8,901, which represents

35.7% of the total price to attend the subject college. This leaves 64.3% of the cost to be financed in some fashion. Students in the Middle, Middle Low and Low SES groups will receive additional aid from federal and state sources. Also, students are receiving more outside grants and scholarships to fund part of their education. The balance of the educational cost can either be paid out of family assets or financed (Baum, 1999).

Students are financing their education with federal loans and other instruments of debt like the alternative educational loans (which are personal bank loans provided to college students). Changes in the Higher Education Act (HEA), have provided more students the opportunity to borrow the money needed to fund college. Students and parents from all SES groups have the ability to borrow federally guaranteed loans to pay the cost of college. Banks are assisting in this by offering numerous alternative educational loans; these are loans that are in the student's name that require a credit worthy cosigner. These loans have increased in their use and popularity as a means for financing college educations (Choy, 2004).

Price and financial aid are important but the students attending the subject college have made their college choice decision based on a variety of issues. Most of these students believe in the idea that they must go to college (Carey, 2004; DesJardins et al., 2002). Students believe that their cultural and human capital are both enhanced as a result of a college education, therefore it would seem the cost of the investment in one's education would be worth the price. More students are borrowing and the loan amounts are also increasing. The Deficit Reduction Act of 2005 which was signed into law February 2006, contained the reauthorization of the Higher Education Act (HEA), called the Higher Education Reauthorization Act (HERA). Part of this legislation was aimed at

student borrowing. The amount of first year and second year loan limits were increased to \$3,500 and \$4,500 respectively (Davis, 2006). The total undergraduate loan limit was not increased. This legislation allows students to borrow more money sooner thus helping more first and second year students. The idea here is that a college education is a good investment (students are investing in their human capital) and future earnings can be used to pay back the school loans. This should also help persistence if price is an issue because without loans, some students would be unable to attend colleges of their choice and some students would forgo college all together.

High school preparation is also important for college persistence (Schneider, Swanson & Reigle-Crumb, 1998; Schneider, 2003) but the results of using this variable as a predictor of persistence for this research was disappointing. The Full Pay group (Table 10) and the female group (Table 15) were the only groups that showed significance as a predictor variable. These results can be partially explained by looking at the average high school grade point averages which was one of the components of the High School Preparedness. (the other components being SAT scores and number of advanced math classes). The total sample had a mean high school grade point of 3.40, the AGI index groups mean value ranged from 3.18 for the Full Pay group to 3.48 to the Middle group. By gender, the female mean value was 3.52 and for males 3.18. This would indicate that there was not a great deal of variability in the high school grade point for the sample by any measure. Also, the students of the sample had to meet the academic qualifications for admission to the subject institution. The assumption would be then that the students were academically qualified to attend and therefore they had been prepared by their high schools.

First generation college student showed no significance for the entire sample, the AGI index groups or by gender as a predictor of persistence. First generation students represent 29.9% of the entire sample, 32.7% of all females and 25.4% of all males, and range from a low of 3.7% for the Full Pay group to 52.1% of the Low group. All factors being equal, the first generation college student variable had no more significant effect on the model than did any other variables. This is a different result than what the literature indicates (Advisory Committee on Student Financial Assistance, 2002; Heller, 2003; Pascarella, et al., 2004). A reason for this is again the lack of variability in the student sample. As these first generation students would on the average have similar Family Adjusted Gross Income, High School Preparedness, Institutional Grant Aid and Net Total Price as non first generation students.

#### Future Research

The research that was presented here indicates that trying to predict an outcome of persistence based on the variables of the study for college students during the admissions process would not work any better than not using a model regardless of a student's SES or gender. It also indicates that there might be other reasons (beside economic and academic) that would cause a student to leave a college. These would include both socialization and psychological reasons.

Research has indicated that socialization during the first year at college can help persistence (Cabrera, Nora & Castaneda, 1993). Examples of this socialization can be in the form of joining various organizations, obtaining a campus employment job, becoming active in campus politics or becoming active in ones chosen major field of study. Social adaptation and academic processes have been found to increase study experiences and

persistence (Tinto, 1987, 1993). Thus socialization can improve a student's academic experience. Also, researchers have reported that students who do not bond (integrate) with the college could have persistence issues (Leppel, 2002). Bonding leads to satisfaction with the college experience. Satisfaction has been proposed to be linked to student persistence and performance (Hatcher, et al., 1992; Rautopuro & Vaisanen, 2001).

Student commitment is the term used by Strauss and Volkwein (2004) to describe a student's overall satisfaction, sense of belonging, perception of quality, match with and attraction to a particular institution, all psychological factors that affect persistence. Student commitment was not part of this study but future research should look at measuring a student's commitment to the college. Small private Catholic colleges might consider a comparison study using the variables of this research plus sociological and psychological variables of students who persist and those who did not. The results of the study might reveal areas in which the college could place resources (people and money) to assist students with persistence. A note of caution should be raised at this point about future research from a small private Catholic college perspective.

