FACTORS AFFECTING STUDENT PERSISTENCE

AT A SELECTED COMMUNITY COLLEGE IN

THE STANN CREEK DISTRICT, BELIZE, CENTRAL

AMERICA

By

KAREN CHARLETTE MARTINEZ

Bachelor of Science in Secondary Education
University of Belize
Belize City, Belize
1995

Master of Education in Educational Leadership
University of North Florida
Jacksonville, Florida
2003

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
December, 2011

FACTORS AFFECTING STUDENT PERSISTENCE

AT A SELECTED COMMUNITY COLLEGE IN

THE STANN CREEK DISTRICT, BELIZE, CENTRAL

AMERICA

Dissertation Approved:

Dr. Jesse Mendez

—————————————————————————

Dissertation Adviser

Dr. Ed Harris

—————————————————————————

Dr. Steve Wanger

—————————————————————————

Dr. Marumba Mwavita

—————————————————————————

Outside Committee Member

Dr. Sheryl A. Tucker

—————————————————————————

Dean of the Graduate College

DEDICATION

To my husband,

Adrian Martinez,

for his unwavering love, sacrifice, support, and encouragement.

ACKNOWLEDGEMENT

thank you. Gwen and Sheldon, thank you for all the encouraging IMs you sent me. Thanks also to my many other friends and church family who kept me in their prayers and wished me the best.

I acknowledge my family members for their unconditional love, support, and encouragement: to my parents, though they are no longer here, they had instilled in me the value of education and the drive for excellence; my brother, Pastor Wayne, for believing in me and hanging in there with me; to my cousin Itu Jean, thank you for being you - always helpful and making my load lighter; to my two girls, Carla and Esieni, I do this for you, I believe I need to embody the character I want you to model. Finally, I dedicate this dissertation to my husband, Adrian Martinez – you have been patient, understanding, and supportive, and because of you I am able to complete my dissertation – thank you.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Students encounter many issues that influence their persistence in college; some they come with, others they encounter while enrolled. Factors influencing students' success in college have taken on much interest in recent years. Students' persistence studies have been increasing; however, there is much to be learned about factors influencing college persistence in Belizean junior colleges.

No research has been done in the area of student persistence in Belize. Since information in this area is limited, the focus of this research is to investigate whether pre-matriculation and college experience affect student persistence. The purpose of this quantitative, *ex post facto* research is to find out which factors; student characteristics, precollege factors, financial aid, and college experience, affect student persistence at Stann Creek Ecumenical Junior College. This design was employed to answer the four research questions. The target population consisted of first time, full-time, degree seeking freshmen at Ecumenical Junior College for the school year 2010 to 2011. After obtaining IRB approval, pre-existing data were collected for a total of 148 first year students. Data was analyzed using SPSS version 19.

Descriptive (frequencies, means, standard deviations, cross-tabulations) and inferential statistics (linear regression analyses) were utilized to answer the research questions. The three factors found to be predictor of persistence were age, high school GPA, and first semester college GPA; first semester college GPA being the best predictor.

Implications derived from study include the need for institutional practitioners and policy makers to focus on strategies to improve educational opportunities to the diverse groups of students who attend community colleges in Belize.

CHAPTER I

INTRODUCTION

With the rapid onset of globalization, Belize, a developing country, with a

population of 312,971 (Statistical Institute of Belize, 2010), needs to seek to maintain

domestic prosperity and international competitiveness. Belize is an independent, English-

speaking nation in the heart of Central America (a Spanish-speaking region) that still

acknowledges the British Monarch as Head of State (Thomson, 2004). The British and

Spanish disputed the region in the 17th and 18th centuries, but it formally became a

British colony in 1862 (Shoman, 2000). Belize's historical experiences of conquest,

divide, rule, and manipulation have earned it its unique identity; a mixture of people of

diverse origins (Leslie, 2002). The 2010 National Census revealed that the Belizean

population was made up of 50% Mestizo, 21% Creole, 10% Maya, 4.6% Garifuna, and

14.4% other ethnic groups (Statistical Institute of Belize, 2010). The unique history and

identity that Belize inherited have had far reaching implications on the education system.

The ineffectiveness of the system of "colonial" education was noted far back into the

18th Century and reform efforts were attempted as far back as 1935 (Pastor, 1995;

Bennett, 2008). The 21st Century inherited a "nationalist" education system as a result of

the Education Ordinance of 1962, but yet, reform attempts are still being made in hope of

improving the outputs of Belizean education. Bennett (2008) stated that Belize's

education system still operates in the vestiges of colonial education.

Belize has an essentially private-enterprise economy where tourism is the number one foreign exchange earner, followed by agriculture. Approximately 72% of the labor force is employed in the services sector (World Factbook, 2007). Belize imports more goods than it exports: $616 million in import and $385 million in export in 2009. Major goods exported include sugar, bananas, citrus, clothing, fish products, molasses, wood, and crude oil. Imports include machinery and transport equipment and manufactured goods: fuels, chemicals, pharmaceuticals: food, beverages, and tobacco. As indicated by the Task Force on Higher Education and Society, higher education has been forced to confront expansion, differentiation, and knowledge revolution (World Bank, 2000). Expansion is notable in the increase in the number of student enrollment whereby institutions of higher education need to adjust to accommodate the changes; differentiation is noted in new types of institutions being born and new providers entering the education sector; and knowledge revolution is noted in structural changes to the economy. Economies are becoming less agricultural and industrial and moving more towards technology and information. With global wealth investing less in factories, land, tools, and machinery, the knowledge, skills, and resourcefulness of people are increasingly critical to the world economy (World Bank, 2000).

Investment in higher education is beneficial to the individual, the institution, and society at large (Leppel, 2002). Higher educational attainment has also been found to reduce inequalities in human conditions (Park, 1996). For success in the recently created knowledge-based economy, there is need for a well-educated populace with relevant

education and a highly qualified workforce (Snyder, Acker-Hocevar, & Snyder, 2000;

Seidman, 2005a). Recent events in Belize, such as the need for accreditation and the

signing of international agreements (for example, the CARICOM Single Market

Economy, CSME), have led to increased interest in the performance of students at post-

secondary institutions. CSME is an integrated development strategy envisioned at the

tenth meeting of the conference of heads of government of the Caribbean Community

(CARICOM). It is intended to benefit the people of the Region by providing more and

better opportunities to produce and sell goods and services and to attract investment. Its

key elements include: free movement of goods and services, right of establishment, a

common external tariff, free circulation, free movement of capital, a common trade

policy, and free movement of labor (Caribbean Community Secretariat, 2009).

A close look at education statistics from the Ministry of Education's (MOE)

Education Management System (EMIS) in Belize is showing that not much attention has

been given to tertiary affairs, especially in the area of college student access and success.

Research on postsecondary access is nonexistent. Presently, the Policy and Planning Unit

has only collected information on retention and dropout rates for primary and secondary

schools (Education at a Glance, 2008-2009; Education Statistical Digest, 2006-2007;

Abstract of Statistics, 2008-2009). The Policy and Planning Unit is a branch of the MOE

that is charged with the responsibility of collecting, compiling, and disseminating

statistics on the education system in Belize. Collecting data on postsecondary persistence,

retention, and attrition is a tedious task. The only available information disseminated by

the Policy and Planning Unit on postsecondary institutions is college enrollment. From a total of 3,391 students enrolled at the national level in 2008, 314 were from the Stann Creek Ecumenical Junior College (Appendix A). According to the Consortium for Belize Educational Cooperation Conference (COBEC) 4% of Belizean students seek tertiary enrollment at postsecondary institutions (P. Faber, personal communication, February 04, 2009). Belizean educators are concerned over the low enrollment and graduation rate of students from tertiary institutions, but no empirical study has been conducted in Belize to inform the literature in this area.

Student attrition/dropout has become one of the most significant issues facing higher education. Belize is no exception. According to Johnson (2007) countless hours and a significant amount of money have been spent on trying to determine why some students leave and others persist in college. Many tertiary institutions have recently stepped up on their recruitment drive in hope of increasing enrollment. According to Tinto (1993), the recruitment campaigns cannot produce the gains in enrollment necessary to counter the high rates of attrition. Johnson (2007) also noted that the cost of recruitment is much higher than the cost of retaining already enrolled students. Therefore, it is more economically beneficial to retain students. When students persist, an institution gains financial security and fulfills its mission which in turn has positive impacts on the reputation and credibility of the institution (Bean, 2005).

The low enrollment and, by extension, low persistence of students in postsecondary institutions, must be addressed most urgently if Belize is to embrace the

challenges of globalization. Education is more valued as an indicator of knowledge in

developed countries, while it is more valued as a credential in developing countries

(Babones, 2000). Despite the bifurcation in the relationship between globalization and the

importance of education, Babones, in a comparative analysis of returns to education in 80

countries, found that globalization everywhere increases the economic importance of the

knowledge embodied in education at the expense of valuing education merely for the

credential. The world economy is changing as knowledge supplants physical capital as

the source of present wealth (World Bank, 2000). According to the 2000 World Bank

Task Force report, higher education becomes more important as knowledge does; the

quality of education generated within higher education, and its availability to the wider

economy, is becoming increasingly critical to national competiveness. Since there is a

need to improve human capital to combat intellectual and economic marginalization,

there is a call for the strengthening of postsecondary education in Belize in a manner that

promotes the acquisition of timely knowledge.

     A notable change in the structural shift of Belize's economy has been the

replacement of agriculture by tourism as the major foreign exchange earner (Richardson,

2007). The contribution of agriculture and tourism to the gross domestic product in 2007

was 21.3% and 28.2% respectively (World Travel and Tourism 2007; World Fact Book,

2007). The changes in economic focus have affected the workforce and, by extension, the

responsibilities of postsecondary institutions. Today, most jobs require some

postsecondary education and training (Hagedorn, 2005). Davies (2001) stated that higher

education has an enormous responsibility to a society's well-being. Hunt (2007) added

that in addition to strengthening the reputation of an institution, students' completion of a

program plays a vital role in strengthening a society as much as the individual. It must

then be understood that the issues surrounding retention are dynamic and many academic

and non-academic factors affect both college persistence and retention (ACT, 2004).

The Stann Creek Ecumenical Junior College (EJC) is located in the Stann Creek

District. This district in Belize is a region with distinguishing features managed by a local

government. There are six districts in Belize: Corozal and Orange Walk in the north,

Toledo and Stann Creek in the south, Cayo in the west and Belize as the central district.

EJC, over the past 24 years, has evolved from a Sixth form focused only on business

studies to a junior college offering seven associate degrees (School Catalogue, 2009).

Sixth forms in Belize were extensions of high schools solely focused on preparing

students for advance level examinations and the world of work. Junior colleges were

created to provide the first two-years of university studies that would help to facilitate the

transfer of credits to universities abroad. An open admissions policy at EJC, allowing

students to enroll with a broad range of preparedness, contributed to a retention rate of

around 50% (School Records, 2007-2008). Attracting students to EJC has never been a

problem. It has been the only existing junior college in the district until 2007 when the

Independence Junior College (IJC) was developed. IJC operates as a part-time institution,

an extension of the high school, where the students attend classes in the evening. It offers

a small range of programs and is still going through many internal changes. EJC's

strategic position in southern Belize and its track records of academic excellence declare

its preeminence. While there has been a gradual increase in enrollment since 2003

(Appendix A), retaining students seems more problematic. According to Hauptman

(2007) less than half of the students in the U.S. who begin a baccalaureate program of

study complete their degree. He added that the completion rates for associate and

bachelor's degrees among students who initially enroll in community college are much

lower. From a total of 149 students enrolled at EJC during the 2007-2008 school year,

around 83 made it into second year, and a total of 65 graduated within the traditional two

year cycle. One hundred thirty one students enrolled for the 2008-2009 school year, 93 of

these persisted into second year (School Records, 2008-2009).

There is, presently, no alignment between the exit requirement of high schools

and the entrance requirements of colleges in Belize, neither is there a locally created

national secondary school curriculum that would reflect some sort of articulation

agreement with the junior colleges. What are used as standard for high school

accomplishments (and by extension, college readiness), are students' High School Grade

Point Average (GPA), the Caribbean Examination Council (CXC) examinations, a

regional examinations; and the Association of Tertiary Level Institutions in Belize

(ATLIB) placement examination. Students are made to sit the examinations, in various

subjects, at the end of their last semester in high school. Students' academic preparedness

for college is determined by their performance on CXC, ATLIB, and their high school

GPA. Junior colleges in Belize, on the other hand, do not have set or standardized criteria

by which they evaluate the readiness or deficiency of the students that matriculate from the high schools. A divide is created when high schools and junior colleges find themselves blaming each other for the high attrition or lack of persistence of students in colleges, especially in their first year of schooling (Conley, 2005a).

Statement of Problem

There have been major shifts in the sources of economic growth over the years; agricultural, industrial, and now, knowledge-based. According to Snyder, Acker-Hocevar, & Snyder (2000), "the great challenge for educators is to cease tinkering with work on the systems of schooling we have known and to instead connect school development in more fundamental ways with current global transformation." (p. 4). Knowledge, therefore, is the key to development. A lack of knowledge is a major constraint to economic and social progress (Varghese, 2008). According to Varghese, the higher education sector plays an important role in facilitating the production and distribution of knowledge. Given the importance of knowledge in development to encourage growth, and acknowledging the dearth of enrollment of students in postsecondary institutions in Belize, there is a call upon higher education to seek ways to attract and retain students.

National education statistics shows a 4% student enrollment for postsecondary education in Belize, but no national data are available on retention of these students. The National Education Summit of 2004, the Minister of Education Action Plan 2005-2010,

the Belize National Tertiary Education Conference of 2006, and 2009 conference of the

Consortium for Belize Educational Cooperation identified major challenges faced by

Belizean public education system. However, although none of these national events are

directly conveying the urgent need for retention of students in postsecondary institutions,

more focus on issues affecting college completion is vital if Belize is to continue with its

economic development.

Research has shown that almost 50% of students entering two-year colleges, and

more than 25% of those entering four-year institutions, in the United States leave before

or at the end of their first year (Tinto, 1993; Barth, Haycock, Huang, and Richardson,

2001). These findings have broad societal implications. Research has also shown that first

year students with high precollege academic achievements persist through to the end of

their first year in college (Barefoot, 2000; Ishitani, 2006). Certain student attributes, such

as gender, age, and ethnicity, have also been noted to influence persistence along with

parents' level of education and financial aid. According to Tinto (1975) individuals enter

postsecondary institutions with a variety of attributes, pre-college experiences, and family

backgrounds. Each of these, according to him, has direct or indirect impact on college

performance. They also influence the development of the educational expectation and

commitments that the individual brings with him/her into the college environment.

Some first year students, with high precollege academic achievements, may

struggle to persist, or may drop out, within the first year of college. Student persistence is

highly complex and multi-dimensional (Lewallen, 1993). Other factors may influence

students' performance and persistence. Thus, a conflict exists. Some students with ideal characteristics for college including high precollege academic achievement struggle to persist, or they drop out, within the first year of college. For example, of the 65 students who entered EJC in 2009 with more than six CXC passes and tuition grants from the government, 32 lost their scholarship by the end of semester one, and nine dropped out by the end of the school year (School Records, 2009-2010). Many factors affect students' persistence; these include pre-college factors (Cabrera, Nora, Castaneda, 1993; Astin, 1991; Chen, 2007), institutional factors (Tinto, 1993; Pascarella & Terenzini, 1991), and environmental factors (Bean & Metzner, 1985; Wylie, 2004).

Chen (2008) proposed a theoretical framework explaining the college persistence process. Her heterogeneous model incorporates factors from the five dominant persistence theories; psychological, sociological, organizational, interactional, and economic. This model adds economic concepts that may aid in better understanding the differential effects of aid on student outcomes. Chen's model identified nine clusters of variables from the dominant perspectives on college persistence: the outcome variable, student background characteristics, educational aspiration, precollege preparation, financial factors, college experience, institutional attributes, time in college, and interaction effects. The focus of this study was determine the relationship between selected student background characteristics, precollege preparation, financial factors, and college experience at EJC and to determine whether these characteristics can be used to predict the persistence of first year students in college.

Purpose of Study

The purpose of this predictive non-experimental research study was to use pre-existing data from the student database at EJC to examine whether there were significant relationships between students' background characteristics, precollege preparation, financial factors, and college experience with their ability to persist within their first year of college attendance. The background characteristics were gender, age, ethnicity, and parental education level; the precollege preparations included high school GPA, ATLIB score, and number of CXC exam passes; financial factors involved financial aid; and the college experience involves college GPA. According to Johnson (2001), "non-experimental quantitative research is an important area of research for educators because there are so many important but non-manipulable independent variables needing further study in the field of education." (p. 1).

The words *persistence* and *retention* are often used interchangeably. Hagedorn (2005) stated that the National Center for Education Statistics differentiates these two terms by using retention as an institutional measure and persistence as a student measure. Therefore, institutions retain and students persist. This study focuses on student persistence at a Belizean community college.

Rationale of Study

Many important considerations motivated this study. First, no prior studies examined the factors affecting students' persistence at a community college in Belize.

The following study provides a baseline of information for understanding the issue surrounding persistence in postsecondary institutions in Belize. Second, recruiting and retaining students require a critical understanding of pertinent factors. Third, college administrators need to have a grounded understanding of the factors affecting and contributing to students' persistence and how these factors may influence dropout. This study provides them with information to aid in building of programs and intervention strategies geared at increasing students' persistence and retention in higher education in Belize. Fourth, once more students are provided with the opportunity to enter and complete college, they will be more likely to fulfill their educational goals and contribute positively to the Belizean society.

