STAYING IN THE FAST LANE: PREDICTING ADULT

STUDENT RETENTION IN AN ACCELERATED

DEGREE COMPLETION PROGRAM

By

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CHAPTER I

INTRODUCTION

The face of higher education is changing. Enrollment patterns over the past 50 years

demonstrate demographic groups are participating in higher education in unprecedented

numbers. Much of this growth can be attributed to the dramatic increased participation of

adult students, women, minorities, and part-time students (Andres et al, 1997). This

growth has a foundation on demographic shifts, technological and labor developments,

and globalization.

Demographic pattern shifts have helped contribute to the increased participation

of adult students in higher education. Adult students are now participating at rates that

have not been seen in the history of higher education. Adult participation has risen at a

meteoric rate of 171.4% from 1970 to 1991 (Kasworm, 2002). During the same time, the

percentage of adult students in total undergraduate enrollment grew from 28% to 43%

(Kasworm, 2003). This growth of enrollment cannot be solely attributed to more adults

participating in higher education. As the baby boomer generation aged, the traditional age

student population did not grow at the same rate. What has resulted is an upward shift in

age distribution for the U.S population (Stoner & Esby, 1998). Not only are more adult

students participating in higher education, there are more adults in the population who

can pursue higher education.

The increase of adult student participation cannot be fully explained simply based on the upward shift in age distribution. There are groups within the adult population that are participating at higher rates than ever. This is most evident in the increased enrollment of women and minorities. The enrollment of women aged 25 and older grew 312% from 1970 to 1990 (Stoner & Esby, 1998). The trends for minority participation in higher education have increased independent from age. The percentages of minorities aged 25 and older enrolled in higher education are similar to those of younger minority college students (Kasworm, 2002). The increased participation of adult students, including women and minorities, and the upward shift in age distribution in the United States, show the demographic factors influencing higher education.

Technological development has also contributed to the increased participation of adult students in higher education. These developments have been a prime catalyst for employers seeking a highly skilled and educated workforce. The necessity for a large subset of the U.S. population to attain a post secondary degree or certificate has developed primarily because of the technological revolution. This has been a major shift in educational objectives since the period when U.S. economy was based heavily on the agricultural and industrial or manufacturing sectors of the workforce. Past generations were able to work in many sectors with just a high school diploma; however, today, in many cases a high school diploma will not provide necessary qualifications for entry-level jobs and certainly would limit the possibilities of highly skilled jobs (CAEL, 2008). A 1994 survey of U.S employers stated that 56% of businesses reported an increase in job skill requirements during the previous three year period whereas only 5% reported a reduction of skill requirements (Kasworm, 2003). During the past 50 years, the ratio of

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skilled jobs to unskilled jobs in the U.S has increased from 20% to 85%. This trend is expected to continue. The U.S. Bureau of Labor Statistics predicts that 22% of new jobs created between 2002-2012 will require higher education. This is nearly double the rate of new jobs not requiring higher education (Desrochers, n.d.). As the labor markets continue to demand higher levels of education and specialized skills, the supply of workers must be more educated and specialized to meet the demand.

Demographic patterns show that relying on the traditional K–16 pipeline to meet the educational and workforce needs of the United States will not be sufficient in meeting the demand (CAEL, 2008). This can be partly attributed to the fact that technological advancements have occurred at such a rate that the population of trained and educated youth entering the workforce does not meet the demand for highly skilled employees (Kasworm, 2002). This increased demand for skilled labor has been the impetus for many adults to return to college. Many adult students have seen the advancement in technology as an opportunity to further their career in a rapidly changing environment (Andres et al., 1997).

Globalization has also influenced the adult participation in higher education. Globalization is interrelated to technology, because technological advancement has fueled global development. The technological revolution has made possible an interconnected world (Morey, 2004). For nations to experience economic development as the markets become more global, they will have to acquire and use scientific, technological, and socioeconomic knowledge (Morey, 2004). These changes in the global marketplace and technology have driven adult students back to the classroom as the need for specialized knowledge impacts their work and personal lives (Kasworm, 2003).

Lifelong learning has grown out of this reality. In advancing societies and the advancing interrelated world, the rate of change occurs so quickly that the urgency needed in dealing with these social realities lies with adults. Simply waiting for the youth to fill these roles will not meet the demands of this rapid change (Merriam & Caffarrela, 1991).

This is demonstrated in the shift from a product based economy to a service based information economy. This shift is a result of globalization and technological revolution. The U.S. has witnessed a decline in industrial jobs as many of these functions have been automated or simply outsourced to foreign countries with lower labor costs. These service-based jobs are becoming more and information based. The once labor intensive production jobs are being replaced with jobs that generate, process, analyze, and distribute information. This developing information society will employ the vast majority of Americans in the future (Merriam & Caffarella, 1991).

Naisbitt and Aburdene (1990) state "we are in an unprecedented period of accelerated change, perhaps the most breathtaking of which is the swiftness of our rush to all the world's becoming a single economy" (p. 19). An information-based society by its nature is in a constant state of change and development. This development does not only impact the traditional age students as they move into the workforce. There is an immediate need for adult students to pursue higher education for themselves and society. Merriam and Caffarella (1991) state "the effect of the global economy and technological advances on the nature of adult learning is staggering. Adults find that they must continue their learning past formal schooling in order to function at work, at home, and in their communities" (p. 2).

Who are adult students? There are as many answers to this question as there are adults on which to base the answer. One should take caution in labeling adult students as one homogenous group. Adult students demonstrate more diversity in their demographics, motivations, needs, expectations, and experiences of higher education, than their younger counterparts (Richardson & King, 1998). Hadfield (2003) accurately portrays the diversity of adult students:

> Draw a profile of the typical non-traditional student. Remember that nontraditional students range in age from twenty-five to eighty. Many are working adults, but many others are unemployed adults, suffering from the most recent downsizing, right-sizing, or any of the other new-age terms for firings. Some have been absent from formal education for twenty-years, and other recently completed an associate's degree. Nontraditional students are engineers, nurses, secretaries, CEO's, production line workers, teachers, parking-lot attendants, dog walkers, and exotic dancers. They are immigrants, displaced homemakers, professionals changing careers, individuals seeking personal growth and development, grandparents, single parents, and married couples. Having a little trouble with this picture? (p. 18)

This description of adult students accurately conveys the heterogeneity of this important group in higher education. While the diversity has been clearly demonstrated, there are common threads among many adult students.

Age is the most obvious characteristic that can be used to define adult students. The most commonly accepted age ranges start from 21 years, 25 years, or 30 years and older (Kasworm, 1993). Another approach would be to include any student over the

traditional student age of 18-22 (Richardson & King, 1998). The diversity in age of adult students is much like diversity of other adult student characteristics. Students may pursue higher education from their early twenties and above. Some schools even have adult students into their seventies. Age is the easiest way to group adult students; however, it should not be the only characteristic that defines adult students.

Adult women have been participating in higher education at an ever increasing rate. The participation of women aged 25 and older in higher education has increased 312.5% from 1970 to 1990 (Stoner & Esby). The growth of enrollment for women ages 35 and older grew 500% between 1970 and 2000 (Kasworm et al, 2002). Much of this growth can be explained by changes in societal norms in America. Prior to World War II, womens' roles were limited primarily to traditional work roles including teachers, food service, secretaries, nurses, childcare, or stay at home wife/mother. As the societal norms changed, women began attending educational programs that were once male dominated. Another contributing factor is the change in structure of the American household. Many couples now feel the need to have dual incomes in a household. Couples are also having fewer children than in the past and will often use the increase in discretionary income to further their and their children's education (Bean & Metzner, 1985). As a result of this dramatic increase, women now comprise more of the adult student enrollment than men (Kasworm, 2003; Wlodkowski & Kasworm, 2003).

The majority of adult students do not participate in full-time enrollment like many of the traditional age population (Bean & Metzner, 1985). Approximately 69% of adult students carry less than half a collegiate course load each term (Kasworm, 2003). There are several reasons why adult students do not typically enroll in full-time coursework.

Often students have other time limiting responsibilities that must be balanced. These would include marriage, children, employment, civic, and social responsibilities (Wlodkowski & Kasworm, 2003). For many, enrolling part-time is the only way to persist in completing their educational goal.

Being employed, while attending institutions of higher education, is a common thread among many adult students. With the financial demands associated with the cost of living, most adult students are unable to attend higher education institutions without working. Approximately 50% of all adult students work 40 or more hours per week and 25% of adult students work between 20 and 39 hours per week. The remaining 25% work less than 20 hours per week (Kasworm, 2003). These students face a delicate balancing act between work responsibilities and school demands.

Adult students often enter or return to higher education for the prospects of advancing their career or increasing their earning potential. Bean & Metzner (1985) state:

> The decline in blue-collar sector of the economy has had a profound effect on college enrollments, as large numbers of workers entering or re-entering the labor force must choose either low-paying jobs in the service sector or higher paying jobs in the technical, business, or professional service areas which require specialized training. Higher education institutions have become the gatekeepers to many of these positions, and nontraditional students have enrolled in various vocational, technical, and professional programs to obtain access to preferred work (p. 487).

As the labor market turns more toward professional service and information based jobs, adults find pursuing higher education as the mechanism through which to achieve their goals of career advancement and increased earnings potential.

One of the many issues that adult students face is balancing the different roles they play in life. For instance, many students are faced with balancing family and career demands (Richardson & King, 1998). Adult students are more likely to be married than traditional students ("A Profile of the Adult Student", 2005). Studies show that approximately 56% of adult undergraduate students are married. Marriage is not the only familial responsibility with which adults students are faced. Children or dependents provide another level of responsibility for adult students. Approximately 52% of adult students have one or more dependent children. It is also important to note that approximately 21% of female adult undergraduate students are single parents (Kasworm et al., 2002; Choy, 2002). While not all adult students have familial responsibilities, the statistics indicate that family is an important characteristic that many adult students share.

Even with the rise of enrollment over the past fifty years in higher education, adult students are more likely to be first generation college participants (Giancola et al, 2008). Approximately 55% of adult undergraduate students are first generation college attendees (Kasworm et al., 2002).

Socio-economic status is an important characteristic to consider when defining adult students. There is a correlation with educational attainment and income potential (Kazis et al, 2007; Spanard, 1990). The average earnings of an American worker with only a high school diploma is $30,800 while the average for a bachelor degree holder is $48,800; a 38% difference (Kazis et al, 2007). Given this fact, adult students are more

likely to come from lower socio-economic backgrounds (Kasworm et al., 2002). Many adult students have goals of earning more income. Attaining a degree is the key element to moving up the socio-economic ladder.

Even though adult students are participating in higher education at unprecedented rates, unfortunately, this meteoric growth has not translated into successful completion rates (Watters, 2003). Adult students, like their traditional age counter-parts, do not graduate at the same rate that they enroll, much to the chagrin of educators and administrators in higher education. The high attrition rates of adult students are associated with negative economic and social consequences for individual students, institutions of higher education, and society at large. For the individual student the result is the possibility of increased debt as a result of pursuing a degree and foregone future earnings which negates much of the time, energy and money given to pursue educational goals. From an institutional perspective much is lost in terms of allocated resources, deficiencies in the production of graduates, and failure to meet the demands from an accountability standpoint. The impact on society may be the most profound. Negative consequences include higher rates of unemployment, lower academic preparation among future generations, lower levels of civic participation, lower tax revenues and higher incarceration rates (Baum & Payea, 2005; Kelly, 2005).