Perhaps an overall rate of persistence of 81.5% (freshmen year rate) might be the best rate that a college can expect to achieve for a school of the profile (small private Catholic college) attended by the students that were studied. As stated previously, even with soaring postsecondary enrollments, the proportion of college students completing degrees of any type has remained flat during the past quarter-century (Gladieux, 2002). To change this outcome from an economic perspective, a college would need to look at the opportunity cost that this change would require. The cost of decreasing attrition

needs to be weighed against the individual student's improvement of cultural and human capital. Researchers (Conklin & Finney, 1999; DesJardins, et al., 2002; Jacoby, 2004; Paulsen, 2001) have indicated that improving a person's human capital provides them with increased economic opportunity. Also, increasing a person's cultural capital will increase one's wealth (Lawley, 1994). Therefore an improvement in the persistence rate will increase both a student's cultural and human capital. As part of any future study on college choice and persistence colleges of this profile need to do a cost benefit analysis as part of the study in order to decide whether improving the rate of persistence is worth the cost to the college in monetary terms (Pascarella & Terenzini, 1998).

This study has determined that the causes of Persistence can't be attributed solely to quantifiable factors that all students possess: High School Preparedness, Family Adjusted Gross Income, Institutional Grant Aid, Net Total Price and being a First Generation College Student. Therefore persistence issues must also center on the college and the relationship that the college has with the individual student. Future studies need to consider the psychological and social aspects of freshmen integration into college.

#### Implications for Practice

Small private Catholic colleges can use the results of this research to enhance their own student's persistence efforts even though the model did not support the predictability of the studied variables on persistence. By analyzing student records, based on the variables of this study, profiles could be developed to assist the retention efforts of the college.

Colleges know the academic preparedness of the students they admit from the student's high school records. The family's socioeconomic status and parent educational

level can be determined from a student's FAFSA, which most students file for financial aid. Researchers ((DesJardins, et al., 2002; Griswald, 1999; Heller, 1999; Leppel, 2002; McDonough, et al., 1997; Paulsen & St John, 2002; Pritchard & Wilson, 2003; Sireci, et al., 2003; St John, et al., 2002; Tinto, 1993) have demonstrated that these variables are linked to persistence.

These profiles then can be sorted by SES groups or by gender (as in this study) in order to help the recruiting goals of the college. Small private Catholic colleges set recruiting goals and if the college is aware of the profile of their students then this data could be used to help accomplish these goals. This research has indicated that for this subject college; financial aid and price were not good predictors of persistence. This would indicate that perhaps there is an opportunity for this college to use financial aid dollars more strategically to enhance their overall admissions goals. By analyzing the student data determinations can be made on how financial aid dollars are being used in relationship to a student's ability to pay (Hill, et al., 2003). Once obtained this information could be used to enhance the retention efforts of the college.

This research indicates that like colleges need to consider the "whole picture" sociological when looking at retention. Academic and economic factors are important but so are the psychological factors that relate to persistence (Bean, 1990; Carey, 2005; Hatcher, et al., 1992; Mumper, 1998; Strauss & Volkwein, 2004; Tinto, 1987). Colleges need to be sure that they are providing (within economic reason) the necessary support services to ensure the student's persistence. Student surveys could be used to capture this type of information, surveying the students at the start and end of each year. Also, when students leave an "exit survey" could be used to obtain useful data on why the student is

leaving. Questions could be constructed on various issues from academics to student commitment.

These results coupled with the pre-college conditions of high school preparedness, socioeconomic status and cultural capital and the college performance measures of student grade point and credits completed can be used to determine why these students are leaving. This effort could involve the entire campus. The phrase “retention is just not an office, it is every one’s business”, is true. From admissions, student financial services, academic affairs and student affairs, the entire college community should be involved in a student’s college persistence.

#### Final Conclusions

The variables that were studied: Net College Price, Institutional Grant Aid, Family Adjusted Gross Income, High School Preparedness, and First Generation College Student, do not have significant predictive value on persistence once a student has made the college choice decision for a small private Catholic college.

As noted, research (DesJardins, et al., 2002; Griswald, 1999; Heller, 1999; Leppe, 2002; McDonough, et al., 1997; Paulsen & St John, 2002; Pritchard & Wilson, 2003; Sireci, et al., 2003; Spady, 1970, 1971; St John, et al., 2002; Tinto, 1993) has indicated numerous reasons for lack of persistence: from poor academic habits to personal family issues. Researchers are trying to understand these issues and what causes students to act the way they do.

Another point of view is offered by Adelman (2006). He states that all through their high school years students have been treated as children. Once they arrive at college, they find out that they are now adults who have the freedom of choice. He uses a quote

by Tinto (1987) that offers sound guidance for colleges when struggling with this idea of persistence:

“Though...institutions owe each admitted student an equal degree of attention, it does not follow that institutions should be held accountable for the equal education of all admitted students. To absolve (students) of at least partial responsibility for their own education is to make a serious error.”(p.135)

Therefore it is the conclusion of this researcher that persistence is based on more than the variables that were analyzed in this study.

For a small private Catholic college, access and persistence will continue to be topics for research and deliberation. Trying to find a predictive model that would help identify students who were at risk of attrition at the admissions stage was the goal of this research. While not successful, this research does provide insight into the issue of college choice and persistence that can be used by other like colleges to further their efforts in these areas. For all colleges the issues of college choice and persistence will be on going. Hopefully with future research and understanding of the issues involved, both college choice and persistence can be improved for the next generation of college students. Once the college choice decision is made, then persistence is what matters. By increasing a student's chance for persistence colleges will be helping to increase a student's cultural and human capital.

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