Procedures

Selected pre-collegiate (independent/predictor variables) data for freshmen students at EJC along with college GPA were analyzed to examine their influence on college persistence. Higher education researchers have long been concerned with the development and application of methods to assess the effect of college on students, especially in the field of retention research (Dey & Astin, 1993). The outcome variable in this study was measured as a continuous variable (first year cumulative college GPA): a GPA of 2.00 or more indicated that students persisted up to the end of the school year and GPAs less than 2.00 indicated non-persistence. The data were gathered from the student database at EJC for this predictive, non-experimental study.

An *ex post facto* design, employed to test the hypotheses, was appropriate since this study examined relationships after the independent variables have occurred. Causal comparison and correlational research are two forms of non-experimental quantitative research. A predictive, correlational research was conducted for this study. Correlational studies involve relationships, whereas causal comparison studies involve comparison (Gay, Mills, & Airasian, 2006). The researcher acknowledges that this study could not be utilized as proof of a cause and effect relationship. The advantages of using a correlational approach in this study was that it permitted investigation of variables that could not or should not be investigated experimentally; it helped in facilitating decision making; it indicated the need and provide guidance for experimental studies; and it was less costly on all dimensions (Gay et al., 2006). Regression analysis was computed for the research questions.

A permission letter (Appendix C) to use students' data was sent to the managing authorities, as soon as approval was granted by the Institutional Review Board at the Oklahoma State University to conduct the study.

Overview of Precollege Academic Variables

A GPA of a minimum of 2.0 at the end of a semester is considered a pass at EJC. A credit load of 15 or more hours for semester one is considered full-time, and a cumulative grade of at least 36 hours at the end of the school year indicates success, that is, the student has met the course credit requirement to move into second year. The

programs of study at EJC are set up in a way that students would have a minimum of 72

credits at the end of their traditional two-years of enrollment. Students have three

semesters (fall, spring, and summer) to earn at least 36 credit hours before going into

second year. Students are only allowed to take six credits during the summer semester.

The MOE automatically pays the first semester tuition for all students going into second

year who meet the minimum requirement of a GPA of 2.0 and who have earned a

minimum of 32 credit hours. The continuation of this assistance from the Ministry is

dependent on student's performance at the end of semester one. Students are expected to

maintain a GPA of 2.5 or above.

The number of CXC passes helps to determine the program of study students will

take in college. At EJC, students who pass six or more CXCs are allowed to choose their

programs of study. Those students also receive tuition grants from the MOE provided that

they maintain a GPA of 2.50 or above at the end of the first semester. Decisions on

student program is made using a combination of the high school transcript, ATLIB score

and CXCs passes (by subjects) for those with less than six passes in CXC. In some cases,

students are called in for an interview with school administrators to determine placement.

The ATLIB exam is a placement examination used by most junior colleges in

Belize to determine which Math and English courses students will take upon entry into

college. EJC accepts a grade of 60 for English and 55 for Math for entry into the college

English and Math courses. Students who do not meet these requirements are required to

take a remedial Math and/or English course in their first semester before going on to the college level courses.

Three subgroups of students will be examined: students coming from the Stann Creek Ecumenical College (EC), Independence High School (IHS), and Delille Academy (DA). These three high schools use different systems for grading; EC and DA use a four-point grading system, while IHS continues to report grades by percentage. A review of the grading schemes for these schools revealed that all three use the same alphabet equivalent for their number grades. Hence, high school GPA will be treated as a continuous variable. No other decisions are made using student pre-matriculation data once they have enrolled at EJC.

Research Questions

Framed within Chen's (2008) model, the following research questions guided this study:

1. Do statistically significant relationships exist between student background characteristics (age, gender, ethnicity, parental education level) and persistence of students at the Ecumenical Junior College.

2. Do statistically significant relationships exist between precollege preparation factors (High School GPA, ATLIB scores, number of CXC passes) and persistence of students at Ecumenical Junior College.

3. Do statistically significant relationships exist between financial factors (financial aid) and persistence of students at Ecumenical Junior College.

4. Do statistically significant relationships exist between college experience (first semester college GPA) and persistence of students at Ecumenical Junior College.

Null Hypotheses

There is no significant relationship between:

1. the backgrounds of students at Ecumenical Junior College through their first year in college

2. the precollege preparation of students Ecumenical Junior College through their first year in college

3. the financial factors of students Ecumenical Junior College through their first year in college

4. the college experience of students Ecumenical Junior College through their first year in college

Theoretical Perspective

The theories of student change in college could be grouped in two broad categories: developmental theories of student change and college impact models of student change (Pascarella & Terenzini, 2005). Developmental theories or models

address the nature, structure, and processes of individual human growth, which is not the focus of this study. The college impact models emphasize changes associated with the characteristics of the institutions students attend or the experiences they have once enrolled. College impact models also identify and evaluate several sets of variables (e.g. student related, organizational, or environmental) that are presumed to influence some aspect of change.

Several theoretical perspectives are used to describe and explain student success in college: psychological, sociological, organizational, interactional, and economic (Chen, 2008). Retention theorists have posited that many factors influence students' persistence in college. These may include students' precollege characteristics, institutional factors, and environmental factors (Astin, 1975; Bean, 1980; Pascarella & Terenzini, 1980; Spady, 1971; Tinto, 1975). This study was *ex post facto* and took on a non-experimental quantitative approach to the study of college impact. Chen's (2008) heterogeneous approach guided the study. This framework added financial factors to the multifaceted factors identified by the dominant perspectives and included the influence of race/ethnicity on college persistence. Data was collected following proper scientific methodology and the predictive relationship between the independent variables and dependent variables was computed using regression techniques.

Significance of Study

The expansion of tertiary education access across Belize brought with it an increasingly large and diverse student population. The current tertiary education system functions to get students into college, but there is speculation as to whether the students have been learning or are being provided with what is needed to persist in post-secondary institutions. Paulsen (1998) stated that there is a large earning differential between college educated and high school educated members of the workforce. Evans, Green & Murinde (2002), in studying the relationship among economic growth, financial development, and human capital, found that money makes a significant contribution to growth. With global reality upon Belize and the seriousness of the issues of not having a decent college degree, it was important to investigate issues of persistence, retention, and dropout to inform educational decision making and to recommend preventative and intervention strategies.

By examining the students' background characteristics, precollege preparation, financial factors, and college experience of first year college students at EJC, this study aimed to provide empirical evidence on how these may influence students' persistence in college; once identified this can lead to development of preventative and intervention strategies in attempt to keep Belizean postsecondary dropout competitive nationally and regionally. The technique used in the analysis, being able to produce a regression equation, will enable institution personnel to make early and accurate estimation for the possibilities that an individual falls into either category: persisting or non-persisting.

Better understanding of the factors that affect persistence will enable policymakers, school administrators, and the MOE to draw up intervention efforts targeted at the individual needs of the students.

Limited research has been conducted on persistence of students at two-year community colleges despite the fact that these colleges serve a diverse group of students. None such study has been attempted in Belize at an institutional level, nor at the national level. This study's findings help to fill the gap and increase the knowledge base by enhancing the understanding of the factors that influence student persistence at a two-year community college in Belize. This information will also assist other two-year institutions throughout Belize to identify students' characteristics that may predict successful degree completion or need for intervention.

Limitation

Due to the lack of research studies on retention in Belize, this study used a broad amount of data on college persistence and highlights studies done at various community colleges in the United States. This study sought to provide a comprehensive understanding of the roles of demographic factors and academic preparation on student persistence at an institutional level. A state level study would require the compilation of national data. The poor state of informed data collection; especially in terms of collecting and aggregating statistical data on access, enrollment, persistence, retention, and degree completion from postsecondary institutions in Belize limited the scope of this research.

And lastly, due to the structure of the dataset, not all of Chen's (2008) model factors were examined. Unfortunately, educational aspirations, organizational characteristics, time in college, and interaction effects were not examined.

Delimitation of Study

For the purpose of this study, the population was limited only to first-year students enrolled in the fall of 2010 at EJC. Therefore the data may not be generalizable to community colleges elsewhere in the country. The variables for this study were also limited to a few specified student pre-collegiate and academic factors. It was recognized that other factors and additional variables may affect first-year student persistence. Family socioeconomic status and student involvement in secondary school have been shown to impact freshmen college persistence, but these were not included due to lack of available data. Some institutional practices and barriers may also significantly affect student persistence; these were excluded to limit the scope of this research.

Assumption

It is assumed that the data examined in this study were accurate and correctly entered into the student database, and that students correctly filled out the school student personal data form.

Definition of Terms

ATLIB: stands for the Association of Tertiary Level Institutions in Belize. This is an organization comprised of administrators and stakeholders of tertiary institutions in Belize who come together to discuss critical issues affecting higher education. The ATLIB examination is a placement examination (Math and English) given to high school leaving students in February. The results of the ATLIB exam aid in the placement of students in Math and English courses in college.

Attrition: used to describe students who fail to re-enroll at an institution in consecutive semesters (Seidman, 2005a)

Community college: in Belize, community colleges (called junior colleges) are two year institutions that provide higher education and lower level tertiary education and grant associate's degrees.

Composite ATLIB score: the average of a student Math and English grade on the ATLIB exam

CXC: stands for the Caribbean Examination Council. CXC provides criterion referenced examinations and certification to over 15 Caribbean territories at the secondary and tertiary levels. The Caribbean Secondary Education Certificate (CSEC) examination is offered to students at the end of secondary school. This study refers to CXC CSEC examination results.

Dropout: refers to a student whose initial goal was to complete a degree but did not complete it.

Ethnicity: for this study related to the classification of students into groups on the basis of racial characteristics

Financial Aid: referred to financial assistance students receive from the government, educational institutions, and some public or private sectors, to assist with their college career. These may include grants, loans, and work study assistance.

Persistence: the action of students in staying within the higher education system from the beginning of the school year to the end in good academic standing (Stewart, 2010).

Precollege academic variables: the high school GPA, ATLIB scores, and number of CXC passes.

Retention: referred to the ability of an institution to keep a student from the point of admission to graduation (Seidman, 2005a).

Two-year institution: referred to a postsecondary institution that offers an associate degree as the highest level.

Withdrawal: referred to the departure of a student from college

Summary and Organization of the Study

Chapter 1 provides an outline of the challenges faced by Belize's higher education institutions. It draws attention to the persistence problem at EJC. The focus of the study was to determine whether there were significant relationships between students 'background characteristics, precollege preparation, financial factors, and college

experience on the persistence of students in Belizean community colleges. Chen's (2008) heterogeneous model was used to direct the study while a non-experimental quantitative design was employed. The importance of this study included addition to knowledge base, filling the gap of the lack of persistence studies in Belize, and the provision of empirical evidence on how student's pre-matriculation variables affect college persistence, which can aid administrators to plan programs and policies to help retain students in college.

Chapter 2 contains a review of the literature related to factors affecting students' persistence in community colleges. The methodology and the procedures used to gather and analyze data for this study are presented in chapter 3. The result and analyses are presented in chapter 4. A summary of the study, a discussion of the findings, along with recommendations are presented in chapter 5. Reference and Appendix sections are included at the end of chapter 5, respectively.

CHAPTER II

LITERATURE REVIEW

The knowledge of factors affecting college success, and understanding the

processes how these play out throughout the college experience, aid educational

stakeholders to propose and implement policies and strategies aimed at improving

persistence of students in postsecondary institutions (Seidman, 2005a). No formal study

on retention and persistence has been attempted in Belize. Belizean secondary schools

completion rate was estimated at 61.9% (Abstract of Statistics, 2008/2009). The rate of

postsecondary enrollment has been estimated at 4% (P. Faber, personal communication,

February 4, 2009). Of the 6,972 students enrolled in higher education in 2008/2009,

2,608 were males and 4,564 females. Belize possesses a fairly young population with an

average age of 22 (Statistical Institute of Belize, 2010). This figure increased from 19 in

2000. Noteworthy to mention is the fact that tourism has replaced agriculture as the major

foreign exchange earner, and presently 71% of the workforce is employed in the service

sector (World Factbook, 2007).

Provided in this chapter is a brief synopsis of the development of

retention/persistence theories, an integration of what is known about the individual

attributes (age, gender, ethnicity, financial aid and parental educational attainment) and

academic characteristics (high school GPA, number of CXC passes, and ATLIB scores,

and college GPA of first year college students, and a highlighting of how these influence

persistence at a community college in Dangriga Town. Chen's (2008) heterogeneous

model guided this study. Information was obtained from Oklahoma State University

Library and online databases such as Proquest, ERIC, and JSTOR. Searches were

conducted using the following words or combination of words: college success, attrition,

college retention, college persistence, pre-matriculation variables and college persistence,

academic achievement and college persistence, student success in college, minority

students in college, and nontraditional students in college.

Development of Retention/Persistence Theories

Over the past three decades, research regarding student retention and persistence

in postsecondary institutions has significantly increased. Since then, many studies have

emerged describing how precollege characteristics, social, and institutional attributes

affect students' persistence in college. Many theoretical and conceptual models have been

purported to explain the processes of retention and persistence (Spady, 1970, 1971; Astin,

1975; Tinto, 1975, 1987, 1993; Bean, 1985; Bean & Metzner, 1985; Pascarella, 1985;

Cabrera, Nora, & Castaneda, 1993). Each model or theory proposed has unique

components: sociological, psychological, economic, or organizational. Some however

borrow from, add to, or complement other models. Among these models are assertions

regarding the interaction of students and their institutions and how these influence college

outcomes: precollege factors (Astin, 1991; Cabrera, Nora, Castaneda, 1993; Kuh, Kinzie,

and Buckley, 2006), student institutional fit (Spady, 1970, 1971; Tinto, 1987, 1993;

Pascarella & Terenzini, 1991), campus climate (Hurtado, 1992; Nora & Cabrera, 1996), and organizational climate (Pascarella 1985; Volkwein & Cabrera, 2000). Tinto's (1975, 1987, 1993) Student Integration Model is the most widely known and studied model. His model borrowed largely from Durkheim's Suicide Model, Van Gennep's Rite of Passage, and the Spady Model of Student Attrition. The other widely used retention model is Bean (1980, 1982, 1985) Student Attrition Model. The other models, mostly extend, critique, or refine these highly quoted models.

Student integration Model

  The root of student departure can only be fully understood fully only by referring to the understanding and experiences of each and every individual who departs from an institution (Tinto, 1975, 1993). Tinto proposed three categories of factors that may influence students' departure from an institution: the disposition of the individuals who enter, the character of their interactional experience within the institution after entry, and the external factors that may influence their behavior within the institution (Tinto 1993). On the individual level, Tinto mentioned two student attributes that determine whether they will persist or depart: intention and commitment. He stated that these not only determine individual attainment but also influence their integration within the institution. On the institution level, four student attributes affect departure or retention; each describing an important interactional outcome based on the students' experiences within the institution: adjustment, difficulty, incongruence, and isolation. Tinto added that these

four attributes also reflect the pre-matriculation characteristics of individual student's and the effect of external forces that affect their participation. He pointed out two important external factors that influence persistence: obligations and finances.

Tinto's (1975) model, institutionally oriented, has reached near paradigmatic level (Braxton, Sullivan, & Johnson, 1997; Braxton, 2000). It argues that the process of dropout can be viewed as a longitudinal process of interactions between an individual and the institution. The nature of academic and social integration influences the individual's level of commitment to the institution and gradually his or her decision to persist or depart. This model is rooted in Durkheim's (1951) theory of suicide which stated that the likelihood of suicide in society increases when two types of integrations are lacking: insufficient moral integration and insufficient collective affiliation. Durkheim (1951) argued that suicide is not an individual act but a social reality tied to social structures. He theorized three different types of suicide found in all kinds of societies: egotistic, altruistic, and anomic. Egotistic suicide, he proposed results from lack of integration of an individual into society. Altruistic suicide results in societies with high integration where the individual needs are seen less than that of the society on a whole. Anomic suicide results from the lack of regulation of the individual by society.

In the development of his integration theory, Tinto (1987) turned to social anthropology and studied the process of establishing membership in traditional societies. He used the work of Arnold Van Gennep to explain the process of separation that he proposed occurred when students enter college. Van Gennep (1960), in proposing his rite

of passage framework, was concerned with the movement of individuals and societies through time and the issue of social stability in times of change. He noted that all human societies perform some ceremonial rites, which he termed rite of passage, to mark significant transitions in the social status of individuals. He proposed that these rites occur in a sequence of three stages: rites of separation from everyday life, a luminal or marginal state of transition from one status to the next, and rites of aggregation or reintroduction to the social order with a new status. Tinto used this idea to describe the process through which college students establish membership within the college or university communities and also to explain the cases of early departure from college.

Tinto (1975) also built on Spady's sociological model of the college dropout process as he formulated his theory of student integration. Spady (1970) proposed five variables that contributed directly to social integration: academic potential, normative congruence, grade performance, intellectual development, and friendship support. He supported the idea that social integration was a key to retention and built on Durkheim's theory of suicide. Accordingly, when a person views college as a social system having its own value and social structure the person can treat dropout from that social system in a manner similar to that of suicide in the wider society. Astin (1975) also influenced Tinto's Student Integration Model. His involvement theory argued that student learning and retention are influenced by students' level of involvement in an institution.

An analysis of the Tinto model reveals that he placed emphasis on the importance of academic and social integration for the retention of students at postsecondary

institutions. The integrity of Tinto's use of Durkheim's Suicide Theory and Van Gennep's Rite of Passage in explaining integration and students' departure process has been questioned. Tierney (1999) argued that Tinto's model, borrowing from Durkheim, suggests that students ought to commit cultural suicide if they are to integrate and assimilate into college and be successful. Tucker (1999/2000) asserted that using Durkheim's Suicide Theory as an analogy for departure is too powerful to use for describing students' reaction to failing. He stated that suicide seems to be more a condition that accompanies hopelessness rather than frustration which is the usual student reaction to failing. Tierney also pointed out that Tinto viewed college as an institution ritual whereby the success of the student is dependent on the degree to which they are able to integrate into the social and academic life of postsecondary institutions.