Adult student retention is unlike that of traditional college student retention. The breakthrough research of Tinto and Spady explained that the retention of traditional students can be most impacted by the social integration of the student with the institution. Bean and Metzner (1985) found that the variables in the external environment impact the retention of adult students far more than social integration to the institution does. The

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decision for adult students to withdrawal from higher education institutions is grounded in the complexity of intervening variables (Tweedell, 2000). The interaction of demographic, financial, and academic factors helps precipitate the decision to withdrawal rather than one specific variable causing the withdrawal (Bean & Metzner, 1985; Kerka, 1988; McGivney, 2004; Pantages & Creedon, 1978). Adult students face obstacles related to work, family, financial responsibilities, community responsibilities, student role responsibilities, and the responsibility to self which puts them at greater risk of not achieving their educational goals (Kasworm, 2002; Kazis, et al, 2007). The ability to play multiple roles can be a challenging experience for the adult experience that can often result in increased stress and eventual withdrawal.

Employment has been found to be one of the key incentives but also a massive barrier for adult participation in higher education (Kasworm, 2003). Adult students are faced with responsibilities at work that impact the time they can spend on academic endeavors. The decision to stay at work to complete a project or to work on an assignment due that evening can be difficult. In a recent study, over 40% of non-traditional students indicated that working had a negative impact on academic achievement (Choy 2002). Adult students who work full-time are at greater risk of withdrawal. Berker, Horn and Carrol (2003) found that six years after starting undergraduate coursework, 62% of adult students who worked full-time had not completed a degree or certificate and were no longer enrolled in coursework (in Adult Learners in Higher Education). Also, working adult students are often faced with difficulties in scheduling classes. A recent study found that over 50% of non-traditional

students reported that working made it difficult to schedule classes and negatively influenced the number of classes in which they enrolled (Choy, 2002).

Family obligations can also challenge adult student persistence. More than 56% of adult students are married and over 56% of adult students have dependents or children. The balancing of family and academic responsibilities can pose challenges for adult students. Whether it is activities related to children such as school or extra-curricular activities, or related to spouse such as supporting and nurturing their relationship, or balancing roles within the household, adult students can often find it difficult to manage family responsibilities and school demands (Kasworm et al., 2002).

Many adult students not only work and have families, they are also actively involved within the community. Students take part in activities related to church, social service organizations, and other civic organizations. These experiences provide excellent leadership development for adult students. Given the many responsibilities adult students face, many students reduce or eliminate their community involvement (Kasworm et al., 2002). Active participation in community events and organizations can be a challenge for adult students.

The role of the student itself places many demands on adult students. Being an adult student is not just a label. The academic requirements of participating in higher education can require a great amount of time, energy, and dedication. Kasworm et al. (2002) states " this area is fraught with time and resources issues related to actively pursuing homework and final projects, getting to and from courses and the library, typing papers, collaborating with study groups, and engaging in other activities to support academic success" (p. 33). Many adult students need more time dedicated to their studies

than they can give. They often must work on studies in between all of their employment, family, and community responsibilities. Many adult students feel guilt and frustration that they are unable to devote more time to the academic demands.

The analogy of a pie is very fitting for discussing the balancing of time demands for adult students. The pie is only so large. The competing demands must take their portion of the pie and it is up to the student to decide how much of the pie each responsibility will consume. Knowing that the pie is a limited resource, it can be difficult to prioritize and balance these competing demands. For instance, if more and more time is taken for family responsibilities or employment, less time is available for academic pursuits. Likewise, if more time is dedicated to academic endeavors, then less time is available for work, family, and the community. These competing demands can make it very difficult for the student to balance each responsibility and successfully complete his or her educational goal. Stress and exhaustion can result from the inability to balance all of the external responsibilities and the responsibility of being a student. In these cases, there is a much higher likelihood of withdrawal.

Adult students may feel they have spread themselves too thin with respect to all of their responsibilities. Many students sacrifice themselves and their personal needs in order to meet the demands of these responsibilities. In these instances the responsibility to the adult's self can go unmet. Kasworm et al. (2002) state:

> Many adult students have a wavering self-image and limited self-confidence. Their sense of self will be tested in the collegiate environment, as well as challenged by their external world as they participate in college. Often negative messages, as well as self-doubts, lead to limited energies and productivity in

college. Further, initial goals and motives may be weak or unrealistic and may be

quickly challenged with participation in a competitive collegiate environment

some adults self-destruct when faced with challenges and do not follow through

on their initial enrollment application or stop out from further college enrollment

when difficulties are presented (p. 34).

Not only must adult students balance the external responsibilities, the responsibility to

self must be taken into account.

In response to the increased number of adult students and understanding the

responsibilities that many adult students have, institutions of higher education have

created innovative ways to reach and educate adult students. One of these is the

accelerated degree completion program. These programs were "created to meet adult

learner needs for convenience, access, and relevancy, these accelerated degree offerings

represent 'fast-tracking' credential options for part-time adult undergraduates"

(Kasworm, 2001, p. 2). Adult students come to accelerated degree completion programs

because they perceive the barriers to higher education have been lessened (Tweedell,

2000). There are a growing number of adult students enrolling in accelerated degree

completion programs. In 2001, 13% of adult students were enrolled in programs that

offered degrees in less than the traditional length of time. Within the next ten years,

estimates show that 25% of adult students will be enrolled in accelerated degree

completion programs (Wlodkowski, 2003).

While there are different types of accelerated degree programs, many of them

share similar characteristics. Many accelerated degree programs meet one night a week

for four hours. Students enroll in courses sequentially as opposed to the traditional

concurrent method. Each course typically runs five to six weeks in length. Students attend courses in a cohort model where a small group of students begin and end the program taking the same classes in between. Students receive a schedule for their entire program at the initial enrollment. The curriculum is developed centrally and standardized across the program. Students receive a "module" at the beginning of each course outlining the homework and course schedule. Full-time faculty are not a staple in accelerated degree programs as they are in traditional programs. The majority of faculty are comprised of part-time adjunct faculty members who work in the field in which they teach (Morey, 2004).

Accelerated degree programs also claim to do a better job of teaching adult students than traditional programs because of the small class size, experiential learning as opposed to lecture based, and efficient approach in training instructors (Morey, 2004). Accelerated programs are often offered in professional fields such as business administration because the market of prospective students is so large. Many adult students perceive an increased career potential by completing a business degree. This is one of the reasons faculty are selected who work in the field in which they teach. The "real world" applications can be easily seen and understood (Wlodkowski, 2003). Business programs are also usually cost effective to implement because of little academic related expenses. Programs such as nursing or MIS can be cost inhibitive because of equipment and faculty cost. These characteristics make accelerated degree programs an attractive option to adult students who balance many different responsibilities in their lives and are interested in career development.

Accelerated degree programs have made their mark on higher education because they are moneymakers (Wlodkowksi & Kasworm, 2003). This is clearly evident with for-profit institutions such as University of Phoenix and faith based institutions. A study of mainline Protestant, evangelical Protestant, and Catholic institutions found that two-thirds of them had instituted one or more bachelor degree program for adult students. Of these institutions, 60% of the adult programs were created in the past thirteen years. Many of these programs are accelerated (Wlodkowski, 2003).

Adult accelerated degree completion programs have been an attractive option for many students, and although the format helps reduce some of the barriers to completing a degree, it does not completely remove them. Adult student attrition in these programs is a critical issue for the student, institution and society at large. Studies of attrition at accelerated degree programs found that close to 40% of adult students in degree completion programs graduate within six years (Wlodkowski et al, 2001; Wlodkowski & Westover, 1999). The real concern is the roughly 60% of adult students who withdraw before completing a degree. What should be alarming is that these statistics are similar to both traditional age students and adult students in traditional programs. How much do accelerated degree programs reduce the barriers of completion?

While much has been done in the way of studying retention of adult students in traditional programs over the past several decades, the same cannot be said for the study of adult student retention. Even less research can be found on adult student retention in accelerated degree completion programs (Tweedell, 2000; Wlodkowski, 2003). The lack of research and the impact that adult attrition can have is the primary rationale for

selecting the retention of adults in adult degree completion programs as the topic for this study.

Problem Statement

Retention of adult students has become a major focus among institutions of higher education. The research that has been done in the study of retention of adult students in accelerated degree completion programs is sparse. Accelerated degree completion programs offer adult students a convenient way to pursue higher education in the face of competing demands for the student's resources, yet the research available shows the attrition rates of adult students in these programs are similar to adult students and traditional age students in traditional programs.

There is an interaction of variables that contributes to an adult student's withdrawal (Bean & Metzner, 1985). Employment, families, community, demands from coursework, can impact a student's ability to persist through a program. Understanding how these variables interact is important in predicting adult student attrition. This understanding can aid institutions in identifying students who may be at risk of withdrawal and implementing strategies and programming that can assist students who are at risk. The knowledge can also help federal and state government in implementing strategies to aid adults in higher education

Purpose of the Study

The purpose of this study is to determine if there are demographic, financial, and academic variables that are statistically significant at predicting students who withdrawal and students who complete an accelerated degree completion program at a small, Catholic institution. To achieve this purpose a quantitative study was developed using

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archived student data from an accelerated degree program at a small, private, Catholic institution.

Research Questions

#1) Is there a distinction between selected demographic, financial, and academic variables for adult students who withdrawal or complete an accelerated degree completion program?

#2) If there is a distinction between these variables, is it statistically significant at predicting completion or withdrawal?

Significance of the Study

There are many types of higher education institutions that offer accelerated programs. Because few studies have been done on the retention of adult students in accelerated degree completion programs at private faith-based institutions, this study will help lead to an understanding of the variables that influence student persistence or withdrawal in these programs. It can be costly to recruit, enroll, and educate adult students in adult accelerated degree programs. Being able to predict persistence or withdrawal can be very advantageous to administrators in these programs. Identifying students who may be more likely to withdrawal from a program can help administrators create intervention programs and other strategic initiatives to help prevent the withdrawal of adult students.

Conceptual Framework

Of the studies that have been conducted on retention in accelerated degree completion programs, one is extremely relevant in framing the current study. Wlodkowski et al. (2001) performed a study using archived data at two different types of

institutions. One was a large private Catholic institution and the other a large public institution. While the Catholic institution in the current study is much smaller than the one selected in the Wlodkowski study, it is a valid basis from which to frame this study. Wlodkowski et al (2001) sought to determine whether or not certain variables could distinguish adult students who withdrew or completed an accelerated degree completion program. The study then focused on determining whether or not any differences between the students were significant. The independent variables tested in the study were gender, age, ethnicity, GPA, and other background variables. Logistic regression was used because of the dichotomous outcome variable, withdrew or completed. The current study will replicate much of the Wlodkowski with respect to design; however, some of the independent variables will differ. The independent variables chosen in the current study were chosen based on the previous research done by Bean and Metzner (1985), Giancola et al. (2008), Kasworm et. al (2002), McGivney (2004), & Wlodkowski et al. (2001). These researchers have identified variables that can influence an adult student's choice to withdrawal or complete a degree.

Summary

Higher education has witnessed a great change in the demographics of its student population over the past 50 years. The participation of adults, minorities, and women has increased dramatically during this timeframe. Adult students now comprise nearly 50% of the total undergraduate student enrollment. Defining the adult student population can be a challenge. Adult students are a very diverse group; however they do share many characteristics. The National Center for Educational Statistics has categorized "non-traditional" students as having one or more of the following characteristics: part-time

attendance, financial independence from parents, full-time employment, dependents other than a spouse, single parent, lack a standard high school diploma (CAEL, 2008).