The effectiveness of using Tinto's assertions to aid in explaining students' persistence at two-year community colleges may be questionable. His study was conducted using traditional-aged students at four-year institutions. The demography of the new community colleges has also changed dramatically. Community colleges are now accessed by a diverse group of students with varying educational needs and expectations. Many of these students have been labeled nontraditional, as they are noted to be older, working, and may enroll part-time in college. Bean and Metzner (1985) built their model to explain the persistence or departure processes of this nontraditional group of postsecondary students.

Much attention to students of color and financial factors were not made in Tinto's earlier models (1975, 1987). He included these when he revisited his student integration model later. According to Tinto (1993), since under-represented students are more likely to come from disadvantaged background and to have experienced inferior schooling prior to college, they are more likely to enter college with serious academic deficiencies. They tend to face greater problems in meeting the academic demands of school work and in obtaining sufficient financial resources for college education.

Student Attrition Model

Many reviews have identified variables significantly correlated to student attrition, but these have failed to describe how they affect attrition (Tinto, 1975, 1993; Bean 1985). Bean (1980, 1982) took an organizational stance in his look at student departure. He proposed an alternative model that is more psychological in nature to explain the college persistence process and posited that student attrition is analogous to turnover in work organizations (Cabrera, Nora, & Castaneda, 1992). He viewed the occurrence of student departure as reflecting the impact that the organization has on the socialization and satisfaction of students (Tinto, 1993). In his study of a group of students at a major mid-western research university during April of 1982, Bean found that social life has large significant effects on institutional fit for each class. The finding indicates that students seem to have a much greater effect on the attitudes of other students than do faculty members. Hence, this finding suggests that students actively shape their

socializing environments. Bean's model seems to have similar theoretical foundation to Pascarella's (1980) in that both posited that socialization is a dominant force in influencing dropout decisions.

The research base on student persistence prior to the 1990s was biased toward traditional students; those who were supposed to be White, between 18 to 22 years, who attended four-year institutions full-time and lived on campus, and had little or no family obligation (Pascarella & Terenzini, 2005). Bean (1985) stressed the importance of behavioral intentions as predictors of persistence behavior: beliefs shape attitude, attitude shape intention. He stated that a major gap in Tinto's (1975, 1987) theory is its limited information on the role of external factors in shaping perceptions, commitments, and preferences of students. The models of student attrition for nontraditional student (Bean & Metzner 1985, Wylie 2004) were proposed to account for the behavior of those students who normally would be excluded when using Tinto's Student Integration Model. Bean & Metzner suggested that the environmental pressures may be different for nontraditional students; they have fewer interactions within the college environment, but more with the external environment. Wylie's model proposes that non-persistence decisions are a short-term cyclic process, where a student's poor adjustments in academic and social self-worth results in a re-evaluation of and separation from their course participation.

Comparison between the two models

Both major theorists view departure from college as a process where students'
decision to persist is determined by the ongoing interactions between precollege
characteristics and institutional environments. According to Bean (1985) his model of
student attrition (Bean, 1980, 1982) has much in common with Tinto's (1975) model. A
close analysis of both models revealed that the two theorists used different words to
describe the same concept (Cabrera et al, 1992) of institutional commitment (Tinto, 1975)
and institutional fit (Bean, 1980, 1982). The differences, according to Bean's (1985)
revised model, are that the student integration model includes (a) family background and
individual attributes, (b) initial goal and institutional commitments, (c) grade
performance and intellectual development leading to academic integration, and (d) the
expectation that goal commitment and institutional commitment directly affect dropout.
These, according to Bean, are manifested in the student attrition model in the socio-
psychological variables and also in later institutional and goal commitments.

The empirical base supporting Tinto's influential model has been extended,
critiqued, and refined by many researchers (Astin, 1993; Braxton, Sullivan, & Johnson,
1997; Nora & Cabrera, 1996; Pascarella & Terenzini, 1991). Many other
retention/persistence/attrition models and theories have also been developed to aid in the
explanation of college retention/persistence. These include Bean & Metzner's (1985)
Conceptual Model of Nontraditional Student Attrition, Cabrera et. al's (1992) Integrated
Model, Nora & Cabrera's (1996) Student Adjustment Model, Bean & Eaton's

(2001/2002) Psychological Model, Pascarella's (1985) General Causal Model, and

Wylie's (2004) Theoretical Model of Nontraditional Student Attrition, among others.

Conceptual Frameworks

The dominant paradigm in retention research posited that academic achievement

and social relations within the college environment promote learning and retention.

Theoretically, academic achievement and social relations are assumed to influence

student attitudes, including their college completion goals, which in turn affect retention

and persistence in college (Tinto, 1975, 1987, 1993; Cabrera, Nora, & Castaneda, 1993;

Braxton, Sulivan & Johnson, 1997; Pascarella & Terenzini, 1991).

Blau & Doucan (1967), in an examination of the early occupational attainment by

race, class, and gender in the United States, posited that higher education acts as an

equalizer in status attainment. This assertion by Blau and Doucan magnifies the need to

examine the student characteristics and precollege and college factors that may affect

students' persistence in community colleges.

This study was conducted with the assumption that students' background (age,

gender, ethnicity, financial aid, parental education) and academic preparation (high

school GPA, standardized test scores, college GPA, and credits earned) may influence

their persistence in college. An understanding of the relationship between the various

student factors and college persistence can help institutions to implement policies and

strategies aimed at addressing persistence issues from the beginning of the students'

college experience.

This study analyzed data to aid in understanding the pre-collegiate and collegiate

attributes that may affect students' performance and persistence in a Belizean higher

education institution. Chen (2008) conceptual framework was chosen to help to focus the

study on the student factors that influence the process of departure. Focusing on this was

not to downplay the importance of the college institutional and environmental factors that

may also influence college persistence. Different theories have contributed significantly

to the understanding of student retention and persistence. According to Cabrera et al

(1992), merging the unique and similar premises into a single model may prove to be

more effective in explaining persistence than either model by itself. Tierney (1992) also

suggested that different theoretical models should be utilized rather than those based

upon one or two theories alone.

Existing literature proposes five categories of theories that guide student departure

studies: psychological, sociological, organizational, interactional, and economic (Braxton

& Hirschy, 2005). According to Chen (2008), the psychological approach emphasizes the

impact of individual psychological attributes in the process of dropout; the sociological

and economic approaches focus more on the broader external social and economic forces;

in the organizational theory, student departure is seen as affected by immediate

organizational influences on student behavior; and interactional theories stress that both

individual and environmental forces play important role in the departure process. Chen

also noted that the first four theories have identified various factors that provide evidence on understanding the student departure decision process: student background characteristics, educational aspiration, precollege preparation, college experience, and organizational attributes. She pointed out major limitations to the aforementioned theories: lack of model clarification, limited data, problems in examining aid effects, limited attention to the socioeconomic gap, lack of consideration of the racial group differences, and methodological problems.

Chen (2008) proposed a synthesized model integrating all the theoretical approaches. She used this model, also refered to as the heterogeneous model, to examine how changes in the amount of financial aid are differentially related to the dropout risk of students from different income and racial/ethnic background over time (Figure 1). This synthesized model fosters a more comprehensive explanation of student departure. It aims to investigate the process of student departure, and explain some of the reasons why students withdraw from institutions. Chen identified these nine clusters of variables (one dependent, and eight independent) from the five aforementioned perspectives: the outcome variable, student background characteristics, educational aspiration, precollege preparation, financial factors, college experience, institutional attributes, time in college, and interaction factors.

Figure 1: Risk gap by Income and Race/ethnicity
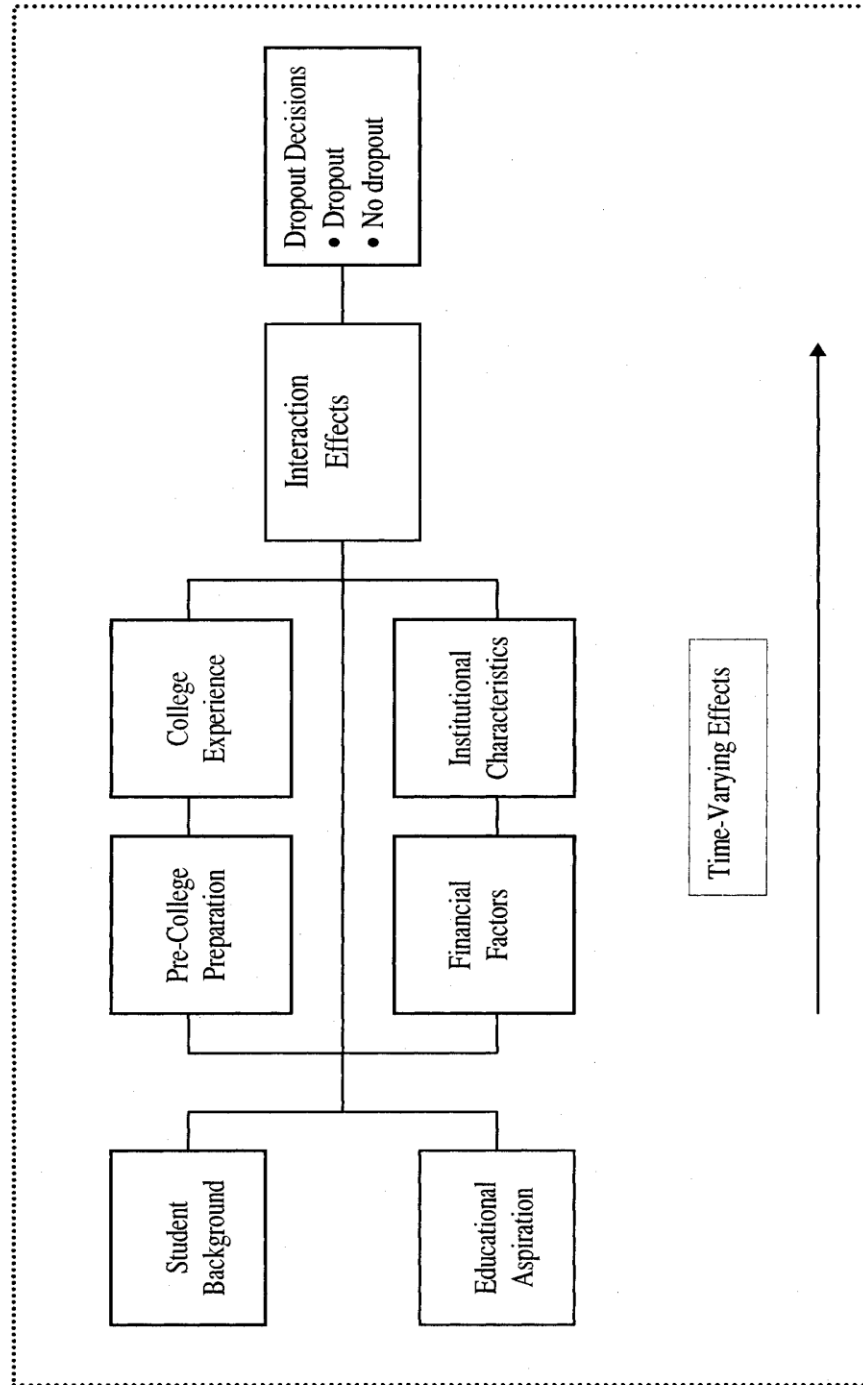
Source: Chen's (2008) synthesized model (conceptual Framework)

51

Two-Year Community Colleges

Most, if not all, community colleges in Belize were organizationally developed as upward extensions of secondary schools (Chan, 2005). These colleges carried the responsibility to provide students with post-secondary education until the inception of the University of Belize in 2000 (Bennett, 2008) when they acquired the added responsibility of providing the first two-year education towards a bachelor degree by conducting lower division courses for the university.

Notable changes have been seen in Belizean education since the development of community colleges in the districts, especially in expanding access. Prior to the 1980s, higher education was accessible only to Belize City residents who could afford to pay for tuition, books, and other fees. For the most part, it presented the opportunity to an elite population to pursue an associate degree (Chan, 2005). The only exceptions were those students from the other districts who were awarded financial assistance to pursue their degree in Belize City.

According to Cohen & Brawer (2003):

The community college reached out to attract those who were not being served by traditional higher education: those who could not afford the tuition; who could not take the time out to attend a college full time; whose ethnic background had constrained them from participating; who had inadequate preparation in the lower schools; whose educational progress had been interrupted by some temporary

52

condition; who had become obsolete in their jobs or had never been trained to work at any job; who needed a connection to obtain a job… (p. 29).

Many social forces contributed to the rise of community colleges in the United States (Cohen & Brawer, 2003): prominent among these were the need for workers trained to operate the nation's expanding industries and the drive for social equity. The reasons for the growth of community colleges are varied; but what is noteworthy is that they have led to notable changes in American higher education, especially in terms of increasing access. Increase in enrollment also led to major changes in the composition of the student body attending higher education (Pascarella & Terenzini, 2005). Presently, community colleges are widely diverse in student population, attributes, and characteristics in comparison to their four year counterpart (Terenzini et al., 1994). This demographic shift, among others, in the population of college students has brought with it multiple challenges; among which, a major one is the issue of persistence and retention (Allen, 1999).

Due to the nature of the student populations at two-year community colleges, they tend to have a higher rate of departure or withdrawal than four-year institutions. The majority, if not all, community colleges in Belize have open-admissions policies. This reality allows a diverse array of students to enroll at community colleges: those who may be academically unprepared, financially independent, of ethnic minority, commute to campus, attend on a part-time basis, and older, among others. Research has also shown

that other factors may affect students' persistence in community colleges, but this review focuses only on those factors that students bring into the college environment. According to Seidman (2005a), once at-risk students are identified, the institutions can begin to target these students with intervention strategies. Swail (2006) noted that institutions must understand what each student brings with him or her in order to provide the appropriate support to ensure student success.

College Student Retention/Persistence

Pascarella & Terenzini (2005) identified two categories of theories of college student change: developmental theories and college impact theories. Developmental theories address the nature, structure, and processes of individual human growth. The college impact models emphasize change associated with the characteristics of the institutions students attend or with the experiences they have while enrolled. This study will be framed on theories of college impact as proposed by college retention theorists.

The dearth of research on community colleges is a profound problem in the study of retention (Bailey & Alfonso, 2005). College student retention and persistence have long been of interest to educators, university administration, governments, and researchers as noted by the overabundance of research three decades ago exploring the issues of college dropout (Spady, 1970, 1971; Astin, 1975; Tinto, 1975, 1987; Bean, 1980, 1982, 1985). Subsequent work by these researchers, and more, continue to seek to demystify the reasons for student departure from postsecondary institutions (Tinto 1993,

1999; Bean & Metzner 1985; Pascarella & Terenzini, 1991, 2005). Tinto (1975) stated

that little has been done in the area of trying to understand the process of student

departure.

Student retention issues have become significant in the life of higher education.

Considerable amount of money and time have been spent in attempts to determine why

some students leave college while others persist (Tinto, 1993; Seidman, 2005a). Strauss

and Volkwein (2004) point out that the proportion of students leaving college without a

degree is always twice as large at two year than four year campuses. Almost 50% of

students entering two-year colleges and more than 25% of those entering four-year

institutions in the United States leave before or at the end of their first year (Tinto, 1993;

Barth, Haycock, Huang, & Richardson, 2001). One must be cautious when making

assertions on departure as Polinsky (2002/2003) noted that there are two types of

attrition: positive and negative. Positive attrition is when a student departs without a

degree but achieving his or her goals. Negative attrition occurs when the student departs

without a degree and not achieving his or her goals. The type of attrition of concern in

this study is negative attrition.

Benefits of retention/Persistence

Many education, social, and political leaders underscore the benefits of retaining

students in postsecondary institutions. Retention has implications for the individual,

institution, as well as the society. With changing requirements of the workforce in

today's global economy, Hoffman and Vargas (2007) noted that postsecondary education

is the best assurance of economic health for young people, their communities, and the

nation. Completing a college degree helps the individual to fulfill their dreams and

achieve occupational prestige (Seidman, 2005a). Institutions fulfill their missions when

students' persist; they also gain financial security (Bean, 2005).

The media in Belize is swamped with news on crime and juvenile misdemeanor

on a daily basis. Watts (2001) emphasizes the decreased reliance on public assistance and

lower demands on criminal justice systems as retention drive is increased. A strong

economy may also depend on the educational attainment of its populace (Johnson, 1999;

Hagedorn, 2005). Earnings are significantly related to the levels of educational

attainment (Clark, 2004). For these benefits to be realized, both secondary school and

postsecondary educators must understand, embrace the challenges, and work together to

facilitate positive student outcomes (Conley, 2005b; Bueschel & Venezia, 2006).

Cost of attrition/dropout

Retention theorists contended that student departure occurs when there is

incongruence between the students' pre-entry attributes, intention, goals, and

commitment and the campus environment (Tinto, 1975, 1987; Astin, 1985; Pascarella,

1985). Cost of attrition may be threefold; society, individual, and institution (Pascarella

& Terenzini, 1991). Pascarella, Edison, Nora, Hagedorn, & Terenzini (1996) advised that

most college impacts on students are the cumulative result of a set of interrelated

experiences sustained over an extended period of time rather than the result of any single experience.

Cuseo (2002) suggested four roots to student attrition from college; these include academic, motivational, psychological, and financial. The academic root arises from inadequate preparation to meet the academic demands of college coursework; the motivational root is due to low level of commitment to college and perhaps, the perceived irrelevance of the college experience; the psychological root is evidenced by social and emotional issues; and the financial root is caused by the inability, or perceived inability, to afford the total cost of college and the perception that the cost of college outweighs its benefit. Habley (2004) mentioned the institutional loss of tuition and fees and the increased cost of recruitment. Retention of students is therefore a financial necessity (Desjardins, Ahlburg, & McCall, 2002).