Unfortunately, the increase of adult student enrollment in institutions of higher learning is only one half of the equation. This increase has not translated into high completion rates among adult students. Many of the characteristics that adult students share can also be factors that can contribute to the withdrawal of these students from higher education. Balancing employment, families, community responsibilities, and academic coursework can be insurmountable. Understanding how these factors contribute to the withdrawal or completion of adult students can be used to help prescribe interventions in identifying and assisting these students before the factors can influence a decision to withdrawal.

CHAPTER II

REVIEW OF LITERATURE

The development of the study of retention among students in higher education has

occurred in the relatively recent past. For the traditional age population the literature is

extensive on factors contributing to withdrawal or completion. The study of adult student

retention is even more recent, and the breadth and depth of work suggests that much more

is needed to be able to completely explain withdrawal or completion among adult

students. This review will begin with the foundation of the study of retention among the

traditional age population and then will move into advances made in understanding these

occurrences in the adult student population. Then previous research on the factors

thought to impact adult retention will be examined as related to the current study.

The first breakthrough in the study of student retention was by Spady (1971).

Based in part on Durkenheim's social theory of suicide, Spady posited that students

withdrawal from institutions for similar reasons as people who commit suicide. Lack of

social integration and the establishment of membership within a community or group is

one of the characteristics that contribute to the decision to commit suicide. Similarly,

Spady theorized that a lack of social integration may be a primary cause of student

attrition (Ashar & Skenes, 1993). Tinto built upon the social integration concept in

creating his interactionalist model. This model is based on two concepts of integration

to the institution: social and academic. Tinto posits that interaction between the student and the institution characteristics determine integration and thus could result in withdrawal or completion. A lack of integration comes from two areas: incongruence and isolation. Incongruence occurs when a student somehow feels at odds with the institution. Isolation occurs when a student lacks sufficient social interaction with members of the institution. Integration can be assessed by students' perceptions of institutional academic requirements and their own skills and abilities, judgments of faculty and peer orientations, and the quality of interaction among students and between students and faculty (Ashar & Skenes, 1993). For instance, a student's academic integration could be assessed by academic achievement and the frequency of interaction with faculty members. Social integration could be measured through the various extra-curricular activities in which students participate. These activities could include: student clubs and other organizations, resident halls, intramural athletics, collegiate sporting events, etc. While Spady's work was pioneering in the research of student attrition, Tinto's student departure theory is heralded as the fundamental conceptual framework in researching student attrition and retention. Many researchers used the Tinto model for the conceptual framework of their studies (Getzalf, Sedlacek, Kearney & Blackwell, 1984; Pascarella, 1985; Terenzi & Pascarella, 1980). These studies provided evidence that Tinto's model is valid in explaining student retention and attrition.

Tinto's model focused on the traditional undergraduate student. The limitation of his model is that it does not take into account the differences between traditional age students and adult students. Because of the unique characteristics of adult students, such as part-time enrollment, off-campus residences, full-time employment,

family considerations, financial concerns, the validity of social integration of an adult student to an institution in explaining attrition or completion comes into question. Ashar & Skenes (1993) used Tinto's model with an exclusively non-traditional population. Given the competing demands for an adult student's time, social integration through extra-curricular activities is not a viable possibility for many. Instead, Ashar & Skenes measured social integration within the classroom as opposed to outside. The findings show that classes that were smaller and professionally more homogenous resulted in lower attrition than did larger, less homogenous classes. Adult students often pursue higher education because of increased career potential or opportunity. Given this fact, social integration based on Tinto's model could be problematic. Ashar & Skenes found that lack of social integration showed little significance with respect to attrition of this population. The findings provide enough evidence to question the applicability of Tinto's model in its entirety to adult students.

Bean and Metzner (1985) created a conceptual model that explains adult student attrition primarily through the impact of the external environment rather than integration to an institution. They posit that:

> older, part-time, and commuter students experience an environmental press while attending college that differs from that of traditional age, full-time residential students. For these nontraditional students, the environmental press includes less interaction in the college environment with peers or faculty members, class-related activities very similar to traditional students, and much greater interaction with the non-collegiate, external environment" (Bean & Metzner, 1985, p. 490).

The model contains four components that can contribute to a withdrawal decision.

Students who demonstrate:

> poor academic performance are expected to drop out at higher rates than students
> who perform well, and GPA is expected to be based primarily on past academic
> performance. The second major factor is intent to leave, which is expected to be
> influenced primarily by the psychological outcomes but also by the academic
> variables. The third group of variables expected to affect attrition consists of
> background and defining variables. Finally, the environmental variables are
> expected to have substantial direct effects on dropout decisions (Bean & Metzner,
> 1987, p. 490).

While the variables in each component can contribute to withdrawal, the environmental
component is credited with having the most direct effect on the decision to withdrawal.
The following is an illustration of the Bean & Metzner model.
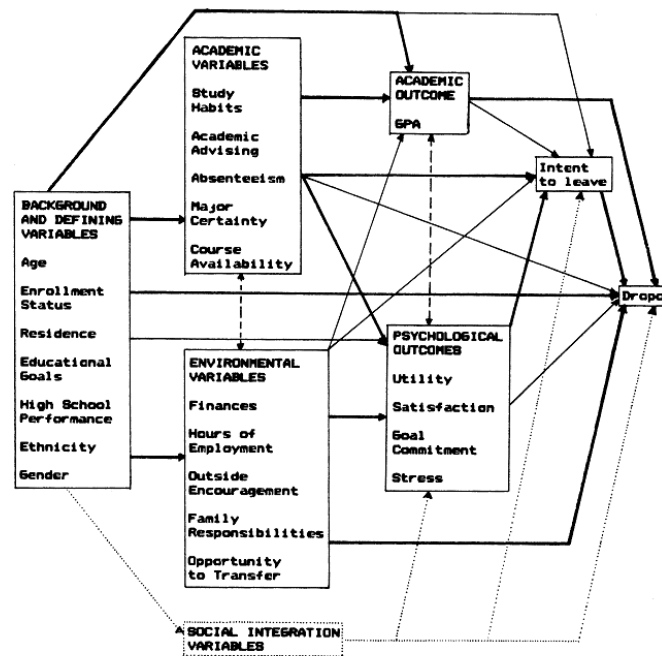
FIGURE 1. A Conceptual Model of Nontraditional Student Attrition.
Key: → Direct effects
    → Direct effects presumed most important
    ←·→ Compensatory interaction effects
    ←··→ Possible effects

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The Bean & Metzner model was a breakthrough in the study of adult student retention. The complexity of interactions between variables in the model clearly demonstrates the many factors than can influence an adult student's decision to withdrawal. Most of the studies on adult student retention have used components of the Bean & Metzner model. The following section will review the literature available on the demographic, financial, and academic variables that will be used in the current study.

Age

The literature on the effect of age on retention is contradictory. This could be explained by differences in population selection, institutional type, program type, etc. Some studies resulted in a negative association with age and retention while others exhibited a positive association. Anderson and Darkenwald (1979) found a positive relationship with age and retention. The study showed that older adults and adults who had more formal schooling were less likely to drop than younger adult students and students with less previous formal schooling. Light and Strayer (2000) also reported a positive effect on age and college completion; however, this finding reflects the fact that as adults age, there is a higher likelihood they will complete college because they have had more time to complete. If a student stops out at 23, he may try again at 24 or beyond and complete the degree at some point in the future. For these students it is more probable that they will have earned a degree by the age of 30 than 23. With this in mind, one would expect a cumulative increase in college completion as students age. While this finding takes into account a cumulative increase, it does not answer whether or not older students are more or less likely to complete a degree in a given timeframe.

A study by Horn and Carroll (1997) examined completion rate of adult students and found a negative association with age and retention. The findings show that older students are less likely to complete a degree within five years than traditional age students. Additionally, older adults are much less likely to complete a bachelor degree than younger adult students. Murtaugh, Burns, & Schuster (1999) found that retention at a sample institution decreased with age. Weidman (1985) also found that persisting students were somewhat younger than adult students who withdrew. Bean & Metzner's (1985) model accounts for differences in age only as an indirect effect on attrition. In their model the assumption is made that older students will have more familial responsibilities, employment demands, and higher levels of absenteeism. Thus, the age of the student is not the direct variable responsible for attrition or completion.

Gender

Studies on the effect of gender on adult student retention are wanting. Of the literature available there are a few noteworthy findings. Andres and Guppy (1991) found that women have a higher likelihood than men to enroll and subsequently graduate from a university program. Stoner & Esby (1998) credit the increased participation by women in higher education to the increase in educational attainment for women. Adult participation by women has helped enable women to catch up with men in educational attainment.

McGivney (2004) found consistent gender differences in completion patterns. Adult male students most often cited work-related, finance-related, or course-related reasons that contributed to withdrawal. Adult female students were more likely to withdrawal due to family responsibilities and the lack of access and affordability of childcare.

There are relatively few studies on gender in adult degree completion programs. A study conducted by Wlodowski (2001) found that female adult students were 2.3 times more likely to graduate within six years than male adult students. While the research to date on the effect of gender on retention or attrition is not exhaustive, it provides a starting point.

Ethnicity

While the study of the effect of ethnicity on retention of traditional undergraduate populations has produced many useful studies, there is a lack of research with respect to adult students and especially adult students in accelerated degree completion programs. The studies of traditional students have yielded mixed results. Several studies have shown that minorities exhibited lower persistence than white students (Astin, 1975; Bennett & Bean, 1984; MacMillan, 1969). Other studies found that African-Americans exhibited greater persistence than white students when socio-economic status, past academic achievement, and aspiration, were controlled (Astin, 1972; Peng & Fetters, 1978). There are also studies that found no relationship between ethnicity and attrition in traditional programs (Gordon & Johnson, 1982; Munro, 1981; Pascarella & Terenzini, 1980). The varied results have made it difficult to generalize findings across institutions of higher education.

Of the studies that centered on adult students, the results are not as varied. Anderson and Darkenwald (1979) concluded that differences in ethnicity were only weakly related to attrition. In the study, African-Americans were only slightly more likely to withdrawal than other ethnic groups. Bean and Metzner (1985) suggest that "the primary indirect effects of ethnicity for nontraditional students are through a strong

negative influence of GPA due to comparatively poorer education provided for minority students at the secondary level" (p. 498). This rationale may very well be outdated and not as valid as when the research was conducted. Tweedell (2000) studied the retention and attrition patterns in an adult accelerated degree completion program. The findings showed that ethnic minorities appear to be retained at the same level as white males. While much more research is needed on the effect of ethnicity on attrition or retention of adult students, the current literature suggests that there is only a weak association at best.

Family

Unlike many traditional students, adult students have familial responsibilities that can negatively impact their success in academic endeavors. Carter (1982) reported that familial responsibilities were among the five most common reasons why older adult and part-time students withdrew from a term. Generally, these responsibilities come from being married and/or having children. Balancing academic requirements and family commitments can increase stress and lead to withdrawal.

The studies of the effect marriage can have on persistence or withdrawal provide mixed results. Jacobs and King (2002) found in a study of women that being married or divorced had no statistically significant effect on completion when enrollment status is not controlled; however, when part-time enrollment is taken into account, there is a statistically significant negative effect of divorce on the completion of a degree. Hanniford and Sagaria (1994) found that being married only had a limited effect on the probability of withdrawal. One study showed the opposite to be true. Haggstrom, Kanourse, and Morrison (1986) found that being married decreased the chances of completion.

The responsibility of caring for dependent children is an important element to consider in researching retention of adult students because so many adult students have this familial responsibility. As of 2003, "about 25% of twenty-four to twenty-nine year olds, 69% of thirty-to thirty-nine year olds, and 58% of forty-year old and older adult students are parents with dependent children" (Kasworm, 2003, p. 9). This responsibility can be an inspiration but also a major deterrent for adult students persisting to their educational objective (Kasworm, 2003). Haggstrom, Kanourse, and Morrison (1986) found that having children decreased the chances of completion. Staman (1979) measured the effect of the amount of children a student has on student attrition. The conclusion was that there was a negative association between the number of children in a student's household and persistence. Berkove (1976) found that older married female commuter students with at least one child living withdrew reporting significantly greater stress from family obligations than did persisting students. Morgan and Rindfuss (1999) found in a study that younger mothers were less likely to be married. The literature is consistent in finding that the responsibility of raising children can negatively impact the chances of completion of a degree.

Socio-Economic Status/Financial Concerns

Adult students typically come from lower socio-economic backgrounds. In 1995, nearly half of adult students reported income between $10,000 to $29,999 where only 29% reported income above $30,000. Kasworm (2002) found that adult students typically have family income of $27,000 or less. Financial concerns are often cited as a key contributing factor in the withdrawal of adult students from degree programs (McGivney, 1996; Kasworm, 2002; Spanard, 1990). Given the fact that many adult students are

married and have dependent children, the ability to finance their education can be a barrier to entry as well as a perpetual problem during their academic progress. Unlike many traditional age students, parental support may not be possible for adult students. Finding ways to finance their education can be difficult. Adult students fund their education primarily through limited discretionary family income, financial aid, and employer tuition reimbursement programs (Kasworm, 2003).

Because adult students come from lower socio-economic backgrounds they tend to have less discretionary income from which to pay for college. Financial aid accessibility can also be a problem. Many adult students demonstrate need but need is not the only criteria for receiving federal aid. Students must also have an enrollment status requirement such as full-time, three-quarter time, or half-time. Considering most adults attend college part-time, piecing together consecutive semesters to meet the enrollment requirements can be difficult. Student loans require at least half-time enrollment. Pell grants are available to less than half time students, but they are generally a nominal amount. Students must also make satisfactory academic progress toward a degree to continue receiving federal aid. This can pose a problem for some adults who are only able to take limited amount of coursework over an extended period of time.

Until recently, the federal aid programs were set up for two periods of enrollment in an award year. For traditional programs these are fall and spring semesters. Adult students who wanted to accelerate through a program found it difficult when federal aid would not be available for a portion of the award year. In response to the need to assist students accelerate through a program of study, the recent reauthorization of the Higher Education Act creates a year round Pell program. Students now may receive up to two

Pell grant awards, essentially four "periods of enrollment" in a given award year. This new program will be of great benefit to adult students seeking to accelerate through degree programs. The other mechanism by which to pay for college is through employer tuition reimbursement programs. These are very extremely beneficial to adult students in covering these expenses. Unfortunately, many adults work in lower wage positions where these programs are unavailable (Kazis, et al., 2007).

Adult students often come from lower socio-economic backgrounds and face real challenges in paying for college. The cost of college, financial responsibilities, and the necessity to work are inextricably tied. Most adult students do not have the financial resources to allow them to attend college full-time and be able to meet the cost of education as well as the cost of living. While discretionary income, financial aid, and employer tuition benefits are means by which to fund college, not all adult students have access to these resources. Adult students continue to "report that their most important issue and most stressful concern is their financial fragility to support college attendance" (Kasworm, 2003, p. 8).

Academic Performance

Academic performance is a factor that has been used in studies to help explain attrition or completion patterns of adult students. Unlike many studies of traditional students, high school academic performance has not typically been taken into account in predicting academic performance of adult students. Academic performance at previous and current institutions is what is most often used in studying adult students.

Kowalsi & Cangemi (1983) synthesized previous research and summarized that persisting students shared greater intellectual and academic abilities than did non-

persisting students. Persisting students also demonstrated better study habits, self-motivation, and self-discipline which may have contributed to increased academic achievement. The Bean & Metzner (1985) model recognizes that academic performance can influence the decision to complete or withdrawal. Pascarella (1989) concludes that academic integration can be influential in the decision to withdrawal or complete for students such as adults who have or no social integration to the institution. This academic integration is measured by grade assessment, intellectual development, and interaction with faculty.

In studying retention in an accelerated degree completion program, Wlodowski et al. (2001) found that higher grade point averages increased the likelihood that adult students would complete the program. Weidman (1985) also found that persisting adult students tended to have higher grade point averages than did those who did not persist. The literature is consistent that academic performance is a valid predictor of the withdrawal or completion of an adult student.

Previous Educational Experience

Previous educational experience has been an important component of many of the studies of adult student attrition and retention. Many of these studies show a positive association with graduation and previous educational experience. Losty and Brodson (1980) examined transcripts of a group of students of which some graduated and the others withdrew. The findings showed that the background of the adult student and type of degree program were predictors of success. Of particular importance, was that the amount of previous college credit earned prior to entering a nontraditional program had an effect on the probability of success for adult students. Jacobs & King (2002) found

that adult students with accumulated periods of prior enrollment in higher education are more likely to complete a degree than adult students who enter without any prior college coursework. The research of Anderson and Darkenwald (1979) also concluded that adults with more formal schooling are less likely to withdrawal than students with less formal schooling.

Wlodkowski et al. (2001) found in the study of an accelerated degree completion program that the number of previously attended institutions and the amount of transfer credits increased the likelihood of completing the program. While there is not much research available on accelerated degree completion program, the larger literature on the retention of adult provides evidence that previous educational attainment or experience is closely tied to persistence (Kerka, 1988).

First Generation vs. Continuing Generation

The U.S. Department of Education statistics show that first generation college students are more likely to be twenty-four years of age or older (Giancola, Munz, & Trares, 2008). Currently, there are few studies that specifically examine the differences between first-generation adult college students and adult students whose parents attained a college degree. The literature on retention of traditional first-generation students may provide at least a baseline from which to frame the study of first generation adult students. For traditional students, studies have found that first generation college students are more likely to be female, older, have dependents, come from lower socio-economic statuses, and work more hours (Bui, 2002; Inman & Mayes, 1999). Traditional age first generation students also tend to enroll in college less prepared academically and psychologically (Bui 2002; Riehl 1994).

One of the only studies available used the previous research of traditional age first generation students to frame the study. Giancola et al. (2008) examined possible differences between first generation adult students and adult students whose parents achieved degrees. The study measured student opinions of institutional variables such as academic advising, academic services, admission and financial aid effectiveness, campus climate, instructor effectiveness, registration effectiveness, safety and security, and service excellence. The hypotheses indicated that due to a lack of parental experience in college, the institutional variables would be of more importance to first-generation students and that the satisfaction ratings of these variables would be lower for first-generation adult students. The results concluded that there were no differences between satisfaction ratings and that once controlled for demographics, differences in the importance of institutional variables disappeared. In explaining the result, Giancola et al. (2008) posit that "the adult student is more likely to be independent, have work experience, and interact with a variety of peoples and cultures. It is also likely that their experiences have given them a better understanding of college and its value. It may be that as adults age, the differences between first and continuing-generation students tend to dissipate through experience and growth" (p. 224). The lack of research available on the effect first generation status on retention or attrition makes it difficult to come to a definitive conclusion on any real effect.

Time of Exit

Adult students withdrawal at different times in the educational experience. Some students may leave in a relatively short time after initial enrollment while some progress

further but ultimately withdrawal prior to graduation. The following table lists factors associated with timing of withdrawal.

Factor associated with early withdrawal include:

- inappropriate or rushed course choice

- lack of preparedness for level of work

- insufficient background knowledge/grounding in a subject

- workload and time commitment greater than anticipated

- lack of academic skills such as essay writing, note taking

- difficulties in settling in and integrating into the social and academic life of an institution

- lack of support from significant others

- frustrated expectations of institution/course

Factors associated with later withdrawal include:

- changes in personal circumstances

- work-related factors

- achievement of desired goals

- financial problems and lack of financial support

- domestic commitments or problems

- long duration of program of study

- apprehension at returning to study after losing continuity

- fear of unpreparedness for examinations

(McGivney, 1996, p. 133)

Withdrawal rates are highest for adult students early in a program of study (McGivney, 1996). Tweedell (2000) examined the timing of adult student withdrawals in an accelerated degree completion program and found that almost half of departing students completed less than four courses. Wlodkowski et al. (2001) found that older students in an accelerated degree completion at a private university were more likely to withdrawal after one term. The same study showed that women and adult students with no prior college experience were at higher risk of early withdrawal at a public institution. While withdrawal rates are highest early on in a program, as students progress through a program the chances of successfully completing a degree rises significantly (McGivney, 1996). Adult students face many challenges early on in the educational experience. Understanding these challenges and how they impact the timing of withdrawals is likely to aid in interventions by institutions to help at risk students.

The study of retention among students in higher education has occurred in the relatively recent past. The traditional age population was the primary focus of these studies until the applicability of the models to adult students was questioned. Bean & Metzner (1985) discovered that the explanation of adult student attrition was unlike that of traditional age attrition. Adult students are more likely to withdrawal due to academic and external factors whereas traditional students are more likely to withdrawal due to lack of social integration. The research conducted by Bean and Metzner (1985), Giancola et al. (2008), Kasworm et. al (2002), McGivney (2004), & Wlodkowski et al. (2001) provide the basis for the studying the influence of demographic, financial, and academic variables on retention in this study.

CHAPTER III

METHODOLOGY

This chapter presents the research design and methodology used to conduct the quantitative study. The research design will be described, the predictor/independent variables with be identified, and the statistical method and data collection and analysis procedures will be explained. The research questions shaping this study are: #1) Is there a distinction between certain selected demographic, financial, and academic variables for adult students who withdrawal or complete an accelerated degree completion program? #2) If there is a distinction between these variables is it statistically significant at predicting student completion or withdrawal?

Research Design

The research design was based in part on the study by Wlodkowski et al (2001) Statistical logistic regression was used in completing the objectives of this study. Logistic regression was the most applicable statistical tool because this study has a binary or dichotomous dependent variable. Logistic regression, like other correlational methods, examines the occurrence of an outcome based on a number of independent variables. The key distinction for a logistic regression analysis is that the dependent or outcome variable is dichotomous (Christensen, 1997; Hosmer & Lemeshow, 2000). Logistic regression models the data through a sigmoidal curve with constraints of 0 and 1; the binary values

(Howell, 2002). This results in a better fit of the model than multiple linear progression provides. This study used twelve independent variables and one dependent dichotomous variable. Of the twelve independent variables, seven are continuous and five are categorical. The method of entering the variables into the logistic regression model was simultaneous (forced). This method allows for the evaluation of the predictive power of each variable as if it were the last variable entered into the equation (Swanson & Holton, 2005).