Pre-matriculation Variables

The college population today is different from that of the students who participated in foundational retention studies (Strage, 1999). Several researchers have studied student persistence and withdrawal behaviors in hope to identify similar variables that may be significant in predicting college success. Johnson (2007) used pre-existing data to determine the rate of retention for a cohort of degree-seeking students who enrolled at a selected two-year technical college in the Fall of 2004. The relationship between selected pre-matriculation variables, academic, and environmental factors on

student persistence were examined along with the ability of these factors to predict

student persistence. She found that the majority of leavers depart during their first year at

the institution; that age, ethnicity, high school GPA and ACT scores, and first-year first

semester college GPA, and course-taking behavior were significantly related to student

persistence. She also noted that external factors such as family status and financial aid

influence persistence. Peltier, Laden and Matranga (1999) stated that students'

satisfaction with and success in college are affected by many factors which they bring

with them.

Stewart (2010) examined student demographic, family characteristics, precollege,

and college academic factors that predict persistence between freshmen students who

were placed or not placed in remediation courses. The participants were 3,213 first time,

fill-time, and part-time degree-seeking freshmen students enrolled at the University of

Oklahoma during the fall 2006 through the fall 2008 semesters. Using Tinto's (1993)

Longitudinal Model of Institutional Departure to guide the study, Stewart found

statistically significant mean differences ($\alpha = 0.01$) for ethnicity, financial aid, and

remediation status on persistence; a statistically significant relationship (($\alpha = 0.01$)

between high school GPA, first semester college cumulative GPA, ACT composite

scores and persistence; and academic factors that predict persistence revealed that first

semester college cumulative GPA and high school GPA were statistically significant

predictors of persistence and together accounted for slightly over 26% of the variance.

Stewart used an *ex post facto* design and utilized ANOVA, Pearson's Product Moment

correlations, and stepwise multiple regression to examine group differences on persistence after the independent variables had occurred.

This next section of the review focuses on pre-matriculation factors that have been proposed to affect students' persistence in college. The researcher acknowledges the fact that many other factors influence persistence and retention in community colleges.

Age

Older students enter college for a wide range of reasons (Tinto, 1993). Some aspire for better standard of living, desire job changes, due to job requirement, or want to assist with family income, among others. For many of these students, it is their first time in college. For others, it is the continuation of a college career that may have been disrupted for some reason. According to DesJardins, Ahlburg & McCall (2002) these groups of students are more focused and show stronger commitment to learn. Many studies posited that older students achieve higher college GPA than traditional-aged students (Grime, 1997; Hagedorn, 2005; Cofer & Somers, 2000; Leppel, 1984).

Many other studies suggest that older students are more likely to drop out of college due to having to juggle more responsibilities and are more likely to be influenced by environmental factors (Tinto, 1975, 1987, 1993; Bean, 1980; Mohammadi, 1996; Byun, 2000). Bean & Metzner's (1985) Nontraditional Model of Student Attrition posited that older students are more likely to drop out due to one or more of the following reasons: academic performance, intent to leave, previous performance and educational

goals, and environmental variables. They are more likely to have family and financial obligations that restrict their involvement in college life (Tinto, 1987; St. John, Carter, Chun, Musoba, 2006). Unlike Tinto's (1975) model that emphasized the importance of social integration as a determinant of students' persistence in college, Bean (1980) noted that for these groups of students, external factors seemed to predict persistence. These students are expected to balance the demands of jobs and family with college obligations. They have less time to socialize on campus. Delayed entry into college has also been found to be significant in predicting persistence (Craig, 2005; NCES, 2005). Other studies, such as Clark (2004) and Johnson (1999) have no significant difference in persistence between older and younger students.

Gender

There has been a general increase in the enrollment of female students in community colleges. This trend is notable both in the United States and in Belize. An analysis of the enrollment data from the 2000-2001 to 2008-2009 school years for the Stann Creek Ecumenical Junior College shows that females have dominated college attendance for the nine-year period (Abstract of Education Statistics, 2008-2009). An average enrollment of 2.5 female to 1 male ratio has been noted. No data is available on gender participation and persistence in postsecondary institutions in Belize. This study reviewed data gathered about gender participation and persistence in higher education in the United States.

The rising cost of living and the need to contribute to family income have

prompted more women to return to work. Many women are attending postsecondary

education due to the increasing need for higher education in the workforce (Peltier et

al.,1999). The results of studies have been mixed. Feldman (1993) indicated that females

have higher persistence rate than males. This trend was also noted by Boyer (2002) and

Johnson (1999). Boyer's reason was that females were more able than males to integrate

socially into the college environment by interacting with peers. A study done by Grime

(1997) reveals that men exhibited more academic difficulties and showed lower interest

in college courses, both of which may put them at higher risk of dropping out.

Hagadorn, Maxwell, & Hampton (2001) examined what variables would predict

academic success and retention among African American females in a historically Black

liberal arts college and indicated that both academic and social adjustment were

significant in predicting persistence. Their conclusion shows that African American

women face many impediments in their success and that they are more likely to leave

college. Females were also predicted to leave more than men because of personal and

family reasons (Bradburn, 2002; Mohammadi, 1996). Robertson (1991) noted that

results have been conflicting on relationship of gender and persistence. Other studies

show no significant difference in persistence for males and females (Leppel 2002; Bailey,

Jenkins, and Leinbach, 2005).

Ethnicity

The ethnic diversity of students on community college campuses has expanded greatly over the years, but despite massive gains in enrollment, a major gap still exists between educational attainment and graduation rate across racial groups of students (Ishitani, 2006). As the diversity of students increases within community college campuses, so do the issues associated with their retention (Seidman, 2005b). Several studies have found that many ethnic groups have high college dropout rates (Cofer & Somers, 2000). Morley (2007) conducted a study at the University of Massachusetts to examine the influence of racial/ethnic dynamics on the process of social and academic integration. She interviewed students throughout their freshman year and at the beginning of their sophomore year (Fall of 1995) about pre-college and in-college experiences. Her analysis revealed six ethnic dynamics that hindered the social and academic integration of minority students at a Predominantly White Institution (PWI). These dynamics included the role of family life, being placed socially by race/ethnicity, racial/ethnic accountability, the pervasiveness of White culture, the pursuit of a color-blind society, and the overrepresentation of minority students among weaker students.

Belize is a multiethnic nation: its ethnic diversity can be credited to its long history of colonialism and conquest (Dobson, 1973). The ethnic breakdown of Belize in 2007 was: Mestizo, 50%; Creole, 25.8%; Maya, 8.7%; Garifuna, 6.8%; Mennonite, 3.3%, East Indian, 3.0%, Asian, 0.7%, Caucasian/White, 0.7%, Other, 1.0% (Statistical Institute of Belize, 2007). This diversity is also notable in institutions of learning throughout the

country, but no national statistical data are available on the ethnic breakdown of students enrolled at higher education. Like in the United States, once college access was made available to the masses, community colleges in Belize saw an increase in the ethnic diversity of students attending colleges.

Since no reliable data is available on the impact of ethnicity on college success in Belize, this analysis will draw from information available on minority studies in higher education in the United States. In 2007 the National Center for Education Statistics reported a 64.4% White to 32.2% minority ethnic breakdown. This 32.2% minority breakdown is divided into Black, 13.1%, Hispanic, 11.4%, Asian or Pacific Islander, 6.7%, American Indian, 1.0%, and Non-Resident Alien, 3.4%. Statistics from the US Department of Education (2009) on the college completion rate for different ethnic groups for students between the age of 25-29 years shows a completion rate of 78.6% for Asian/Pacific Islanders, 68.1% Whites, 53.4% Blacks, and 34.5% Hispanic.

According to Seidman (2005b) there are many reasons for disparity between Whites and minority groups. Most minority students are academically underprepared for college. Asian students have been labeled the "model minority" (Suzuki 2002) because most studies are indicating that they are persisting and graduating at a higher rate even than White students (Seidman, 2005b; Yeh, 2007).They have been cast outside the peripheries of normalcy (Ng, Lee, & Pak, 2007), but this assumption may not be true for some subgroups. Some studies show that subgroups in this population are showing low college attendance and persistence rates (Education Testing Service, 1997). Many intra-

group differences are seen among the Asian/Pacific Islanders, for example in English proficiency. Students who experience significant language barriers are more at risk of departure from college prior to graduation (Suzuki, 2002; Pang, 1995).

African American students at PWIs reported feeling that the campus environment was hostile and unsupportive of their social and cultural needs (Fleming, 1984). Hagedorn, Maxwell, and Hampton (2007) investigated what significant factors predict retention among African American males at an urban community college with high student diversity on the West Coast. They studied three cohorts of degree seeking students who enrolled Fall of 1995, 1996, or 1997, collected data for three consecutive semesters, and used logistic regression to determine the significance of the relationships. They learned that as students' progress in college, their academic preparations become increasingly more important in determining outcomes. Age was also found to be significant. Hagedorn, Maxwell, and Hampton (2007) found that older men tend to confront more problems and face many distracters that decrease their likelihood of persisting in college. Hours of course enrollment were also noted to be positively significant predictor of retention. For African American women at a historically black, private, liberal arts college in the Southeast, Schwartz and Washington (2007) found that academic and social integration were also significant predictors of persistence.

Hernandez and Lopez (2007) reported demographic characteristics, personal factors, environmental factors, involvement factors, and socio-cultural factors as affecting the persistence of different subgroups of Latino students in college. Noteworthy is the

high heterogeneity of the Latino community. Latino is a name given to multiple people of Hispanic descent. Once separated, subgroups of this ethnic group show varying background characteristics such as country of origin, first language, and immigration status, among others. Some groups, like the Central and South American Latinos seem to attain higher graduation rates than Puerto Ricans or Mexican Americans (Suarez-Orozco & Paez, 2002). Joined together, recent studies are showing that Latinos are trailing behind all other groups in earning undergraduate degrees (Rooney, 2002; U.S. Department of Education, 2008).

Studying personal and institutional factors affecting the retention of American Indian students, Belgarde & LoRé (2007) found that economics and family situations seem to be the primary causes for departure for this group. Maintaining connections to home communities and attending cultural ceremonies have also been shown to impact on the ability and desire for Native American students to persist in college (Barnhardt, 1994).

Eimers and Pike (1997) studied 799 freshmen at a residential, public research university, to investigate the differences or similarities in adjustment of minority and non-miniority students in college. Results indicated that non-minority students were more positive in their evaluations of their first-year experience, but minority students had significantly higher levels of faculty-student interaction. No significant differences were observed in intent to persist between minority and non-minority students.

High School Grades and Test Scores

High school attributes influence persistence (Barefoot, 2000; Feldman, 1993; Ishitani, 2006; Flemings, 2002; St. John, 2001). In a longitudinal study analyzing the organizational data from three semesters for three cohorts of African American males in an urban community college and using logistic regression to identify the factors that best predict retention, Bauer (2003) found that SAT or ACT scores and high school grade point averages constantly explained the largest variance in college outcomes when those outcomes are investigated using precollege characteristics. An ACT (2004) study also found that high school grade point average, ACT scores, and socioeconomic status have positive relationship to college retention. High school GPA was found to be the strongest predictor, followed by socioeconomic status and ACT scores.

Reuschel (2009) studied the associations between high school GPA, high school academic path, ACT scores, and first-year college success (measured by number of college hours completed and college GPA). She used transcript data for 19 years and younger, fulltime freshman students enrolled at Walters State College during the Fall of 2007 and employed a correlational study design to predict the association between high school performance and college success. She found a moderate positive relationship between high school GPA and college GPA at the end of the academic year, but noted that high school grade point average and ACT scores were statistically significant in predicting the number of college credit hours at the end of the college academic year. She also noted that students who were more likely to attend university tend to have higher

66

high school GPA, more likely to have a higher college GPA and earned more college credit hours at the end of the first semester and end of the year at college.

In another study, Smith (1990) noted that the combined pre-matriculation variables (high school grades, SAT scores, SES, and parental education) account for only approximately 12% of the variance in attrition or college grade. Adelman (2004) study also indicates that academic preparation accounted for only 17% of college completion rates. These findings suggest that there are significant variations in college success that cannot be explained by academic preparation alone. Geiser and Santelices (2007) questioned the use of standardized test scores as part of postsecondary admission process.

Parent Educational Level

Parental education in this study is implied to indicate the level of educational attainment beyond high school. Pascarella and Terenzini (1991) and Stage (1988) found that parental educational attainment affect college student attrition. This study focuses on the generation status of the enrolled first-time in college students. Levine and Nidifer (1996) noted that first generation students exhibit different college enrollment behaviors than those students whose parents have more education. In a study to examine whether first generation students who were equally prepared academically were comparable to students whose parents went to college, Warburton and Nunez (2001), found that the academic rigor of students high school curriculum was strongly associated with their postsecondary GPA, the amount of remedial coursework they took, and with their rates of

persistence and attainment. The more rigorous the high school curriculum was, the more likely students were to persist at postsecondary institutions where they had initially enrolled. The study also found a relationship between parents' level of education and the likelihood that students would undertake a more rigorous high school curriculum. Parent's level of education was also found to influence the enrollment, performance, and persist of students in four-year postsecondary institutions. First-generation students were also more likely to attend public comprehensive institutions. The findings in this study support previous research demonstrating that first-generation students have particular demographic characteristics that distinguish them from other students (Horn & Nunez, 2000).

Studies commonly show that students with higher socioeconomic status are more likely to persist in postsecondary education (Astin, 1993; NCES, 1995). Ishitani (2003) noted that the persistence rate of first-generation students is, on average, lower than those of continuing generation students. Paulsen and St. John (2002) noted that the effect of socioeconomic status on persistence may not be the same for all groups of students. These effects may differ by ethnicity. Warburton and Nunez (2001) study shows no significant difference in the first year college GPA and remedial course-taking patterns for first-generation students who took rigorous high school courses and scored high on their college entrance examinations.

Financial Aid

A key strategy used by governments to promote equal opportunity is financial aid (Contento, 1999). There are many forms of financial aid: grants, loans, and work study will be examined in this study. In Belize, financial aid has been available to college students since the late 1980s. Most of these have been merit-based or in the form of loans (government or bank). The merit-based financial aid is dependent on students' performance on the CXC examinations in high school. The loans are issued to students who qualify on a needs-based measure. The results of recent studies on student aid have shown that it is effective in compensating for the disadvantage of low income in that it increases the likelihood of low income students' persisting in college in comparison to the more affluent student (St. John, 1990).

According to Chen (2007) different types of aid are found to affect students' dropout behavior differently. In some studies, grants are found to have positive effects on persistence (Astin, 1975). Some show negative effects of grants on persistence (St. John & Starky, 1995) while others show negative effects for low income students only while no significance was noted for more affluent students (Paulsen & St. John, 2002). In two studies to evaluate the impact of tuition and financial aid on persistence from fall to spring of the first year of study at a community college among traditional age students (St. John & Starkey, 1994) and nontraditional students (Hippensteel, St. John, & Starky, 1996), St. John et al (1996) found that grants have negative effect on persistence and loans had a small insignificant effect. Cofer and Somers (1999), on the other hand, using

a combined sample of traditional and nontraditional age students, found positive effects of both grant and loans on persistence. St. John and Starky also found that the amount of work study is significantly and negatively related to persistence for students from low and middle income families. Pascarella and Terrenzini (2005), in their review of college impact, concluded that work study assistance increase the chance of students persisting in college.

In a five-year study to investigate the relationship between student background, financial aid and persistence, Contento (1999) found that nearly all variables (demographic, social, and economic) show favorable advantage for more economically affluent students, but financial aid did not show a significant influence on persistence and completion for the lower income nor the more economically affluent student.

<center>College Experience</center>

College GPA

Research has indicated that social mobility and status attainment are a function not simply of individual ability and family social status but also of intervening experiences such as educational experiences and attainment (Pascarella & Terenzini, 2005). In their review of literature on how college affects students, Pascarella and Terenzini concluded that specific college experiences promote students' persistence and attainment. These include academic achievement and the degree of students' integration into campus life. They pointed out that no other variable's relation to persistence or

degree completion has attracted more attention than grade performance. Despite their reluctance in suggesting grades to be a perfect measure of student performance relative to other students, they agreed that college grades may be the single best predictor of students' persistence, degree completion, and graduate school enrollment.

A new body of research employing event history analysis is suggesting that the effects of grade performance may very over time. According to Desjardins, McCall, Ahlburg & Moye (2002) event history modeling, in the study of college experience, considers the temporal nature of this student outcome. In a study using the National Center for Educational Statistics postsecondary transcript file of the High School and Beyond/Sophomore cohort and using event history modeling, Desjardins et al. (2002) results indicate that college GPA is a very powerful predictor of bachelor's degree attainment. They also found that GPA is initially positively and strongly related to graduation, but the trend is slightly negative. They concluded that this result indicate that GPA is a very important predictor of graduation, but as time passes the effect wanes slightly. The analytical technique (event history modeling) allows for the observation of the relationship between the regressor and regressand and the direction the relationship takes over time.

Summary

The review of selected research and literature has presented two dominant models in the study of student persistence and retention. These two models provided the ground work for the many retention studies that have been performed in the last three to four

decades. Despite the dearth of research focused specifically on the study of students'

persistence at two-year postsecondary institutions, three levels of factors have been

identified to affecting students' persistence in higher education: pre-entry, institutional,

and environmental factors. This study analyzes the impact of the pre-entry factors and

college experience on student persistence in college. Noted also were the many

demographic differences between students traditionally enrolled at four-year institutions

and those now seen in two-year community colleges. Many factors have been identified

to have substantial impact on students' retention and persistence at two-year community

colleges. These include age, gender, ethnicity, high school GPA, standardized test scores,

financial aid, parental education status, and college experience.

The next chapter described the methodology used to test the research questions. It

comprised of a description of the population, data collection, and data analysis.