Variables

The dependent (outcome) variable in this study was completion. Completion was defined by completing the bachelor's degree program by July 1st 2007. The dependent variable was dichotomous, either the student completed the program by the specified date or the student withdrew from the program. The independent (predictor) variables consisted of demographic, financial, and academic variables. The demographic variables were age, gender, ethnicity, marital status, children status, household size, and generation college status. The financial variables were adjusted gross income, EFC, and Pell grant eligibility. The academic variables were transfer GPA and institutional GPA. For students who withdrew from the program, the number of classes before withdrawal was collected to include in the descriptive statistics.

The ethnicity frequencies necessitated the use of a dichotomous variable. There were not enough students in each minority category to justify testing each category individually. The lack of sample size for each category could have threatened the internal validity. The minority categories were combined to resolve the potential threat.

Description of Institution

The institution selected for this research is a small, private Catholic institution in the south central region of the United States. This liberal arts university has a student population of approximately 700 students. The classification of students is roughly 400 students in the traditional program and 300 in the adult accelerated degree completion program. The adult degree completion program at this institution is still in its early stages. The program was implemented in September of 2003.

The accelerated degree completion program at this institution is designed for the working adult. There is an associate's degree completion program and a bachelor's degree completion program. The focus of this study will be on the bachelor's degree completion program. To be admitted to the program, a student must have two years of work experience after high school, have earned 54 credit hours, and achieved a 2.0 in the previous coursework. The bachelor's degree completion program is 46 hours in length and can be completed in 78 weeks. The program uses a modular degree design like many other accelerated programs. Students attend class one night a week for four hours. Generally, courses are five weeks in length. Students receive a standardized syllabus for each course prior to the first night of class. Students are also required to meet outside of the classroom in a learning team for four additional hours a week. Students are given a schedule for the entire program upon initial enrollment. The program is mapped out for the student from start to finish.

The university is accredited by the North Central Agency of the Higher Learning Commission. There are three fields of study in the bachelor's program: Business Administration, Management Information Systems, and Human Development. This

institution is similar to many other smaller faith based institutions in this region. The emphasis on accelerated learning and professional types of curriculum are hallmarks of these institutions.

Data Collection Procedures

The source of the data collected in this study was POISE, the institution's campus data system. The data system consists of integrated databases across different functional areas. The data in this study was extracted from the student record module and the financial aid module. The student record module provided data for the following variables in the study: age, gender, ethnicity, transfer GPA, and institutional GPA. The financial aid module provided data for the remaining variables in the study: marital status, parent education level, adjusted gross income, household size, and expected family contribution. The information extracted from the financial aid module originated when students completed the Free Application for Federal Student Aid (FAFSA). The Central Processing System at the U.S. Department of Education processed the FAFSAs and the resulting Institutional Student Information Record (ISIR) was sent to the institution. The institution then imported these records into the campus data system. This ISIR record is what financial aid offices use to calculate need and eligibility for Federal financial aid programs. The procedures taken to compile the data started with identifying the group of students for whom to collect data. Lists were generated from the campus data system identifying students meeting the specified criteria with respect to withdrawal and completion. The lists were then used to build pointers, groups of students for whom data is needed, within the campus data system. These pointers were then used to use pull the data for the specific variables in this study. The de-identified output reports were

formatted in a comma delimited formatting. This .csv file was then imported into Microsoft Excel and configured for easier analysis.

Data Analysis Procedures

The data analysis was conducted using SPSS for Windows. The data file was setup in SPSS. The variable types were defined. The dichotomous categorical variables were coded using 0 and 1. These variables were: marital status, gender, ethnicity, children status, generation college status, and Pell grant eligibility. Correlations were run on the predictor variables to determine if there was redundancy. The EFC variable was removed because of extremely high correlation with other variables. The binary logistic regression calculation was then setup. The dependent variable Completion Status was entered. Then the predictor variables were setup for modeling. The categorical variables were then identified. The type of method of predictor variable entry was selected. In the first logistic regression the simultaneous (forced) entry method was chosen. In the second logistic regression, the forward stepwise method was selected. The output options were selected to provide the necessary statistics needed to interpret the logistic regression. Then the regression was executed.

Sample Definition

The population in this study consists of all students who completed the FAFSA and completed or withdrew from the bachelor's degree completion program from the inception of the college in September of 2003 until July of 2007. There are 168 students who comprise the sample. The breakdown of the sample is as follows: 112 students completed one of the bachelors degree programs and 56 students withdrew from one of the bachelor's degree programs.

The student data was collected from two sources: FAFSA and POISE data system. The FAFSA provided much of the demographic and financial variables and POISE provided the academic and some of the demographic variables. Due to the fact that not every student was required to complete the FAFSA, certain demographic and financial variables could not be collected for these students. Unfortunately, with the number of variables needed from the FAFSA data, it was not possible to include the students who did not complete the FAFSA. All of the FAFSA information was complete for the students in the sample. All of the student data was complete with the exception of ethnicity. Because ethnicity was self reported at the sample institution, there were 13.1% of the sample who chose not to disclose it.

Limitations

There are potential threats to internal and external validity. A potential threat to internal validity is a possible selection bias. While the entire population consisted of 223 students, all of the variable data existed for only 168 students. The sample represents 75% of the entire population. Because of the "hole" in the data, the sample consisted of only those students who had complete information. It is possible that the results of the study would vary if the data for the other students were included.

Another possible threat to internal validity is the lack of distinguishing between past enrollment statuses. Students enrolled in the program in July of 2007 were not included in this study. Students who withdrew from the program and subsequently reentered the program and were enrolled as of July of 2007 were also excluded from the study. Students that may have had multiple entries and exits from the program but were not enrolled in July of 2007 were included in the withdrawal group. Students who may

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have previously withdrawn but subsequently completed prior July of 2007 were only included in the completion group. This is significant because adult students may start and stop more than once during a program of study. As the sample stands, only completions and withdrawals are analyzed. This study cannot provide useful information about those students who had multiple entries, exits, or were enrolled at the time of data collection.

Another possible threat is the possibility of other factors contributing to withdrawal or completion. While previous research shows that demographic, financial, and academic variables influence an adult student's decision to withdrawal or complete, these variables do not explain 100% of the variance. Otherwise, predicting adult student retention would be as easy using the demographic, financial, and academic variables alone. While many of the variables studied in previous research were used in this study, others were not. For instance, Bean & Metzner (1985) found that psychological variables influence an adult student's decision to withdrawal or complete. Variables such as student feelings, attitudes, and opinions were not analyzed in this study. Wlodkowski (2001) found that financial aid can contribute to the decision to withdrawal or complete. Including financial aid may have resulted in model with stronger predictive power.

The representativeness of the study may pose a threat to external validity. This study was conducted at a small, private, faith-based, liberal arts college in the south-central region of the United States. While there is diversity in the sample size of age, gender, ethnicity, income, etc, it may be difficult to generalize the findings to institutions much different than the sample institution. The findings would be valid for institutions similar to the sample institution.

CHAPTER IV

DATA ANALYSIS

Introduction

The present study has identified selected demographic, financial, and academic variables that may be significant in the prediction of completion or withdrawal of adult students in an accelerated degree completion programs. This chapter will begin with a descriptive analysis looking at similarities and differences in demographic, financial, and academic variables between the completion group and the withdrawal group. The logistic regression analysis will follow examining the significance of the model, predictive power of the model, and significance of predictor variables.

Descriptive Analysis

While the main analysis will be conducted using the logistic regression model, it is helpful to understand the population by looking at some baseline descriptive statistics. This section will analyze the descriptive statistics of the independent (predictor) variables by variable category: demographic, financial, and academic.

Demographic

The descriptive statistics in Table 4.1 show that the completion group and withdrawal group are similar on several variables, yet differ on others. The mean age differs by only 2.38 years with a difference of standard deviation of .35. While the gender

frequencies in the completion group are equal, the withdrawal group had more females than males. Of the ethnicity data reported, the breakdown between groups is similar. The generation status did not differ greatly among the groups. In the completion group, 47.3% were first-generation college students. In addition, 46.4% of the students in the withdrawal group were first generation college students.

One of the noteworthy differences is the marital status variable. Of the students in the completion group, 37.5% were single/divorced while 62.5% were married. In the withdrawal group 30.4% were married while 69.6% were single/divorced. This is nearly the reverse of the marital status in the completion group. When marital status is examined in conjunction with the children and family size variables, some interesting conclusions can be drawn.

In the completion group, the same percentage of students who are married is also the same percentage of students who have children. While nearly 70% of the students in this group are single, 48.2% of this group have children. When family sized is examined, the withdrawal group's mean family size is 2.18, and the completion group's is 2.93. The means do not communicate much by themselves, but when viewed from the lens of marital status and children, a deeper understanding is found. The data in the withdrawal group shows a higher occurrence of being single, having an average of 2 in the household, and about a 50% likelihood of having children.

Financial

The descriptive statistics in Table 4.2 show that the financial variables differ between the completion group and the withdrawal group. The mean adjusted gross income of the completion group is $46,179 while it is $27,795 for the withdrawal group.

This is an $18,384 difference. Estimated Family Contribution (EFC) is calculated by the U.S. Department of Education when a student completes a FAFSA. This is an estimate on how much the student's family could contribute to the educational expenses for that award year. The EFC takes into account income, household size, number of household in college, taxes paid, etc. It is good baseline for establishing need for students. The EFC for the completion group is $9,350 and is $5,842 for the withdrawal group; a difference of $3,508 or 37.5%.

Pell grant eligibility is determined by the value of the EFC. For Pell awards during the time the data was collected, the EFC range was from $0-$3850. The full Pell grant was $4,050 and the minimum award was $400. Given the mean EFC of the completion group, it is not surprising that 61.6% were not eligible for Pell. The mean EFC of the withdrawal group also results in only 50% being eligible to receive Pell. This provides evidence that Pell grant awards are given to only the neediest students.

The completion group has a much higher adjusted gross income; therefore they are better positioned to be able afford their educational pursuits. This conclusion is also supported by the mean EFC which takes into account income and other factors. The withdrawal group's mean adjusted gross income and EFC are much lower. The number eligible for Pell does not increase enough to offset the differences in income. The withdrawal group faces a major challenge from a financial resource standpoint to persist in this accelerated degree completion program.

Academic

The descriptive statistics in Table 4.3 show certain similarities and differences with academic predictor variables. The institutional GPA is quite different between the

two groups. The completion group has a mean of 3.59 while the withdrawal group has a mean of 3.05. Both showed improvement from the transfer GPA means. The mean transfer GPA for the completion group is 2.74 and is 2.64 for the withdrawal group.

Time of Exit

Previous research shows that adult students who withdrawal are more likely to do so earlier in a program of study. The number of classes completed prior to withdraw was collected for each of the students in the withdrawal group. The mean for the classes completed prior to withdrawal was 4.7. This is consistent with previous research that shows that nearly 50% of students withdrawal within the first four classes.

Logistic Regression Analysis

To account for any correlations that would result in a poor model, correlations were examined among each of the predictor variables in the model. See Table 4.4 for the correlation matrix. The only variable that resulted in extremely high correlations was the EFC. It was highly correlated with the adjusted gross income and Pell eligibility. This should be no surprise as the adjusted gross income is used to calculate the EFC. Because of this correlation, the EFC was not included in the logistic regression. The other variables showed some correlation but not at a level which would be redundant or result in multicolleniarity.