CHAPTER III

METHODOLOGY

A wealth of research has been conducted on factors affecting college persistence (Spady, 1970, 1971; Tinto, 1975, 1987, 1993; Bean, 1985; Bean & Metzner, 1985; Pascarella, 1985; Cabrera, Nora, & Castaneda, 1993). Many studies identify academic, social, economic, and environmental factors as influencing college persistence of first-year college students. The research methodology in student departure research has evolved over the past three decades. According to Chen (2008) a reliable examination of student departure depends on the quality of data. Some persistence studies are done at the institutional level (Cabrera, Nora, & Castaneda, 1993; Ishitani, 2003; Johnson, 2008; Stewart, 2010) and others at the national level (Leppel, 2002; Chen, 2007; Paulsen & St. John, 2002, Dowd, 2004). No college student departure research has been conducted in Belize at the postsecondary level or at the national level. College administrators and enrollment managers in Belize traditionally use student data only for placement purposes during enrollment. Important pre-enrollment data for colleges in Belize are ones on student program of study at high school, passes in ATLIB, and in CXC. These data shed light on the probable program of study the student may pursue in college and the level of Math and English courses they will take in their first semester. Once enrolled, not much is done with the remaining information provided by the student.

The ATLIB examination is a national college placement examination in Math and English given to students in February of their senior year in high school. This exam aids to determine whether students will require remedial courses in Math and English or if they will directly enroll into college Math and English courses. Placement in Math and English has implications for the students in that these help to determine their length of stay in college and the need to take summer courses. Remedial course credits are not included in the 72 credits needed for meeting graduation requirement at EJC. Students who take remedial courses incur more financial burdens than students who enroll directly into college level courses. The CXC is a regional examination in specific subject areas; like ATLIB, it is given to students in their senior year in high school. Decisions made using CXC supersede those made from ATLIB. The Ministry of Education also uses information on the number of CXC passes to provide financial assistance to students; students with six or more passes, including English, get tuition grants from MOE.

Ecumenical Junior College collects detailed information on its students; students must submit a completed application form when applying to attend the college, and they are required to fill out a student data form during orientation (Appendix E). The problem at EJC, and also at the national level, is the lack of a proper data management system. Chen (2008) identified multiple limitations in the use of institutional data in the study of student persistence: the small samples and number of dropouts, the possible homogeneity in the background of the sample, the similarity in aid packages, and the limit in time-perspective. Despite these limitations, the lack of proper data management, and the dearth

of research in this area in Belize, this study seeks to add local perspectives into the student departure process. It is intended to provide the groundwork for further study in the area of retention and student persistence in Belizean community colleges.

Many statistical methods are now available for studying student persistence: linear regression, logistic regression, sequential regression analysis, and event history modeling (Chen, 2008). Since this study is new to Belize, is focused on one institution with the hope of being able to predict persistence from early into the college experience, and seeks to provide baseline data on persistence in colleges in Belize, linear regression is an appropriate statistical method. The outcome variable (cumulative college GPA) for this study is continuous. The data used in this study is cross-sectional. Once a culture of research in this area is practiced in Belize, and data are properly managed at both local and national levels, future studies can focus on longitudinal data that can be studied using a longitudinal approach and considering the temporal nature of student departure.

The purpose of the study and the research questions are presented here. These are followed by a description of the population, research design and data collection, data analysis, research variables, and a summary. The purpose of this predictive non-experimental research study is to use pre-existing data from the student database at EJC to examine whether there are significant relationships between students' background characteristics, precollege preparation, financial factors, and college experience with their ability to persist within their first year of college attendance.

Conceptual Framework

Chen (2008) proposed a comprehensive conceptual framework, in the study of factors affecting student persistence at institutions of higher learning, with a focus on the differential effect of financial aid on dropout risk across subgroups (ethnic and income). According to Chen, her framework integrated the best of the existing theoretical frameworks on college persistence. Borrowing from the dominant perspectives (psychological, sociological, interactionalist, economic, and organizational), she identified eight clusters of variables that are important in explaining the student dropout process: student background, educational aspiration, precollege preparation, financial factors, college experience, institutional characteristics, interaction effects, and time in college. Chen's model aimed to aid in the re-conceptualization of the student departure process from an economic perspective in addition to the other perspectives from the other disciplines. It focused not only on describing the continuing disparities in the educational attainment of different groups of students in higher education, but also directly on what can be specifically done to improve student conditions. This model aimed at explaining why a particular type of aid may be more important to one group of student than to another.

Mendoza, Mendez, and Malcolm (2009) did a study using pre-existing data to assess the effect of financial aid on the persistence of full-time students in associate's degree programs at the Oklahoma community colleges using Chen (2008) conceptual framework to frame their study. Chen's framework was chosen for this study because it

was the most current model available in the literature about the impact of financial aid on persistence and because it emphasized the differential role of financial aid packages on students in different ethnic and income groups. The study was designed to investigate the interaction of ethnicity, income, and financial aid in predicting students' success. Three different types of aid were investigated: the Federal Pell Grant (need-based), the Stafford Loan Program, and Oklahoma Higher Learning Access Program (Oklahoma's premier state grant). The findings suggested that ethnicity, income level, and financial packages interact in many ways in predicting students' persistence. The results also indicated that a hybrid program like Oklahoma's premier state grant, one focused both at meeting the needs and awarding the performance of students, is effective in promoting student persistence.

Many theoretical and conceptual models have been purported to explain the process of retention and student persistence. Tinto's (1975, 1987, 1993) Student Integration Model is the most widely known and studies model. He proposed three categories of factors that may influence students' departure from an institution: the disposition of the individuals, the character of their interactional experience, and external factors. Even though, the Tinto model was institutionally oriented and has reached near paradigmatic level (Braxton, 2000), not much attention to student of color and financial aid were made. The other widely used retention model was Bean's (1980, 1982, 1985) Student Attrition Model. Bean took a rather organizational stance to the departure process. The findings of his studies suggest that socialization is a dominant force in

influencing the dropout process. The other models, to a large extent, borrowed from these two highly quoted models. The following factors made Chen's (2008) model very different and selective in comparison to these models: it took into consideration the temporal effects of different factors on persistence and the impact of differential aid type on different groups of students (ethnic and socioeconomic status) and it includes five factors related to student dropout that have been extensively studies in previous research (student background characteristics, educational aspiration, precollege preparation, financial factors, and college experience), but not collectively as presented by Chen. Chen purported that her heterogeneous approach provided additional power to explain how students from divergent social backgrounds may behave in their dropout decisions. She added that the heterogeneous approach may be extended to studies on college success gaps, as well as policy intervention that target at narrowing inequalities in higher education.

Framed within Chen's model, this study will examine whether there are significant relationships between students' background characteristics, precollege preparation, financial factors, and college experience with their ability to persist within their first year of college attendance.

Research Questions

Framed within Chen's (2008) model, the following research questions guided this study:

1. Do statistically significant relationships exist between student background characteristics (age, gender, ethnicity, parental education level) and persistence of students at Ecumenical Junior College.

2. Do statistically significant relationships exist between precollege preparation factors (High School GPA, ATLIB scores, number of CXC passes) and persistence of students at Ecumenical Junior College.

3. Do statistically significant relationships exist between financial factors (financial aid) and persistence of students at Ecumenical Junior College.

4. *Do statistically significant relationships exist between college experience (first semester college GPA) and persistence of students at Ecumenical Junior College.*

The following null hypotheses were tested:

Null Hypothesis #1

"There is no significant relationship between the backgrounds of students at Ecumenical Junior College through their first year in college." Johnson (1999) and Clark (2004) investigated the effect of pre-college and college factors on students' persistence and dropout risk and found no significance difference in persistence between older and younger students. Leppel (2002) studied the similarities and differences in persistence of men and women and found no significant difference in persistence. Eimers and Pike (1997) investigated the differences or similarities in adjustment of minority and non-

minorities and found no significant difference in intent to persist between minority and non-minority students. Warburton & Nunez (2001) found no significant differences in the first-year college GPA for first generation students who took rigorous high school courses and scored high on their college entrance examinations.

Null Hypothesis #2

"There is no significant relationship between the precollege preparations of students Ecumenical Junior College through their first year in college." Smith (1990) noted that the combined pre-matriculation variables (high school grades, SAT scores, and parental education) account for only approximately 12% of the variance in college grades and Adelman (2004) determined that academic preparation accounted only for 17% of college completion rates.

Null Hypothesis #3

"There is no significant relationship between the financial factors of students Ecumenical Junior College through their first year in college." Contento's (1999) five-year study to investigate the relationship between student background, financial aid, and persistence indicated that financial aid did not show a significant influence on persistence and completion for the lower income nor the more affluent student.

Null Hypothesis #4

"There is no significant relationship between the college experience of students Ecumenical Junior College through their first year in college." After reviewing several studies on retention, Ishitani and DesJardins (2002) reached a conclusion that college grades were negatively related to attrition but positively related to persistence.

Population

There are 12 postsecondary academic institutions in Belize that prepare students for higher education degrees and for employment. Among these are two national universities [University of Belize (UB) and Galen University] and 10 junior colleges. UB is a public university, while Galen is private. UB has campuses in Belize City, Belmopan, and Toledo. Galen has campuses in San Ignacio, Belmopan and Dangriga. Belize Adventist Junior College, Centro Escolar Mexico Junior College, Corozal Junior College, Muffles Junior College, and San Pedro Junior College (San Pedro Island) are located in the northern part of the country. Sacred Heart Junior College is located in the western part of the country. Belize City (central) hosts both St. John's College and Wesley Junior College. Ecumenical Junior College and Independence Junior College are located in the south in the Stann Creek District.

EJC, the oldest community college in the Stann Creek District, was founded in 1986 as part of the Government's drive to make higher education accessible to people throughout the country of Belize. It was a sister school to Ecumenical College (a high

school) up to 2003 and was focused on preparing students for work and for taking the advanced level Cambridge examination. With the amalgamation of five tertiary-level institutions (the Bliss School of Nursing, Belize Technical College, Belize Teachers' College, the University College of Belize, and the Belize School of Agriculture) to create UB in 2000, and the relocation of the main office of the university to the capital city of Belmopan, EJC had acquired the added responsibility to offer lower level university courses and prepare students for smooth transfer of grades to UB. EJC, along with the other junior colleges throughout Belize, is presently dialoguing with UB, by mode of a national articulation framework, to rationalize programs for easy transfer to any of the 12 tertiary institutions within Belize. The drive for the articulation agreement began in 2007, and is presently being spearheaded by UB (A. Leiva, personal communication, June 4, 2011).

The population for this study was the 171 degree seeking first year students who enrolled fall of 2010 at EJC. These students traditionally come from the three secondary schools in the Stann Creek District: Stann Creek Ecumenical College (EC), Independence High School (IHS), and Delille Academy (DA). Of the 171 students enrolled, 103 are from EC, 18 from IHS, 36 from DA, and 14 came from a pool of 10 other high schools within Belize. The first year enrollment in 2009 was 145. Of the total of 171 enrolled students, only 148 were first-time degree seeking students, the others were recurring or have transferred from other junior colleges across the country. The data set for these 148

first-time college students is what was used in the analysis: EC, 94; DA, 26; IHS, 15; other, 13.

EC is an academically focused, public government aided institution in Dangriga Town with a current enrollment of 728. It came into existence in 1974 as a result of the amalgamation of two denominational high schools: Stann Creek High School and Austin High School. EC, up to 2003, was the sister school of EJC. IHS is an academically focused, public, full government high school located in Independence Village in the Stann Creek District. It currently has a student enrollment of 780. DA is a public, vocational, government aided high school in Dangriga Town, managed by the Catholic Church. Its current student population is 530. Two other high schools operate in the Stann Creek District: Georgetown Technical High School and the Agriculture and Natural Resource Institute. These two schools recently opened and have not yet provided students to EJC.

The age range for the student population at EJC since 2006 is 16 to 47 (Student Records, 2008), this is a dramatic change from the traditional age range of 16 to 24 seen before 2006. This change is explained by increased enrollment of in-service teachers into the education program at EJC. School records are also showing a large female to male ratio (Abstract of Education Statistics, 2008/2009). The ethnically diverse population of EJC reflects the multicultural mix of the Belizean population. The 2010 report of the national population census indicates the following population breakdown: Mestizo, 50%, Creole, 21%, Maya, 10%, Garifuna, 4.6%, and others 14.4%. The statistical report for the

Stann Creek district in 2010 is as follows: Mestizo, 30.1%, Garifuna, 23.7%, Creole, 16.3%, Maya, 14.4%, East Indian (including Hindu and Lebanese), 3%, Asian, 0.8%, and others, 11.5%. Others include Black/African, Caucasian/White, Mennonite, and mixed ethnicity groups (Statistical Institute of Belize, 2010). The breakdown of EJC population, in August 2010, by ethnicity is: Garifuna, 44.6%, Mestizo, 19.6%, Creole, 15.5%, Maya, 10.8%, East Indian, 8.8%, and Asian, 0.7%.

EJC offers associate degrees with concentration in the areas of Business, Arts, Science, General Studies, and Teacher Education or a combination of any two of these programs. Students are allowed to choose one or two majors from a total of 13: Mathematics, Computer Science, Information Technology, Biology, Environmental Science, Hospitality and Tourism Management, Management of Business, Accounting, Economics, History, Spanish, Sociology, and Primary Education.

Research Design and Data Collection

The design employed the use of school records/ transcripts/student data at EJC. The design is *ex post facto* because, while independent variables are defined, they are not manipulated (Gay, Mills, & Airasian, 2006). The researcher submitted the proposal for approval to the Institutional Review Board at Oklahoma State University (Appendix B) and also sent a request form to the Managing authority of EJC for permission to use first year college students' data for the 2010-2011 school year (Appendix C). Once approval

and permission (Appendix D) were granted and confidentiality procedures were agreed upon, the researcher began to review records and gather data.

The following data were used for this study (Appendix F): students' background characteristics (gender, age, ethnicity, and generation classification), pre-college preparation (high school GPA, Association of Tertiary Level Institutions in Belize [ATLIB] scores in English and Math, and the number of Caribbean Examination Council [CXC] exam passes), financial factors (financial aid type), and college experience (first semester college GPA). The data on students' background characteristics were available at EJC by the third week of classes. Each student at EJC is traditionally given a student personal data form to fill out at the second general assembly meetings (Appendix E). A tradition at EJC is having a general assembly meeting every Tuesday at 9:35a.m. for students, administration, and faculty to assemble to discuss school issues or host guest lecturers. The application forms that students need to submit by the end of April include information on pre-college preparation. Information on financial factors was available at the bursar's office from the end of the second week of classes. The drop/add period ends two weeks after school opens for the fall semester. All students are expected to pay their registration fees of $336 (two Belize dollars equal one U.S. dollar) by the end of the second week. Students are considered enrolled once their registration fees have been paid. The tuition cost ($28 per credit hour) can be paid by installments. Data on college experience were collected after December 2010, the end of first semester, when approval was gotten from IRB and in May 2011, the end of the school year. Therefore, information

on student factors, pre-college and college academic factors were readily available for conducting the research.

Students' data at EJC are usually stored in paper format or computerized using Excel or Word. As noted by Martinez (2009):

The delivery of information to students at EJC is very slow due to the time consuming task of entering student data into the computer. Records are mostly stored away in paper form in filing cabinets. A few data are stored in the computer in simple format (Word and Excel). Records are generally stored independently of other records for the same students (p. 6).

Data was requested in computerized format. All data collected were kept confidential. The dataset was stripped of all identifiers and was stored in a locked cabinet.

Data Analysis

A quantitative methodology (SPSS software version 19.0) was used to analyze the data. The design for this *ex post facto* research was quantitative, non-experimental focused on specifying functional relationships that can statistically predict the outcome variable from predictor variables. There are a number of important educational problems for which it is impossible or feasible to manipulate the independent variables. In the case of this study, some of the variables are organismic; the characteristic of the subject cannot be directly controlled. For example: age, gender, ethnicity, and generation

classification (Gay et al., 2006). Ethical consideration also prevents the manipulation of some variables. Despite the fact that both correlational and causal comparative research would permit the investigation of a number of variables that cannot be studied experimentally and both would facilitate decision-making, a correlational, predictive, research design would be more appropriate based on the type of data set being used.

The focus of this study was to predict a dependent, continuous variable (cumulative college GPA), from a number of independent variables (student background characteristics, pre-college preparation, financial factors, and college experience). Since part of the purpose for this study was to derive a predictive model for student persistence at EJC, using the cumulative College GPA as the outcome variable (continuous variable) instead of persistence (dichotomous variable) would aid interpretation and facilitate better decision-making. College administrators and student affairs personnel would be able to predict with high degree of accuracy students' cumulative college GPA from information on the independent variables. The value of the cumulative college GPA would also indicate whether students' are likely to persist or not persist. In this study, the cumulative GPA gave information on the persistence of students; a cumulative GPA of 2.00 or more at the end of the school year indicated that a student had persisted to the end of the freshman year and was able to move on to sophomore year in good academic standing. In this case where the dependent variable is continuous, linear regression is preferred to logistic regression.

Since the dependent variable is continuous, and there is more than one independent variable in the study, multiple linear regression technique (modeling) was preferred to simple linear regression and discriminant analysis for research questions 1 and 2. Multiple linear regressions are appropriate when the outcome variable is continuous (Dey & Astin, 1993). Simple linear regression is used when only one independent variable is used (as in the case of research question 3 and 4) and discriminant analysis can only be used with continuous independent variables. The independent variables in the study comprised of both continuous and categorical data. Frequency, bar charts and cross-tabulation were employed for the nominal data and descriptive data, histograms, and scatterplots are used for the continuous data. Additional procedures were performed to test the assumptions of regression. These included: the number of cases, accuracy of data, missing data, outliers, normality, linearity, homoscedasticity, heteroscedasiticy, and multicullinearity.