The first step in the logistic regression analysis was to assess whether the model was a good fit. To do so, a comparison was needed for the observed values and the predicted values. This is accomplished through the calculating the log-likelihood. The equation for the log likelihood is below:

$$\text{log likelihood} = \sum_{i=}^{N} Y_i \ln(P(Y_i)) + 1 - Y_i) \ln(1 - P(Y_i))]$$

The log likelihood is an indicator of how much unexplained information exists after the model has been fitted. The smaller the value of the log likelihood the less unexplained information exists resulting in a better fitting statistical model. The larger the value the more unexplained information exists resulting in a poorer fitting statistical model.

To be able to assess the log likelihood of the model, a baseline is needed from which to compare. Knowing only the value for the model does not communicate to what degree of fit the model has. The baseline (constant) for the assessment is calculated by measuring the log-likelihood without any predictor variables in the model. Unlike multiple linear regression, the mean of all scores cannot be used as a baseline to determine the fit of a model. In logistic regression, the mean of the dependent variable would not provide useful information because it is a dichotomous collection of zeroes and ones. The log-likelihood of the baseline is calculated by using the frequencies of the observed outcomes of the dependent variable. The log likelihood in SPSS is multiplied by -2 because -2LL has an approximately chi-square distribution which allows for the comparison of values possibly expected by chance alone (Fields, 2009). SPSS runs a series of iterations that calculates the most accurate -2LL which was 213.87 for the baseline (constant). Table 4.5 shows this information.

The baseline (constant) predicts only on observed values. In this study there were 112 students who completed the program and 56 who withdrew. Having no other information included, the baseline model would predict a student would complete the program because the observed values indicate that more students completed than withdrew. This predictive model would have only predicted 66.7% of the observed values correctly. Table 4.6 shows the prediction results of the baseline (constant) model.

Knowing the fit of the baseline model, the log-likelihood of the model with predictor variables introduced can be meaningful. Simultaneous (forced) entry was used to enter all of the predictor variables into the equation at the same time. The resulting -2LL of the model with the predictor variables was 165.30. Table 4.7 shows this information. Because of the chi-square distribution of the -2LL statistic, the improvement of the model to baseline with respect to predictive power can be determined. The equation for calculating the model chi-square statistic is a Chi Square Difference test as shown below:

Model Chi Square = -2LL Baseline (Constant) - -2LL Model

The resulting degrees of freedom from the Chi Square Difference tests is the difference in degrees of freedom between the two models. The Model Chi-Square is 48.57. Table 4.8 shows the degrees of freedom and the model chi square statistic. It is significant at a 0.05 level. The model is a statistically significant better fit to the observed data than the baseline (constant).

In addition to the log-likelihood assessment, the following tests were conducted on the predictive power of the model: Hosmer and Lemeshow's R^2, Cox and Snell's R^2, and Nagelkerke R^2. The equation for calculating Hosmer and Lemeshow's R^2 is below.

$$\sum_{L}^{2} = \frac{Model\ Chi\ Square}{\text{-2LL (baseline)}}$$

The values for the Hosmer and Lemeshow R^2 can range between 0, predictor variables are not useful at predicting the outcome variable, and 1, predictor variables can always predict the outcome variable. The Hosmer and Lemeshow R^2 for this model is .23.

The Cox and Snell R-Square is another useful tool in measuring predictive power. This statistic adds in the sample size as part of the equation. Like the Hosmer and Lemeshow's model the closer the value is to 1, the higher the predictive power of the model; however the structuring of the equation does not allow for the likelihood to actually reach 1. The Cox and Snell R^2 for this model is .25. The equation for the Cox and Snell R-Square is below.

$$R^2_{CS} = -\{-\frac{2}{n}(LL(\text{mod}el)) - LL(baseline)]$$

The final test of predictive power for the model is the Nagelkerke R^2. This statistic built on the Cox and Snell R^2 to allow for the likelihood to reach 1. The Nagelkerke R^2 value for this model is .35. The equation for the Nagelkerke R^2 is below.

$$R^2_N = \frac{R^2_{CS}}{1 - [\frac{2(LL(baseline))}{n}]}$$

Table 4.8 shows the result of all three R^2 statistics in the model. The R^2 values indicate the variables in the equation have a moderate ability in predicting the outcome variable, completion or withdrawal.

Using the log likelihood and the model chi-square, the model increases the predictive power from the baseline. The baseline predicted the correct outcome for 66.7% of students. The model using the predictor variables increased the accuracy of prediction to 75.0%. Table 4.9 shows this data. While this was an improvement, it must be noted that the original prediction was based on chance alone using the frequencies of the observed outcomes. More students completed the program than withdrew, so the predicted outcome would be all that all the students would complete. This was correct 66.7% because that is how many students in the sample completed the program. The

model using the predictor variables improved the classification accuracy; however, the difference from 66.7% to 75% should not used to determine a significant improvement from the baseline (constant) to the model. The significant improvement was found using the Model Chi-Square statistic. While the model was found to be a statistically significant better fit of the model to the data, the R^2 statistics show the model was only a moderate predictor of the outcome.

Given that the model is a statistically significant better fit to the data, the individual predictor variables also need to be analyzed. To analyze the individual predictor variables the Wald statistic and the Odds Ratio were used. The Wald statistic is much like t-statistic in linear regression. Like the t-statistic, the Wald statistic shows whether a predictor variable is significantly contributing to the prediction of the outcome variable (Fields 2009). The Wald statistic is calculated by taking the estimated regression coefficient and dividing it by the standard error of the coefficient. The equation is below:

$$Wald = \frac{b}{SE_b}$$

In the model there were two variables where the Wald statistic was significant at the .05 level. They were institutional GPA and adjusted gross income. The other variables were not found to be statistically significant at predicting the outcome variable based on the Wald statistic. Table 4.11 shows the estimated regression coefficient (b), standard error, Wald statistic, and the significance value for each of the predictor variables.

The other assessment of individual predictor variables predictive ability was using the odds ratio. This ratio shows the proportional change in odds of an outcome when a unit change in a predictor variable occurs. The formula is below:

$$\Delta odds = \underline{\text{odds after a unit change in the predictor}}$$
$$\text{original odds}$$

If the value of the odds ratio is greater than one, then a unit increase in the predictor

variable will increase the odds of the outcome. If the value is less than one, then a unit

increase in the predictor decreases the odds of the outcome (Fields 2009). To interpret the

odds ratio more accurately, a 95% confidence interval was selected. This interval has a

lower and upper range where the actual value is estimated to be between in 95% of the

cases. When interpreting the odds ratio using the confidence interval, the significant

predictors will have a range greater than one for the lower and upper values. If a lower

value is less than one and the upper value is greater than one, this span across one brings

into question the direction of the relationship in the population (Fields 2009).

The results of the odds ratio analysis were much like the Wald statistic analysis.

In the model the institutional GPA was the one variable whose odds ratio value was

greater than one across the confidence interval. The range was from 2.23 to 15.96. This

means that as the institutional GPA increases, the odds of the outcome variable for

completion increases. The adjusted gross income variable was not less than one

indicating that it is not a poor predictor, but it was also not greater than one, indicating it

is a good predictor. The value was constant at one across the interval. It is the only other

predictor variable that was not below one in the interval. Unlike the result of the Wald

statistic, the adjusted gross income using an odds ratio may not have as strong of a

predictive power. Table 4.11 shows the odds ratio and the confidence interval values for

each of the predictor variables in the model.

After running the logistic regression using all of the variables in the model

together, a second logistic regression was performed using a forward stepwise entry. The

forward stepwise method enters the variables into the model one at a time then uses the log likelihood to determine which variables will contribute most to the predictive power of the model. The forward stepwise model does not include any variable that is not statistically significant at predicting the outcome variable. As was the case in the simultaneous (forced) logistic regression, institutional GPA and adjusted gross income were found to be statistically significant at predicting the outcome based on the Wald statistic. Likewise, the odds ratio confidence interval shows that institutional GPA is greater than one across the interval, indicating that as it increases, so does the odds that the outcome variable will be completion. The adjusted gross income is constant at one across the interval. The forward stepwise method included it in the model because it is statistically significant in predicting the outcome, it may just not have the degree of predictive power like institutional GPA. Table 4.12 provides the variables statistics.

Summary

The data analysis was conducted using descriptive statistics as well as logistic regression.

Descriptive Statistics

Some interesting observations were noted in the differences between groups in the demographic, financial, and academic variables. The difference in marital status was quite notable. Of the students in the completion group, 62.5% were married whereas 30.4% were married in the withdrawal group. The mean family size of the completion group was 2.93 and the withdrawal group was 2.18. In the withdrawal group, there was a higher occurrence of being single and having at least 2 in the household.

Financial differences were also observed between the two groups. The completion groups mean adjusted gross income was $18,384 or higher than the withdrawal group.

The EFC for the completion group was 37.5% higher than the withdrawal group. There was also a distinction on Pell eligibility. In the completion group, 38.4% of the students were Pell eligible where 50% were Pell eligible in the withdrawal group. Based on the descriptive statistics, there is a rather large disparity between the groups on income.

The academic variables had similarities and differences. The transfer GPA between the groups was similar. The main difference was found in the institutional GPA. The mean institutional GPA for the completion group was 3.59 where the institutional GPA for the withdrawal group was 3.05.

Logistic Regression

The logistic regression analysis showed that the model was a statistically significant better predictor of the outcome variable than the baseline model without the predictor variables. Even though the improvement resulted in a 75% classification accuracy of predicted outcome, the R^2 statistics showed that the model was only a moderate predictor at best.

There were two statistically significant predictor variables in the model. Institutional GPA and adjusted gross income were significant using the Wald statistic at the .05 significance level. The odds ratio using a 95% confidence interval showed that institutional GPA variable is a very strong predictor. A second forward stepwise logistic regression was performed to determine if the two variables would continue to be significant when the predictor variables were entered independently. The results of the stepwise method also indicated that institutional GPA and adjusted gross income are significant predictors of the outcome variable.

CHAPTER V

CONCLUSION

Introduction

Adult students are participating in higher education at unprecedented rates. Much

of this can be attributed to demographic shifts, development in labor and technology, and

globalization. Many adult students share certain characteristics. Most adult students are

employed, have families, and are from similar socio-economic statuses. Much like

traditional students, adult students do not graduate at the same rate as they enter higher

education. Adult students face many challenges that can impact their ability to persist in

obtaining their degree. Work demands, family commitments, financial concerns, and

other responsibilities can pose threats to completion.

The retention of adult students has become a major area of concern for

researchers, administrators, and public policy makers. While adult student retention

remains understudied, important studies have been conducted. Unlike retention studies of

traditional student populations which focus heavily on social integration, retention

models for adult students concentrate more on demographic, financial, and academic

variables. Very few studies have focused on retention of adult students in accelerated

degree completion programs. The purpose of this study was to determine whether or not

certain demographic, financial, and academic variables are statistically significant at

predicting adult student withdrawal or completion in an accelerated degree completion program.

A quantitative analysis was completed using descriptive statistics and logistic regression. The findings of the descriptive statistics show that there were some distinctions on certain demographic, financial, and academic variables between the groups. The most notable difference in the demographic variables was marital status. The percentage of married students in the completion group was much higher than that of the withdrawal group. The data shows that while 69.6% of the withdrawal group was single, the household size was still over 2 which leads to the possibility of a higher occurrence of single parent households. The financial variables differ between the groups. The average adjusted gross income for the completion group is $18,384 higher than the withdrawal group. The EFC also is 37.5% higher for the completion group. This calculation determines the eligibility for Pell grant. Only 50% of the students in the withdrawal group are eligible for Pell. With a mean EFC of $5842, the students in the withdrawal group faced an uphill battle with respect to affording higher education. institutional GPA demonstrated a substantial difference between the two groups. The mean GPA for the completion group was 3.59 where the GPA was 3.05 for the withdrawal group.

While the descriptive statistics paint a picture of the data in the population, the logistic regression analysis was needed to establish statistical significance. A simultaneous (forced) entry method was selected where the variables are entered into the equation at the same time. The logistic regression model was found to be statistically significant in predicting withdrawal or completion when compared to the baseline (constant).

Two predictor variables were found to be statistically significant at predicting completion or withdrawal. Institutional GPA and adjusted gross income were significant using the Wald statistic at the .05 significance level. When analyzed through the odds ratio, institutional GPA was found to be a very strong predictor. While significant using the Wald statistic, adjusted gross income does not appear to have the strength of prediction that institutional GPA does when analyzed using the odds ratio.

A second logistic regression was run using a forward stepwise methodology. Unlike the simultaneous (forced) entry method, this method enters the variables individually into the model then uses the log likelihood to only include the variables that contribute most to the predictive power. Like the simultaneous (forced) entry method, the results found that institutional GPA and adjusted gross income were statically significant in predicting completion or withdrawal.

Findings in Context of Previous Research

Previous research in adult student attrition has found that demographic, financial, and academic variables can influence the decision to withdrawal or complete a program of study (Bean and Metzner, 1985; Giancola et al., 2008; Kasworm et. al, 2002; McGivney, 2004; Wlodkowski et al., 2001). In this study several of these variables were examined to see if any were significant predictors of adult student withdrawal or completion in an accelerated degree completion program at a small, private faith based institution.

Previous research on age provided contradictory results. Some studies found a positive association with age and completion (Darkenwald & Anderson, 1979; Light and Strayer, 2000). Others have shown a negative association with age and completion (Horn

and Carroll, 1997; Murtaugh, et al., 1999; Weidman, 1985). Others studies found no association between age and completion (Bean & Metzner, 1985). The mixed result can possibly be explained by differences in populations, institutions, and program type. The current study did not distinguish a noticeable difference between the groups using mean age and standard deviation descriptive statistics. The result of the logistic regression did not find that age was a significant predictor of completion or withdrawal.

The studies on gender have found that adult women are more likely to enroll and graduate from a degree program than males (Andres & Guppy, 1991; Stoner & Esby, 1998; Wlodowski, 2001). The descriptive statistics in this study show that there were an equal number of men and women in the completion group; however, there were a higher percentage of men who withdrew than women. The logistic regression did not find that gender was a significant predictor of completion or withdraw. With respect to gender, the results of this study are not consistent with previous research.

Previous research on ethnicity has shown that for adult students there is a weak association, if at all, with completion (Anderson & Darkenwald, 1979; Tweedell, 2000). In the current study, the descriptive statistics do not provide evidence of a noticeable difference between the groups with respect to ethnicity. The logistic regression analysis show that ethnicity is not a significant predictor of completion or withdrawal. This is consistent with previous research on ethnicity and retention.

The study of marital status on adult student retention has resulted in inconsistent findings. Some studies have shown that marital status has little or no effect on retention (Jacobs & King, 2002; Hanniford & Sagaria, 1994). Another study found that being married decreases the likelihood of completion (Haggstrom et al., 1986). The descriptive

statistics in the current study show that 37.5% of the completion group were married while 69.5% of the withdrawal group were married. This is a noticeable difference; however descriptive statistics alone cannot determine significant predictive capability. To further analyze marital status, the correlation matrix was reviewed again to verify that marital status was not extremely correlated with the other predictor variables. This was done to rule out multicollinearity. While no extreme correlation exists, marital status and adjusted gross income do have a moderate correlation. Although, the logistic regression model analyzes the variables individually, it is done in the context of the collective whole. There is a possible overlap that could exist which would have allowed for the finding of adjusted gross income as statistically significant while the marital status would not contain statistically significant predictive power. The previous research on marital status has yielded mixed results. The possible link between adjusted gross income, marital status, and retention should be continued to be examined.

Studies have found that having children decreases the likelihood of adult student completion (Kasworm, 2003; Haggstrom et al., 1986; Staman, 1979; Berkove, 1976; Morgan & Rindfuss, 1999). The findings in the current study are not consistent with previous research. The results of the descriptive statistics show that students in the completion group had more students who had children than did the withdrawal group; however, nearly two-thirds of the completion group were also married. Nearly half of the students in the withdrawal group have children and nearly three-quarters of them are single. Simply looking at having children outside of marital status may not provide important information describing the population. The results of the logistic regression show that having children is not a significant predictor of completion or withdrawal.

While having children may not be a significant predictor, it is useful to know that a large percentage of single students also have children.

The study of first generation college status on the retention of adult students is wanting. Most of the studies of generation status have taken place with traditional college students; however there is one notable study on retention that analyzed adult student generation status (Giancola et al., 2008). The finding showed that there is no distinguishable difference between the adult students with parents who earned degrees and those who did not. The descriptive statistics in the current study do not show a distinction between those students who were first generation college students and those who were not. The logistic regression analysis also found that generation college status is not a significant predictor of withdrawal or completion.

Adult students often cite financial concerns as a primary reason for withdrawal. The literature consistently shows financial circumstances have a considerable impact on the decision to complete or withdrawal (Kasworm, 2002; Kasworm, 2003; McGivney, 1996; Spanard, 1990). This study analyzed three financial variables: adjusted gross income, EFC, and Pell eligibility. The descriptive statistics show a substantial difference between the mean adjusted gross income of the completion group and the mean adjusted gross income of the withdrawal group. The income of the completion group was much higher. EFC was also considerably different. Again, the completion group had a higher EFC. In the logistic regression model, EFC was removed because of a high correlation with adjusted gross income and Pell eligibility. This is because EFC is calculated using these variables. The logistic regression analysis found that adjusted gross income was a significant predictor of completion or withdrawal. This is consistent with the previous

research that has found that financial circumstances can be a primary factor influencing completion or withdrawal.

The previous research on the influence of academic performance on withdrawal or completion has consistently found that adult students who exhibit better academic performance are more likely to complete (Bean & Metzner, 1985; Pascarella 1989; Weidman, 1985; Wlodowski et al., 2001). In the current study, institutional GPA and transfer GPA were analyzed. The descriptive statistics show a considerable difference between the groups in institutional GPA. The completion group had a much higher institutional GPA. The difference in transfer GPA was relatively small. The analysis of the logistic regression found that institutional GPA was a significant predictor of completion or withdrawal. This is consistent with previous research on the influence academic performance can have on retention.

The logistic regression models found that institutional GPA and adjusted gross income are significant predictors of completion or withdrawal in the population studied. In both instances, these findings are consistent with the previous retention research where financial and academic variables were studied (Bean & Metzner, 1985; Kasworm, 2002; Kasworm, 2003; McGivney, 1996; Pascarella 1989; Spanard, 1990; Weidman, 1985; Wlodowski et al., 2001).

Implications for Practice

Financial Need

While the current study did not measure the impact financial aid has on the retention of adult students in an accelerated degree program, the fact that the adjusted

gross income was found to be a significant predictor leads to the necessity to help adults find the resources needed to persist in a program.

Institutional Response

Several interventions have been introduced at many institutions. Many adult programs have focused on developing their financial aid offices to counsel adult students and provide knowledge on financial aid options such as work-study, loans, and other resources that might be available. Others have created workshops to assist adult students plan for college expenses. Institutional scholarships or outside scholarships that are aimed toward the adult student with need are another way to promote persistence (Kasworm et al., 2002). Partnering with companies that provide tuition remission or assistance programs may also help with income based challenges.

Federal/State Policy Response

The Pell grant system needs to be redesigned so that students who demonstrate need but are not Pell eligible are able to receive grant based aid. Based on the College Board's Annual Survey of Colleges for 2008-2009, the weighted enrollment average published tuition, fees, room and board at a 4-year public institution was $14,433 and $34,132 at a 4-year private institution. The current Pell grant maximum is $5,350. The current maximum Pell grant is 37% of the cost of a 4-year public institution and only 16% of the cost of a 4-year private institution. Given the fact that Pell grant eligible students have low income levels, finding the resources to fund the gap between grant aid and the cost can be very difficult. This problem is compounded for the lower income earners who are not eligible for Pell. The federal government should increase the maximum Pell grant to cover more of the weighted average cost and should also redefine

the federal methodology to include a higher EFC Pell limit. In this study, the average EFC for students who withdrew was $5,842. The maximum EFC for Pell eligibility for the 2009-2010 award year is $4,617. The amount of the corresponding Pell grant is $488. It is clearly evident the current Pell grant system does not cover enough of educational expenses nor does it include many lower income earners who demonstrate need.

Many states offer need based grant aid. For instance, Oklahoma funds the Oklahoma Tuition Aid Grant (OTAG) program. The amount of the grant is up to $1000 for public schools and $1300 for private schools per aid year. Like the Pell grant, eligibility is determined by EFC. The maximum EFC to be eligible for OTAG is $1,700. This is much lower than the Pell maximum EFC. Consequently, only the neediest students are eligible for OTAG. It is helpful that a state grant program has been implemented to help lower income students afford to pursue higher education, but like Pell it does not incorporate many of students who demonstrate need.

States have also funded programs designed for traditional high school students to access and afford higher education. Oklahoma's Promise (OHLAP) and Georgia's Hope Scholarship are two examples. These programs are not available for adult students as requirements are based on being in the program during secondary school enrollment. Given the transition to a knowledge- based economy requiring certain skill sets, states would benefit from an economic development and workforce development standpoint, if more money was invested in funding grant programs for more adult students.

Academic Performance

The current study found that institutional GPA is a significant predictor of completion or withdrawal for adult students in this sample. Interventions can be established to help adult students work through the academic struggles they face.

Institutional Response

Academic support services may be more feasible and cost effective to aid in retention than increased spending per student on financial aid. Institutions can implement interventions such as "integrating short seminars, a first-year experience semester-long course, orientation programs, special courses to improve cognitive and study strategies, as well as courses for providing remediation in reading, writing, and mathematics" (Kasworm, 2002, p. 56). Other support services could be introduced that would be outside of the curriculum such as writing labs, tutoring centers, technology lab, etc. Institutions should also look to accommodate adult students in their TRIO programs. This can be problematic for institutions with satellite campuses, but all students need access to these vital federal programs.

Federal/State Response

The federal and state governments should look to strengthen existing programs that help fund academic support to students. There should also be a focus on offering to support to adult students specifically. Grants to institutions and non-profit organizations to create adult learning centers would be one possible initiative to accomplish this. The federal TRIO programs are excellent examples of public policy that has focused on increasing the performance of students by funding support services.

Implications for Theory & Future Study

While the model in the current study was significantly better at predicting the outcome variable than the baseline model and two predictor variables were found to be significant, the model was only able to predict correctly 75.0% of the observed values. This is further substantiated by the R^2 values capturing the predictive power of the model. Knowing that, it is still a valid model. Considering all the possible variables that could contribute to withdrawal or completion, this model proved to be able to predict three-fourths of the outcomes correctly.