Regression is usually used with naturally-occurring variables (Abrams, 2007). The models provide quantitative ways to identify students most likely to dropout since they can calculate individual probabilities of dropping out for each student. Also an importance of this model is the ability to identify and predict persistence of at-risk students. At-risk students being defined as those students with characteristics that made them more likely to drop out of college within their first year.

Research Variables

Outcome Variable

The outcome variable in this study was continuous: used to identify students who persisted in college and those who did not. Persisters were those students who made it up to the end of school year with the minimum enrollment requirement of 2.00 that would enable them to enroll without being placed on academic probation for the next school year. Non-persisters were those students who dropped out before the end of the school year or who do not meet the minimum requirement of a GPA of 2.00 to continue in good academic standing the following school year.

Independent Variables

The following groups of variables were investigated to identify whether there are statistical relationships between them and the persistence of students in Belizean community colleges: students' background characteristics, pre-college preparation, financial factors, and college experience. The levels of measurement for gender, ethnicity, generation classification, and financial aid are categorical. Interval and ratio scales were grouped together as quantitative variables; these are age, the number of CXC passes, high school GPA, college GPA, and ATLIB scores.

Student background characteristics

- Gender: male or female (categorical variable)

- Ethnicity: Mestizo, Creole, Maya, Garifuna, Mennonite, East Indian, Asian, Caucasian, other. Mestizo was used as the reference group since this group represents the dominant ethnic group in the country (categorical variable).

- Generation classification: first generation, continuing generation (categorical variable).

- Age, a continuous variable, was determined for students as of August 23, 2010 to May 16, 2011.

Pre-college Preparation

- Number of CXC passes: (continuous variable)

  CXC provides a range of grades: I through VI. Only grades I to III are considered pass at all junior colleges in Belize. At EJC the number of CXC passes is important for decision-making. Having six or more CXC enables a student to choose his or her college major. Six or more CXCs also qualify them for a government tuition grant.

- ATLIB scores (continuous variable)

  ATLIB scores are given to students and schools as raw scores. EJC accepts a minimum of 60 for English and 55 for Math. Students with these grades, or above, are enrolled directly into college level courses. Lower grades on ATLIB require students to take remedial English and/or Math courses before getting into college level courses.

- High school GPA (continuous variable).

Financial factors

- Financial aid: Government tuition grant (MOE), Development Finance

  Corporation (DFC) loans, sponsor, and work study

  Tuition grant amount is dependent on the number of credit hours a student is

  taking within a semester. Therefore, each student may not get the same amount.

  Loan amounts may also vary; they are normally need-based. Work study at EJC

  allows for the cancellation of bills; whether tuition, registration, or both.

  (categorical variable)

College Experience

- College GPA (continuous variable)

Summary

Chapter 3, methodology, includes population, research design and data collection, and data analysis. The student population consisted of 148 first-year degree seeking students who enrolled at EJC in the Fall of 2010. Descriptive statistics and statistical modeling were performed for the *ex post facto*, predictive research design. Chen's (2008) conceptual framework, used to guide the study, posited that understanding the differential effects of different types of aid across race/ethnic and income levels and

student dropout decision can eventually aid in decision making focused at improving

student conditions. The data were extracted from the student database at EJC to conduct

the descriptive and univariate analyses (linear regressions) using SPSS version 19.

CHAPTER IV

RESULTS AND DATA ANALYSIS

The results and analysis section of this study is presented in two sections. Data were analyzed to determine if significant relationships exist between students' background characteristics, precollege academic preparation, financial aid, and college experience with their cumulative college grade point average (CCGPA). CCGPA determined students' persistence or non-persistence. The Statistical Package for the Social Sciences (SPSS), version 19.0 for Windows was used for the analysis of the data. The first section analyzed descriptive data on the 148 first-time, degree seeking college students at the Stann Creek Ecumenical Junior College (EJC). Descriptive analysis methods used included frequencies, means, standard deviations, and cross-tabulations. During the analysis, special attention was paid to the distribution and variation of variables by feeder schools. A total of 171 students enrolled at EJC in August 2010. Twenty three of these were students who had been previously enrolled (recurring) at EJC or transferred from other junior colleges hence they were not included in the analysis. The second section analyzed the predictive relationship between variables in the research questions using regression analysis techniques. Tables are also used to aid in discussing the results and analysis. This chapter ends with a summary of the findings.

Descriptive Data Analysis

This first section provides a descriptive analysis of the selected categories of predictor or independent variables: student background characteristics (gender, age, ethnicity, and generation classification), precollege preparation (high school GPA, ATLIB scores, and number of CXC passes), financial factors (type of financial aid), and college experience (college GPA) from the major feeder schools in the Stann Creek District. Descriptive statistics provided means, percentages and frequency distributions on the factors identified. Of the 148 first- time, degree seeking freshmen enrolled at EJC, 94 (63%) were from EC, 26 (18%) from Delille Academy, 15 (10%) from Independence High School, and 13 (9%) from other junior colleges in Belize (Figure 2). Table 1 presents the student background characteristic variables used in the analyses. Table 2 presents the precollege factors. Table 3 presents financial actors and Table 4, college experience.

Figure 2: Percentage Population Breakdown of Fall 2010 First-time, Degree Seeking, Full-time Students at EJC by Feeder schools
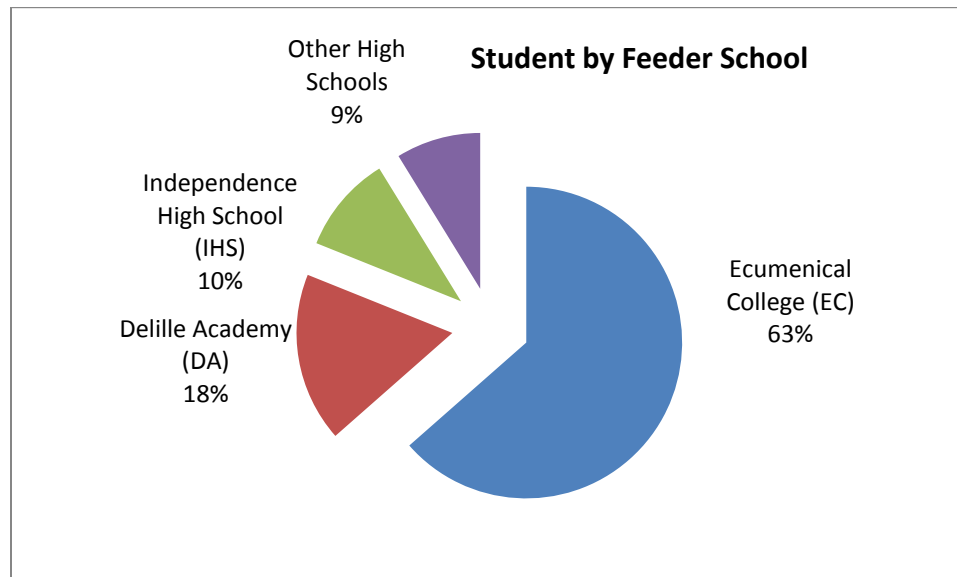
The frequency of the student background variables used for the first-time degree seeking freshman in this study was as follows: 73% were between the ages 16 and 19 suggesting that the sample largely represented traditional college students; females represented 59% of the population, which is consistent with the patterns presently seen in Belizean postsecondary institutions; Garifuna comprised the majority of the ethnic group at 44.6%, followed by Mestizos at 19.6%, Creoles 15.5%, Mayas 10.8%, East Indians 8.8%, and Chinese 0.7% ; 48% were first generation students, 52% have parents or siblings who had entered college.

The majority of the students from EC and IHS were traditional aged students, while those from DA were older. More first generation students were from DA than the other schools. EC and IHS showed relatively equal ratios of males and females. DA showed a stark disparity in gender, with 23 females and only 3 males. The dominant ethnic groups at the feeder schools were Garifuna for EC and DA and Maya for IHS. Mestizo was the second largest ethnic group at EC. While the national population showed that Mestizo is the dominant ethnic group in the country, the student population results complement the dominance of the Garifuna population in Dangriga Town.

Table 1

Independent Variable: Student Background Characteristics

Variables	Ecumenical College	Delille Academy	Independence High School	Other High Schools	Total	Percentage (%) of Total
Age						
16-19	84	8	10	6	108	72.97
20-24	6	15	3	4	28	18.92
25-29	2	2	2	2	8	5.41
30-34	1	1	0	0	2	1.35
35+	1	0	0	1	2	1.35
Total	94	26	15	13	148	100
Gender						
Male	46	3	8	3	60	41
Female	48	23	7	10	88	59
Total	94	26	15	13	148	100
Ethnicity						
Garifuna	39	17	4	6	66	44.6
Creole	14	6	1	2	23	15.5
Maya	7	0	9	0	16	10.8
Mestizo	23	2	1	3	29	19.6
Chinese	1	0	0	0	1	0.7
East Indian	10	1	0	2	13	8.8
Total	94	26	15	13	148	100
Generation Classification						
First (Yes)	42	16	6	7	71	48
Other (No)	52	10	9	6	77	52
Total	94	26	15	13	148	100

Table 2 shows the breakdown of the precollege preparation variables for the feeder high schools. The mean score of the variables were as follows: high school GPA, 2.61; ATLIB English scores, 57.82 and ATLIB Math scores, 53.28.

Relative to the number of students from each feeder school, it was noted that 51% of students from EC had high school GPA below 2.50 and only 49% had a GPA of 2.50 and above, 46% of the DA students got a GPA below 2.50, 54% got a GPA of or above 2.50. Only 7% of the students from IHS got a GPA below 2.50, 93% got GPA at or above 2.50. Fifteen percent of the remaining students (from the other community colleges) enrolled with GPAs below 2.50, 85% had GPAs at or above 2.50. From a total of 105 students who sat the ATLIB exams, 45.7% got scores of 60 or above, the remaining 54.3% got scores less than 60. A total of 47.6% of the students got 55 or more on the ATLIB Math exam and 55.4% got grades less than 55. A total of 61.5% of the new first-time students came with six or more CXC passes. In comparison to all the other high schools, students from EC had lower high school GPA, but they performed better in both ATLIB and CXC examinations.

Table 2

Independent Variable: Precollege Preparation

Variables	Ecumenical College	Delille Academy	Independence High School	Other High Schools	Total	Mean Score $\bar{X}$
High School GPA						
2.00 - 2.49	48	12	1	2	63	
2.50- 2.99	29	9	12	10	60	2.61
3.00- 4.00	17	5	2	1	25	
Total	94	26	15	13	148	
ATLIB English Score						
< 60	28	13	8	8	57	57.82
$\geq$ 60	39	5	3	1	48	
Total	67	18	11	9	105	
ATLIB Math Score						
< 55	32	15	3	5	57	53.28
$\geq$ 55	35	3	8	4	48	
Total	67	18	11	9	105	
Number of CXC passes						
< 6	12	24	10	11	57	
$\geq$ 6	82	2	5	2	91	
Total	94	26	15	13	148	

Table 3 shows that 62.8% of the students received the Ministry of Education tuition scholarship, 11.5% got sponsored from private sources, 4.1% got loans from the Development Finance Corporation (DFC), 21.6% were self-sponsored (no scholarship), and none were on work scholarship. A total of 78.4% of the sample population had some form of financial assistance upon enrollment at EJC. The majority of students from EC and IHS got assistance from MOE. Most of the DA students did not receive any form of financial assistance. Financial aid from MOE is based primarily on a student's number of CXC passes. The resulting breakdown of the type of aid demonstrated that financial aid to students entering EJC is predominantly merit-based. Noteworthy is that financial factors may not be a major issue for students from EC and IHS, but may impact more specifically students from DA and the other high schools, hence the need for need-based assistance.

Table 3

Independent Variable: Financial Factors

Variables	Ecumenical College	Delille Academy	Independence High School	Other High Schools	Total	Percent
Financial aid						
DFC	1	3	2	0	6	4.1
MOE	75	6	8	4	93	62.8
sponsor	6	4	3	4	17	11.5
none	12	13	2	5	32	21.6
Total	94	26	15	13	148	100.0

Table 4 shows the breakdown of college experience for the feeder high schools. The mean score for first semester college GPA was 2.17. A majority of the students from EC (76%) and IHS (60%) had GPAs greater than 2.00. A total of 50% of DA students got GPAs less than 2.00 and 63.6% of the students from the other high schools got GPAs below 2.00. When comparing the college experience with what the students bring in terms of pre-college preparation, notable is the generally low high school GPAs for students from EC in comparison to students from the other high schools, yet these students earn high first semester college GPA, and consequently have higher persistence. Special notice was that over 50% of DA students came with high school GPAs over 2.50, but 50% of these students failed to achieve a 2.00 GPA by the end of semester one.

Table 4

Dependent Variable: College Experience

Variables	Ecumenical College	Delille Academy	Independence High School	Other High Schools	Total	Mean Score $\bar{X}$
College GPA						
< 2.00	22	13	6	7	48	2.17
2.00-2.49	37	9	7	3	56	
2.5+	35	4	2	3	44	
Total	94	26	15	13	148	

The dependent variable, cumulative college GPA was measured as a continuous variable, and it was used as an indicator of students' persistence at EJC. Persistence was

referred to as the action of students in staying at EJC from the beginning of the school

year (August 2010) to the end (May 2011) with a GPA of at least 2.00. A cumulative

college GPA of 2.00 or above translates to "persisting" and cumulative college GPAs less

than 2.00 translates to "non-persisting." At the end of the first semester, 78% (116 out of

148) students persisted. At the end of second semester, 84% (97 of 116) of the students

were in good academic standing. This means that they met the academic requirement

(GPA of 2.00 or above) necessary to enter second year. Figure 3 shows the persistence

pattern for the students at EJC for the school year 2010-2011. Thirteen students did not

persist to semester two from EC, 9 from DA, 3 from IHS, and 7 from the other feeder

schools. At the end of the semester, two students had withdrawn and 17 did not get a

GPA of 2.00; these students were considered non-persisters in this study. The total

persistence rate for the first year degree seeking students for the school year 2010-2011

was 66%; 97 of 148).

Figure 3: Student Persistence Pattern
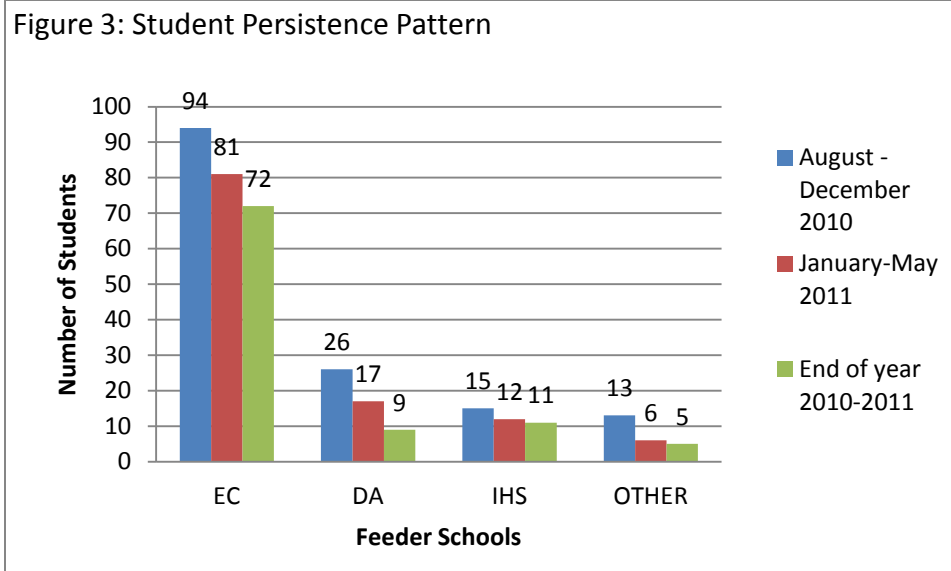
Table 5 shows the breakdown and reasons for students' leaving from the various high schools: more students from EC discontinued due to academic reasons, while more students from DA and IHS dropped out for other reasons. In relation to the total population, dropping out was highest (53.8%) in students from high schools other than EC, DA, and IHS. This finding requires further research into the characteristics of the groups of students who enrolled at EJC from high schools other than the three major feeder schools. Among the three main feeder institutions, DA showed the highest non-persistence rate of 34.6%.

Table 5

Students who do not Persist at EJC (by Categories)

Feeder School	Academic failure	Dropout/Stopout/ transfer	Number of dropouts	Percent (%) of total enrollment
EC	9	4	13	13.8
DA	4	5	9	34.6
IHS	1	2	3	20.0
Other	5	2	7	53.8
Total	19	13	32	

Summary of Descriptive Data Analysis

Descriptive statistics show that at the end of semester one, two-thirds of the first-time degree seeking students enrolled in Fall 2010 were in good academic standing, the remaining students were either on probation or have dropped out. Dropping out was more notable in DA students and high schools other than EC and IHS. The population comprised of predominantly Garifuna students, traditionally-aged, and mostly females. There was a balance in the number of first and continuing generation students. EC had the highest college GPAs mean score. Over three-fourths of the enrolled first year students had some form of financial assistance upon enrollment at EJC.

Regression analyses

Predicting the relationship between persistence, students' pre-matriculation, and college factors was the focus. The purpose of this *ex post facto* study was to determine the relationship between student background characteristics, pre-college academic factors, financial factor, and college experience with student persistence at EJC and the extent to which these variables can be used to predict persistence.

Research Questions

Four research questions were used to determine the relationship between student background characteristics, pre-college academic factors, financial factor, and college experience with student persistence at EJC:

1. Do statistically significant relationships exist between student background characteristics (age, gender, ethnicity, parental education level) and persistence of students at Ecumenical Junior College.

2. Do statistically significant relationships exist between precollege preparation factors (High School GPA, ATLIB scores, number of CXC passes) and persistence of students at Ecumenical Junior College.

3. Do statistically significant relationships exist between financial factors (financial aid) and persistence of students at Ecumenical Junior College.