Most of the previous research on adult students has not taken place in accelerated degree completion programs; however, the significant predictors in this study are consistent with previous research on adult students cited in Chapter II. Financial considerations are a key contributing factor in the decision to withdrawal from a program. Likewise, students with a higher GPA are also more likely to complete.

There is an immense need for future research on retention of adult students in accelerated degree completion programs. As the popularity of these programs continues to rise, so will the need for understanding. While this study was effective for its purpose, there are areas that may prove helpful in the study of adult student retention in accelerated degree completion programs. The impact that financial aid may have on adult student retention in these programs remains understudied. How does financial aid figure into this study or other models? How does the amount of the financial aid awards matter? Does grant aid impact retention? If so, to what extent? Do student loans impact retention? If so, to what extent. What happens to student loan borrowers who withdrawal? If more

public institutions implemented accelerated programs, would more students complete those programs because of the cost differential?

Another area that was not analyzed in this study is student motivation and opinion. The psychology of the student would be a vital key in understanding adult student retention. What impacts the attitude toward completion or withdrawal? Is it different between people? Is it impacted by institutional factors, personal factors, or academic factors?

Summary

The study of retention of adult students is vital to help institutions, government, and society at large find ways to assist or promote persistence in higher education. Research has shown that demographic, financial, academic, and other personal factors can influence the decision to withdrawal or complete. This study is consistent with previous research in its findings that successful academic performance and financial stability result in increased completion rates. Institutions can implement creative interventions to help provide academic support and offset financial burden. Public policy makers can also respond by funding grant programs at levels that can make a difference and by expanding the number students who are eligible for these funds. Much more research is needed to gain a deeper knowledge of the factors that contribute to adult student withdrawal or completion. The role of financial aid awards remains understudied with the adult population. Analyzing student attitude and opinions would also result in a better understanding. Researchers will need to continue building on the knowledge of adult student retention so that responses will be strategic and effective. As the United

States continues to develop as an information society, the ability to successfully educate

the adult population will be an important part in defining its success

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APPENDICES

Appendix A-Tables

Table 4.1

Descriptive statistical comparison between groups on demographic predictor variables

	All students	Students who completed	Students who withdrew
Age			
Mean	38.93 yrs	39.72 yrs	37.34 yrs
SD	9.25	9.33	8.98
Gender			
Male	48.2%	50%	44.6%
Female	51.8%	50%	55.4%
Ethnicity			
Caucasian	67.3%	69.6%	62.5%
Minority	19.6%	20.5%	17.9%
Not reported	13.1%	9.8%	19.6%
Marital			
Single	48.2%	37.5%	69.6%
Married	51.8%	62.5%	30.4%
Children			
Have children	57.7%	62.5%	48.2%
Do not have children	42.3%	37.5%	51.8%
Family Size			
Mean	2.68	2.93	2.18

SD	9.25	1.46	1.39
Generation Status			
First generation	47.0%	47.3%	46.4%
Not first generation	53.0%	52.7%	53.6%

Table 4.2

Descriptive statistical comparison between groups on financial predictor variables

Variable	All Students	Students who completed	Students who withdrew
Adjusted Gross Income	$40,051	$46,179	$27,795
EFC	$8180	$9350	$5842
Pell Eligible			
Yes	42.3%	38.4%	50%
No	57.7%	61.6%	50%

Table 4.3

Descriptive statistical comparison between groups on academic predictor variables

	All Students	Students who completed	Students who withdrew
Institutional GPA			
Mean	3.41	3.59	3.05
SD	.64	.31	.93
n	168	112	56
Transfer GPA			
Mean	2.74	2.7929	2.64
SD	.71	.67	.76
n	168	112	56

Table 4.4

Correlation Matrix of Continuous Varables

	Marital	Age	Gender	Minority	Transfer GPA	Inst. GPA	Children	Generation Status	AGI	Family Size	EFC	Pell Eligibility
Marital												
Correlation	1	-.19	.24	.014	-.067	.20	.236	-.15	.52	-.54	-.28	.21
Sig.		.00	.001	.43	.20	.00	.00	.03	.00	.00	.00	.00
Age												
Correlation	-.18	1	.07	.02	.07	.19	.02	.22	.36	.09	.20	-.17
Sig	.00		.17	.41	.18	.00	.38	.002	.00	.12	.01	.01
Gender												
Correlation	.240	.07	1	.07	.08	.03	.07	.05	-.16	-.11	-.09	.13
Sig.	.00	.17		.19	.16	.36	.20	.26	.02	.09	.13	.05
Minority												
Correlation	.01	.02	.07	1	.04	-.05	-.04	.14	-.06	-.07	-.06	.05
Sig.	.00	.41	.19		.28	.28	.30	.04	.26	.20	.24	.24
T GPA												
Correlation	-.07	.07	.08	.04	1	.37	-.15	.12	.05	-.06	.12	-.12
Sig.	.20	.18	.16	.28		.00	.03	.06	.26	.22	.05	.06
I GPA												
Correlation	-.20	.19	.03	-.05	.37	1	.01	.14	.18	.07	.08	-.13
Sig.	.00	.00	.36	.28	.00		.44	.04	.01	.19	.16	.04
Children												
Correlation	-.24	.02	.067	-.042	-.15	.01	1	.03	.15	.56	-.39	.34
Sig.	.00	.38	.20	.30	.03	.44		.33	.03	.00	.00	.00
Generation Status												
Correlation	-.12	.22	.05	.14	.12	.14	.03	1	.21	.02	.13	-.13
Sig.	.00	.00	.26	.04	.06	.04	.33		.00	.40	.05	.05
AGI												
Correlation	.52	.36	-.16	-.05	.05	.18	.15	.21	1	.31	.73	-.56
Sig.	.00	.00	.02	.26	.26	.01	.03	.00		.00	.00	.00

	Marital	Age	Gender	Minority	Transfer GPA	Inst. GPA	Children	Generation Status	AGI	Family Size	EFC	Pell Eligibility
Family Size	-.54	.09	-.11	-.07	-.06	.07	.56	.02	.31	1	-.19	.13
Correlation Sig.	.00	.12	.09	.20	.22	.19	.00	.40	.00		.01	.05
EFC		.						.				
Correlation	-.28	20	.09	-.06	.12	.08	-.39	13	.73	-.19	1	-.69
Sig.	.00	.00	.13	.24	.05	.16	.00	.05	.00	.01		.00
Pell Eligibility												
Correlation	.211	-.17	.13	.05	-.12	-.13	.34	-.13	-.56	.13	-.69	1
Sig.	.00	.01	.05	.24	.06	.04	.04	.05	.00	.05	.00	

Pearson's Correlation (1-Tailed)

Table 4.5

-2LL Calculation Output for the Baseline (Constant)

Iteration	-2 Log likelihood	Coefficients
		Constant
Step 1 0	213.90	.67
2	213.87	.69
3	213.87	.69

Table 4.6

Classification Table of Predicted Output using the Baseline (Constant)

	Predicted		
	Completion Status		Percentage Correct
Observed	Completed	Withdrew	
Step 0 Completion Status			
Withdrew	0	56	.0
Completed	0	112	100
Overall Percentage			66.7

Table 4.7

Comparison of -2LL between Baseline (Constant) and Model

	-2 Log Likelihood
Constant	213.87
Model	165.30

Table 4.8

Model Chi Square Output

	Chi-square	Df	Significance
Model	48.57	12	0.00

Table 4.9

Model R^2 statistics

Hosmer and Lemeshow's R^2	Cox & Snell R^2	Nagelkerke R^2
.23	.25	.35

Table 4.10

Classification Table of Predicted Output using the Model

Observed Outcome	Predicted		Percentage Correct
	Completion Status		
	Completed	Withdrew	
Step 0 Completion Status			
Withdrew	27	29	48.2
Completed	13	99	88.4
Overall Percentage			75.0

Table 4.11

Direct Entry Predictor Variable Statistics

Independent Variable	B	S.E	Wald	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Age	-0.14	.02	.36	.55	.99	.94	1.03
Gender	-.063	.41	.023	.88	.94	.42	2.11
Ethnicity	-.076	.06	1.42	.23	.92	.82	1.05
Marital	.371	.56	.44	.51	1.45	.48	4.35
Children	.070	.64	.012	.91	1.07	.31	3.74
Family Size	.142	.24	.36	.55	1.15	.72	1.84
Generation Status	.389	.41	.90	.34	1.478	.66	3.30
Adjusted Gross Income	.000	0.00	3.87	.05	1.00	1.00	1.00
Pell Eligibility	-.440	.60	.54	.46	.64	.19	1.84
Institutional GPA	1.786	.50	12.63	.000	5.96	2.23	15.96
Transfer GPA	-.089	.32	.079	.78	.92	.49	1.70
Constant	-6.63	1.88	12.44	.000	.00		

Table 4.12

Forward Stepwise Logistic Regression Predictor Variable Statistics

Variable	B	S.E	Wald	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Step 1							
Institutional GPA	1.90	.45	17.89	0.00	6.71	2.78	16.21
Constant	-5.80	1.56	13.86	0.00	.03		
Step 2							
Institutional GPA	1.69	.44	14.70	0.00	5.41	2.82	12.82
Adjusted Gross Income	0.00	0.00	9.43	0.02	1.00	1.00	1.00
Constant	-5.93	1.53	15.01	0.00	.00		

Appendix B-Non Human Subject Research

The research in this thesis is compliant with Oklahoma State University's "Handbook for the Protection of Human Subjects in Research" established by the Institutional Review Board. The handbook states:

> A human subject is defined as a living individual about whom an investigator conducting research obtains:
>
> • data through intervention or interaction with the individual; or
>
> • identifiable private information, which includes information about behavior that occurs in a context in which an individual can reasonably expect will not be made public (a medical record, for example); private information must be individually identifiable in order for obtaining the information to constitute research with human subjects (45CFR 46.102(f)).

The source of this research was de-identified archived data from the institution. Because no identifiable information was collected on any students, this research does not fall into the human subject category that would require Institutional Review Board approval.

VITA

Matthew D. McCoin

Candidate for the Degree of

Master of Science or Arts

Thesis: STAYING IN THE FAST LANE: PREDICTING ADULT STUDENT RETENTION IN AN ACCELERATED DEGREE COMPLETION PROGRAM

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Title of Study: STAYING IN THE FAST LANE: PREDICTING ADULT STUDENT
RETENTION IN AN ACCELERATED DEGREE COMPLETION
PROGRAM

Pages in Study: 89   Candidate for the Degree of Master of Science/Arts

Major Field: Educational Leadership Studies

Scope and Method of Study:

The study of adult student retention has primarily focused on demographic, financial, and

academic, and psychological variables that may influence the decision to withdrawal or

complete. The present research was conducted to help gain understanding of the

demographic, academic, and financial factors that may contribute to withdrawal or

completion from an accelerated degree completion program at a small Catholic private

institution. This understanding can help institutions, organization, and public policy

makers implement strategic initiatives to help reduce adult student attrition.

Findings and Conclusions:

Descriptive statistics and Logistic regression (LR) were employed in this study.

The descriptive statistics findings showed a distinction between the completion group and

withdrawal group with respect to marital status, adjusted gross income, Estimated

Financial Contribution (EFC), and institutional GPA. The findings of the logistic

regression showed that the model was significant at predicting completion or withdrawal

when compared to the baseline (constant). The logistic regression analysis found that

institutional GPA and adjusted gross income were significant predictors of withdrawal or

completion in the sample.

ADVISER'S APPROVAL: Dr. Jesse Mendez