4. Do statistically significant relationships exist between college experience (first semester college GPA) and persistence of students at Ecumenical Junior College.

Tests for the Assumptions of Regression

The first step in the analysis was to test for the assumptions of regression. The number of cases was far more than the ideal case-to-independent variable ratio of 20:1. The dataset was an established dataset exported from Excel. All cases that do not have values for the variables used in the regression were not included. The assumptions of normality, linearity, and homoscedasticity were met based on the outputs from the histogram, normal probability plot, and the plot of the residuals (see Figures 4-1, 4-2, 4-3), and multicollinearity was not a problem since none of the independent variables reached a correlation of .90 or higher, also the tolerance values were higher than .1 and the VIF scores were very low (far lower than 10).

Figure 4-1 *Test for the Homogeneity of Variance using a Histogram*

Histogram

Dependent Variable: Cumulative CGPA

Mean = 1.96E-15
Std. Dev. = 0.908
N = 58
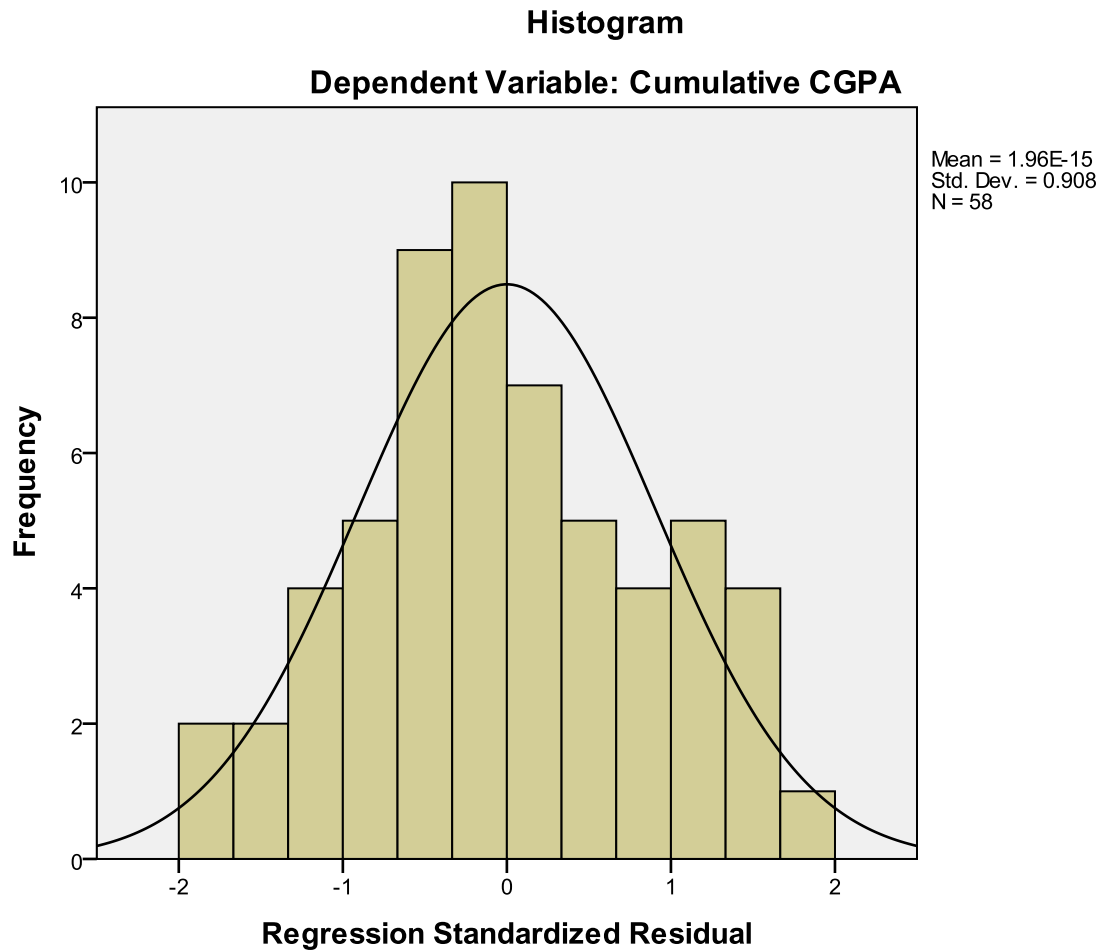
The histogram above shows that the distribution was normal based on the line used to depict the shape. Therefore, the assumption of normality was met.

Figure 4-2 *Normal Probability Plot*

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Cumulative CGPA
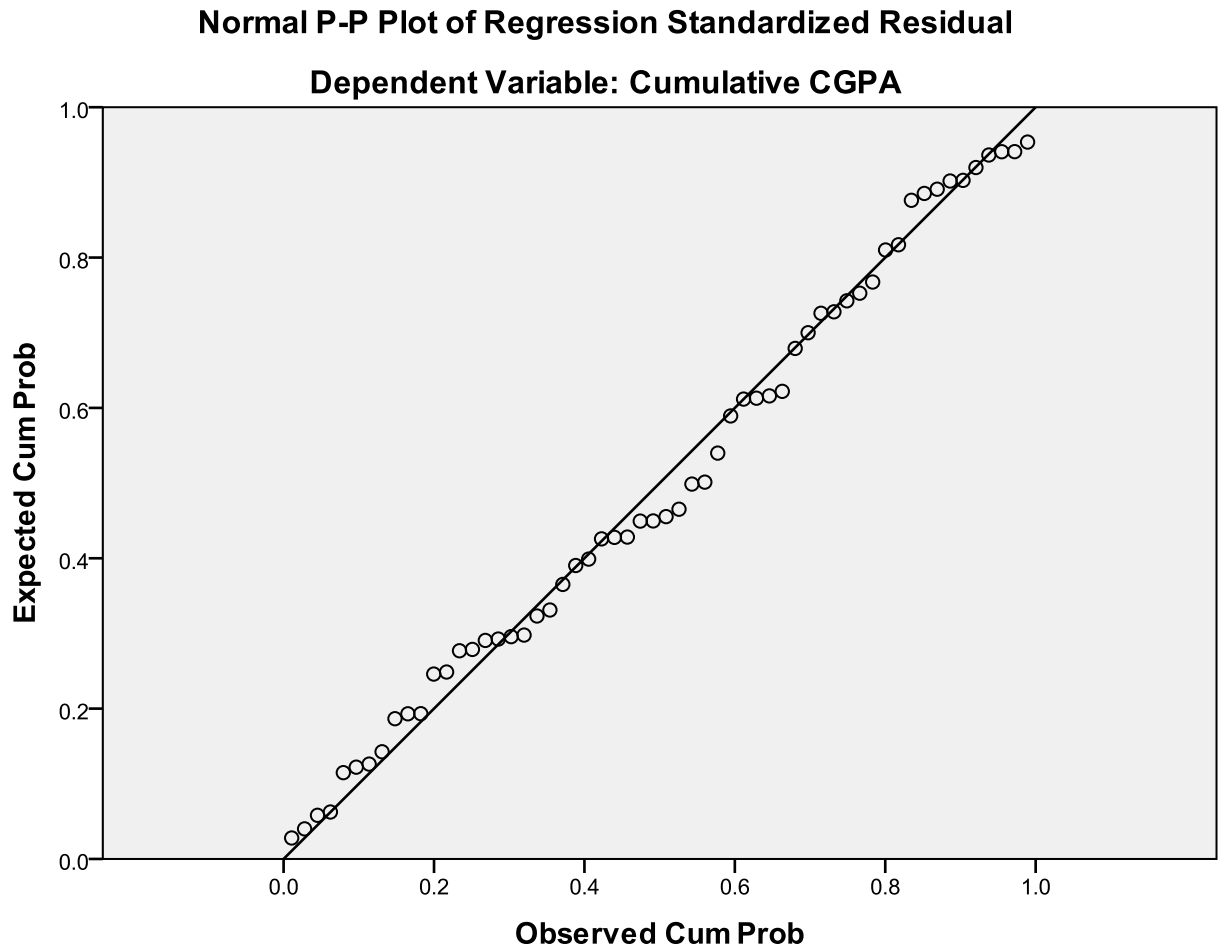
The actual values line up along the diagonal that goes from lower left to upper right. This plot also indicates that the distribution is normal. Normally distributed data also lesson the problems of heteroscedasticity.

Figure 4-3 Plot of the Residual

Scatterplot
Dependent Variable: Cumulative CGPA
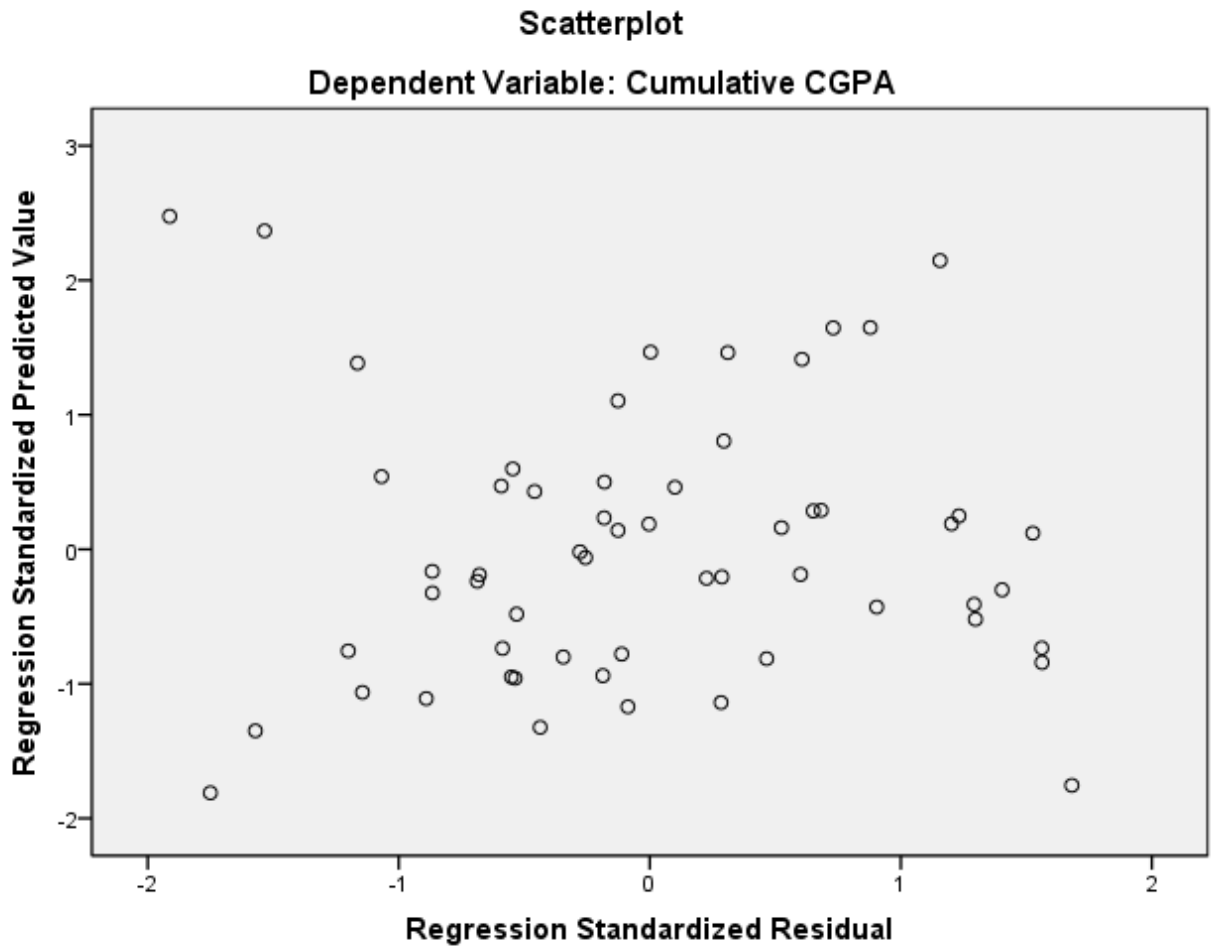
The residual looks somewhat rectangular, with a concentration of points along the center and a few trailing off symmetrically from the center. This plot was used to test for and show that the assumptions of normality, linearity, and homoscedasticity were met.

Relationship between Student Background Characteristics and Persistence

   Research question one sought to determine whether statistically significant relationships exist between student background characteristics (age, gender, ethnicity, generation classification) and persistence of students at a selected community college in the Stann Creek District. The null hypothesis examined was: "There is no statistically significant relationship in student background characteristics and their persistence at a selected Belizean community college." The cumulative college GPA, a continuous variable, was the dependent variable in the multiple linear regression analyses while student background characteristics served as the independent variables. Students who earned cumulative college GPAs of 2.00 or above were considered to have persisted in college. Students earning less than 2.00 were considered not to have persisted.

   The multiple linear regression explains 7.4% of the variance in the data (R Square = .074), that is, how much the variance of cumulative college GPA was accounted for by student background characteristics (Table 6-1). This result indicates a weak relationship between student background characteristics and persistence.

Table 6-1

Model Summary of Regression Analysis for Hypothesis #1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271	.074	.040	.467

The predictive power of the model was marginal ($\alpha = .078$). The F test was not significant at $\alpha = .05$. This indicates that there is a between 5-10% probability that there is not a significant relationship between cumulative college GPA and student background characteristics.

Table 6-2

Model Summary ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.884	4	.471	2.163	.078[a]
Residual	23.735	109	.218		
Total	25.618	113			

The result of the regression revealed that age, when controlling for the other variables, was the only significant predictor (B = .023, $p = .045$). Relationship between age and cumulative college GPA was positive. This indicated that for one unit increase in

age, the cumulative college GPA increased by 0.191 units. Impact of age on cumulative

college GPA was small as indicated by the small B value.

Table 6-3
Model Summary Coefficients

	Model	Unstandardized Coefficients		Standardized Coefficients		
		B	Std Error	Beta	t	Sig.
1	(Constant)	2.195	.341		6.430	.000
	Gen. class.	-.106	.088	-.112	-1.207	.230
	Gender	-.096	.090	-.099	-1.061	.291
	Ethnicity	.052	.035	.139	1.483	.141
	Age	.023	.011	.191	2.025	.045

Relationship between Pre-college Preparation Factors and Persistence

Research question two sought to discover whether statistically significant

relationships exist between precollege academic factors (High School GPA, ATLIB

scores, number of CXC passes) and persistence of students at a selected community

college in the Stann Creek District. The null hypothesis was "there is no statistically

significant relationship between pre-college preparation and student persistence at a

selected community college in Belize." The cumulative college GPA, a continuous

variable, was the dependent variable in multiple linear regression analyses and precollege academic factors were used as the independent variables.

R Square value = .333, indicating that approximately 33% of the variance of cumulative college GPA was accounted for by the model. Such variance indicated a moderate relationship between pre-college preparation and persistence.

Table 7-1
Model Summary of Regression Analysis for Hypothesis #2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.577	.333	.283	.377

The predictive power of the model was significant ($\alpha < .05$). Therefore, the model was able to predict cumulative college GPA at a rate better than chance; there was only a 5% chance that a relationship does not exist between cumulative college GPA and pre-college preparation factors.

Table 7-2

Model Summary ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3.756	4	.939	6.622	.000
Residual	7.515	53	.142		
Total	11.271	57			

Result of the regression revealed that only high school GPA was significant when controlling for the other variables. Impact of high school GPA on cumulative college GPA was large as indicated by a large B value (B = 0.682). The relationship between high school GPA and cumulative college GPA was positive. This shows that for a unit increase in high school GPA, cumulative college GPA increased by 0.593 units.

Table 7-3
Model Summary of Coefficients

	Model	Unstandardized Coefficients		Standardized Coefficients		
		B	Std Error	Beta	t	Sig.
1	(Constant)	.425	.480		.886	.380
	HS GPA	.682	.170	.593	4.022	.000
	ATLIB Engl	.012	.007	.210	1.674	.100
	ATLIB Math	-.008	.005	-.225	-1.544	.128
	# of CXC	.001	.041	.002	.015	.988

Relationship between Financial Factor and Persistence

Research question three revealed whether statistically significant relationships exist between financial factors (financial aid) and persistence of students at a selected community college in the Stann Creek District. The null hypothesis examined in this section was: "There is no statistically significant relationship between financial factors and student persistence at a selected community college in Belize." The cumulative college GPA, a continuous variable, was the dependent variable in simple linear regression analyses. Persisters were students who earned a cumulative college GPA of 2.00 or above while financial factor served as the independent variable.

The linear regression explained 2.3% of the variance of cumulative college GPA in the model (R Square = .023), thus indicating a very weak relationship between cumulative college GPA and financial factors.

Table 8-1
Model Summary of Regression Analysis for Hypothesis #3

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.152	.023	.014	.473

The F test, at $\alpha = .05$, was not significant. Therefore the predictive ability of the model was very low with greater than 10% probability that there was not a relationship between cumulative college GPA and financial factors.

Table 8-2
Model Summary ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.590	1	.590	2.641	.107
	Residual	25.028	112	.223		
	Total	25.618	113			

Financial factor was not a significant predictor of cumulative college GPA, and hence, persistence. The impact of financial factors on cumulative college GPA was very weak as indicated by a very low B value (B = -0.103). The direction of the relationship was negative.

Table 8-3
Model Summary of Coefficients

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std Error	Beta		
1	(Constant)	2.777	.155		17.912	.000
	Financial aid	-.103	.063	-.152	-1.625	.107

Relationship between College Experience and Persistence

Research question four revealed whether statistically significant relationships exist between college experience (College GPA) and persistence of students at a selected community college in the Stann Creek District. The null hypothesis examined in this section was: "There is no statistically significant relationship between college experience and student persistence in a selected Belizean community college." The cumulative college GPA, a continuous variable, was the dependent variable in simple linear regression analyses and college experience was used as the independent variable.

R Square value = .651 indicating that approximately 65% of the variance of cumulative college GPA was accounted for by the first semester college GPA. This indicated a strong relationship between first semester college GPA and cumulative college GPA.

Table 9-1
Model Summary of Regression Analysis for Hypothesis #4

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807	.651	.647	.283

The predictive power of the model was significant ($\alpha < .05$) indicating a 95% probability of a relationship between first semester college GPA and cumulative college GPA. The model was able to predict cumulative college GPA at a rate better than chance.

Table 9-2
Model Summary of ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	16.665	1	16.665	208.460	.000
Residual	8.954	112	.080		
Total	25.618	113			

The result of the regression indicated that the relationship between first semester college GPA and cumulative college GPA was positive. The B value (0.776) was very high indicating that first semester college GPA had a high impact on cumulative college GPA.

Table 9-3
Model Summary of Coefficient

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std Error**	**Beta**	**t**	**Sig.**
1 (Constant)	.658	.133		4.954	.000
1st sem CGPA	.776	.054	.807	14.438	.000

Result of Linear Regression Analysis

The results of the linear regression analyses show that age, high school GPA, and first semester GPA were significant in predicting students' cumulative college GPA, and by extension their persistence in college (R Square = .666, $p < .05$, and $\alpha = .05$).

Stepwise regression analysis shows that age was not significant when controlling for high school GPA and first semester college GPA. Therefore, high school GPA and first semester college GPA were found to be the two best predictors of cumulative college GPA and persistence of students at EJC.

Summary of Regression Analyses

The focus of this study was to determine the relationship between student background characteristics, pre-college preparation factors, financial factors, and college experience with student persistence at a selected community college in the Stann Creek District. Pre-existing data were collected, and using an *ex post facto* design, descriptive statistics and regression analyses were used to answer the research questions. The results of the analysis showed that first semester college GPA was the best predictor of student cumulative college GPA, and by extension, their persistence in college. High school GPA was the next best predictor of persistence.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS FOR POLICY AND PRACTICES,
AND RECOMMENDATIONS FOR FUTURE RESEARCH AND PRACTICE

Despite the fact that retention and persistence research have been developing in

the last 30 years, no such study has been conducted in community colleges in Belize.

Many persistence studies have focused on traditional-aged students attending four-year

colleges. This study attempted to fill the gap of the lack of informed data on factors

affecting students' persistence in two-year community colleges in Belize. In this final

chapter are four sections: a summary of the purpose of the study, the literature review,

methodology, and the findings; section two presents the conclusions drawn from the

analysis of the data. The third section highlighted the implications for policy and

practices; and the final section provides recommendations for administrators and

policymakers, and for future research.

Summary

The main purpose of this predictive, *ex post facto* study was to determine the

relationship between student background characteristics, pre-college preparation,

financial factors, and college experience and persistence at a selected community college

in the Stann Creek District, Belize, Central America. In addition, the extent to which the

characteristics stated above predict student persistence was also investigated. Chen's

(2008) conceptual framework was adapted to guide the study. Chen purported that her heterogeneous approach provides additional power to explain how students from divergent social backgrounds may behave in their dropout decisions. Linear regression techniques were employed in the analyses. The database used in the study was that of the 2010-2011 cohort of degree seeking students, enrolled at Ecumenical Junior College (EJC) in the Stann Creek District.

The knowledge of factors affecting college success, and understanding the processes how these play out throughout the college experience, aid educational stakeholders to propose and implement policies and strategies aimed at improving persistence of students in postsecondary institutions (Seidman, 2005a). No formal study has been conducted in Belize; therefore, the review drew largely from work done in the United States. The review of selected research and literature presented two dominant models in the study of student persistence and retention: developmental theories/models and college impact models; these provided the ground work for the many retention studies that have been performed in the last three to four decades. Noted also were the many demographic differences between students traditionally enrolled at four-year institutions and those now seen in two-year community colleges. Many factors have been identified as having substantial effect on students' retention and persistence at two-year community colleges. These include age, gender, ethnicity, high school grade point average, standardized test scores, financial aid, parental education status, and college experience.

Findings of Study

Listed below are five major findings and the concluding remarks that suggested some direction for actions:

#1.

Almost 50% of students entering two-year colleges and more than 25% of those entering four-year institutions in the United States leave before or by the end of their first year (Tinto, 1993; Barth, Haycock, Huang, & Richardson, 2001). At EJC, the majority of the non-persisting students also depart by the end of the first semester in college: a total of 32 at the end of semester one and 19 at the end of semester two. Among the three major feeder schools, DA students had the highest level of non-persistence, 34.6%. The findings also showed that DA students tend to be older, more likely to be first generation, predominantly females, Garifuna, less likely to get financial assistance, and have low or no ATLIB and CXC passes.

Bean and Metzner (1985) posited that older students are more likely to drop out due to one or more of the following reasons: academic performance, intent to leave, previous performances and educational goals, and environmental variables. These students are also more likely to have family and financial obligations that restrict their involvement in college life (St. John, Carter, Chun, & Musoba, 2006; Tinto, 1975, 1987, 1993; Bean, 1980; Byun, 2000). Ishitani (2003) noted that the persistence rate of first-generation students is, on average, lower than those of continuing generation students.

Hagadorn, Maxwell, and Hampton (2001), in examining what variables would predict academic success and retention among African American females, concluded that African American females face many impediments in their success and that they are more likely to leave college. Females are also predicted to leave college because of personal and family reasons (Bradburn, 2002; Mohammadi, 1996). There are many reasons for disparity in the performance of ethnically distinct students; one reason is that many minority students are academically unprepared for college (Seidman, 2005a). High school attributes have been found to influence persistence (Barefoot, 2000; Ishitani, 2006; St. John, 2001). Results of studies on the effect of student aid have also found that financial assistance is effective in compensating for the disadvantage of low income (St. John, 1990; Paulsen & St. John, 2002; St. John & Starkey, 1994).

Based on the literature, DA students are highly at-risk of dropping out compared to those students from the other two high schools, therefore retention initiatives should be directed towards them from the beginning of their enrollment at EJC. According to Seidman (2005a), when once at-risk students are identified, the institution can begin to target these students with intervention strategies. The surprising finding about DA students is that their high school GPAs were high, but their college GPAs were low. Therefore, a stark disparity was seen in their academic preparation in high school and their college performance. The majority of the dropouts from this group of students, based on the descriptive statistics, also dropout for other reasons than academic.

#2.

Among the four factors of student background characteristics (Gender, ethnicity, generation classification, and age), only age was found to be significant when taking into consideration the entire first-year study population. The relationship was positive; the older a student is, the more likely he or she will get a higher cumulative GPA and more likely to persist. This finding supports the literature that suggests that older students are more focused, show stronger commitment to learn, and achieve higher college GPAs than traditional-aged students (DesJardins, Ahlburg & McCall, 2002; Hagedorn, 2005; Cofer & Somers, 2000). Retention initiatives, therefore, should be focused on providing support systems (such as academic advising and counseling) for younger students to encourage their persistence in college.

#3

Among the precollege academic preparation factors (high school GPA, ATLIB English scores, ATLIB math scores, and number of CXC passes), only high school GPA was found to be significant. This finding supported the result of an ACT (2004) study that found high school GPA to be the strongest pre-collegiate predictor of college retention. Feeder schools, therefore, must ensure that they are providing students with quality high school academic content in preparation for college level courses.

#4

Financial factors (types of financial aid) were found not to be significant in predicting persistence at EJC. Actually, 78.4% of the total study population had some form of financial assistance. The finding is similar to that of Contento (1990) whereby he found that financial aid did not show significant influence on persistence and completion for both lower income and more affluent students. One notable feature in the study was that the types of assistance were mostly merit-based.

#5

The first semester college GPA, for college experience, was found to be the best predictor of persistence. This was followed by high school GPA. This indicated that students' academic success in high school and college are the major determinant of their persistence throughout their first year in college. For EJC, high school GPA and first semester college GPA can be used to accurately predict the persistence of future first year students about two-thirds of the time ($R2 = .666$). The best predictor of persistence was first semester college GPA. This finding was supported by Pascarella and Terrenzini (2005) in their review of literature on how college affects students. They agreed that college grades may be the single best predictor of students' persistence, degree completion, and graduate school enrollment. This findings have implications for policies within the institution. Early alert systems, academic tutoring, and counseling can be

implemented to encourage better academic performance within the first semester of college.

Conclusion

The focus of this study was to determine the relationship between student background characteristics, precollege academic preparation, financial aid, and college experience with their persistence at EJC and to indicate the extent to which these variables can be used to predict persistence. The data analyses reveal that statistically significant relationships exist.

The descriptive analyses revealed that 66% of students enrolled fall of 2010 at EJC persistence up to the end of the school year. Among the three feeder schools, non-persistence was highest in DA students. Reasons for non-persistence were not only academic; students leave for academic reasons and for other reasons. The freshman population was diverse and mostly traditionally aged. Garifuna students make up 44.6% of the entire population. Merit-based aid was abundant, 78.4% of the entire student body enrolled with some form of financial assistance. Students form EC and IHS enrolled with better precollege academic attributes than students from DA and the other high schools. They also show better college academic performance. There were not large disparities in the gender and generation status of the enrolled first year students.

The results of the linear regression analysis indicated that the best predictor of persistence at EJC were first sememster GPA, high school GPA, and age. Persisters were those students whose cumulative GPAs were 2.00 or above at the end of their first year in

college. When these variables were used alone, age was not significant and the linear regression accounted for 66.6% of the variance in the data. This indicated that first semester and high school GPAs have the biggest impact on the cumulative GPA (and, by extention, student persistence). Retention efforts by EJC personnel should therefore be determined mostly by information gathered on these two variables.

Implications for Policy and practices

The persistence of students in college is important to all institutions of higher education. There are many answers to the question of why our students are leaving our colleges, many of which are supported by research. This study is showing that students' academic preparations are the best predictors of their persistence in college. Despite popular answers and recommendations and significant efforts on recruitment and enrollment, students still continue to depart in alarming numbers. This trend is evident throughout colleges in Belize. Higher institutions, of recent, have aggressively sought to recruit students from all across the country. It is common in Belize for enrollment and admission officers to travel across districts and towns to recruit new students to their colleges, but nothing much is in place to retain those students or encourage their persistence.

According to Dennis (1998) retention management is more important than enrollment management because it provides a greater measure of school success. He added that retention management accounts for 75% of a school's population and most of

its tuition revenues. He also supports the notion for retention management to be a primary component of enrollment management. For Belize, strengthening retention practices and encouraging persistence of students would be of upmost importance for improving college attendance and completion and also the economic development of the country. Belize is a small and young nation. It is going through many changes in its economic and educational policies as it positions itself for participation in the global society. The 2010 Population and Housing Census Report indicated that 88000 of Belize's population are enrolled in formal education and only 7400 are enrolled at tertiary institutions. Noteworthy also is that the total population of the Stann Creek District is 31, 514 and only 373 of this number accounted for students enrolled in tertiary education (Statistical Institute of Belize, 2010).

Many studies have been done on persistence and retention of students at both two and four-year community colleges, but none such studies have been attempted in Belize despite the fact that Belize's unique identity and history have impacted education at all levels (Bennett, 2008). Community colleges have been noted to enroll students of diverse backgrounds (Cohen & Brawer, 2003). This unique nature of community college students, the low enrollment of students at postsecondary institutions in Belize, and the need for economic development all point to the urgent need for retaining students and understanding the factors that may influence their persistence. Many factors have been proposed to influence persistence of students in college. These include student background, precollege preparation, financial factors, and college experience, among

others. Retention efforts are a vital necessity for the enhancement of post-secondary education in Belize; not those formulated based on a generic model, but more focused at the individual and meeting the unique needs of all students.

<center>Recommendation</center>

Recommendation for Policy

Many variables have been found to influence student persistence. This study found that age, high school GPA, and college first semester GPA were the best predictors of persistence. The descriptive statistics also revealed that students come to college with diverse needs and backgrounds; therefore, a comprehensive program of services must be developed to help in student persistence. Appropriate intervention strategies and policies should also be focused at the individualized needs of the students. The following recommendations may aid in increasing student persistence:

1. In Belize, a nation with a mixture of people of diverse origin, higher education institutions must look at diverse solutions when trying to meet the expectations and needs of students and when implementing retention strategies. The profiles of the students from the different high schools were different. Delille students were found to be more at risk in comparison to the other two feeder high schools. For example, students from DA were less likely to get financial assistance from MOE since aid was predominantly merit-based and these students were also less likely to take standardized tests. Therefore, DA students tend to be underprepared

<center>130</center>

for college and more likely to depart before or by the end of the school year. Policymakers and institutional practitioners should focus on strategies to improve educational opportunities to the diverse groups of students who attend community colleges. At the same time, these strategies should be focused at addressing the needs of individual students. Attention should also be focused at subgroups of the major ethnic groups of Belize to persist in college.

2. The level of academic engagement of students should be increased through healthy dialogue established with secondary schools to aid in planning the transition from high school to college. Such a relationship can also aid to boost college aspiration. A stark disparity was notable between the high school preparedness and the college performance of students from DA. Students and EC and IHS showed more consistency in their academic performance at both levels. A traditional orientation program can be strengthened by including senior high school teachers in the planning. Services directed at improving students' academic integration should also be implemented early into the college experience.

3. Implementing intervention programs such as advising, mentoring, tutoring, and early alert and monitoring will require training for staff in identifying at-risk students and in being able to refer students to the appropriate services. The model derived from the study can be used in student identification. Special programs should also be developed to aid minority student in persisting in college.

4. Properly implementing a successful retention program requires the understanding of pertinent factors; pre-collegiate, institutional, and environmental and how these interplay in influencing students persistence decisions. The nature and types of data available at postsecondary institutions may either allow or impede the development of important studies that can aid to facilitate informed decision-making. Implementing a system of accountability, for example by creating a proper data management system, should be implemented. Staff should also be trained in customer service and to use the new system as it is developed.

5. The institution should also implement an exit interview process whereby students who are leaving or have dropout are interviewed to shed light on their reason for departing. An exit interview would provide institutional practitioners with first hand insight into the student exit process. It is fitting to say that only the student who is planning to leave or who has left college can give proper explanation of his or her school leaving decisions.

6. Both government and institution need to increase the amount of need-based assistance. Most financial aid given to students at the governmental, institutional, and societal levels in Belize are merit-based. Financial aid has been said to be an equalizer of educational opportunity. Its availability has enabled the attendance of groups of students who never would have afforded a college education; the lower income students and the minority.

7. Continuous evaluation of programs should be practiced to get insight into their effectiveness and also which groups of students are more likely to benefit from them. Community colleges serve a diverse group of students with diverse needs: those who are older, working, part-time, ethnic minority, female, and so forth. Each group of student comes to college for different reasons and with different expectations. Evaluating the effectiveness of the programs being offered, in meaning the needs of the individual groups, can be a part of the preventative strategies used to combat attrition.

8. More comprehensive research on persistence should be attempted by the Policy and Planning unit of the Ministry of Education (MOE) which can make use of the school data collected on a yearly basis from all community colleges in Belize. The Policy and Planning unit is the arm of MOE that is responsible for collecting, compiling, and disseminating data on schools at all levels. Acquiring a culture of research and use of empirical data to inform decision-making should be modeled by this unit. Once the Policy and Planning unit embraces research as a normal part of its processes, it would be easier to convince educational institutions of the importance of sending information to the unit and also for these institutions to do their own internal analysis of student data.

Recommendation for Future Research

The results from this study can be used as baseline for future studies in Belize. The following research is recommended based upon the findings of this study:

1. Merge several theoretical approaches in future study of persistence for better understanding of the reasons for student persistence or departure.

2. Engage in persistence studies that use longitudinal data to improve the validity and increase the generalizability of the findings. This study used cross-sectional data for only one group of students within a specific school year.

3. Multiple post-secondary institutions can also be studied to gain a broader perspective into the student persistence phenomenon.

4. More sophisticated analytical techniques can be used to provide better interpretation of the persistence process over time.

5. Conduct research to determine which programs are most successful and which groups of students are more likely to benefit from these programs.

6. Further analyze which groups or characteristics, or combinations, are more associated with dropout in order to identify which students are most at risk and which attributes most contribute to the risk.

7. Conduct further research on subgroups of students under each category of explanatory variable to find out differences in persistence and also interaction effects of the factors.

8. Repeat the persistence study using students at different level of enrollment (first, second, and third years) at the college.

9. Conduct similar study on student persistence at the national level in Belize

10. Conduct persistence studies at different types of post-secondary institutions to see if the results can be replicated.

11. Include more factors (institutional, psychological, and social) in the study of persistence

12. Conduct a qualitative study to gain further insight into the reason why students persist or depart.

Final Thoughts

The researcher considers this a preliminary study focused at sensitizing Belizean educators, policy makers and educational practitioners of the importance of higher education in meeting national goals. More research, both quantitative and qualitative, need to be conducted to gather better insight into the school leaving phenomenon. Practices and policies at higher education institutions may promote or impede economic development. Many factors have been found to impact students performances, therefore, a one-size-fit-all policy will not, and cannot, work in a community college setting in Belize. Since Belize boasts of a unique history and identity, educators throughout the nation must understand that with diversity comes the need for diverse solutions.

As an educator within the higher education level in Belize, the researcher advocates the need for more accountability at each level of the education system. Since

this study found academic preparation to be the best predictor of persistence, the Ministry of Education (MOE), all ATLIB institutions, and educators in general, need to focus on improving the quality of education offered at each level. There is need to seek some alignment in curriculum between levels (to allow for continuity) and most importantly, too seek articulation agreements among educational providers throughout the country of Belize.

Concerns the researcher noted from looking at the diverse backgrounds, needs, and characteristics of community college students at EJC are for the implementation of effective recruitment, enrollment, and retention management; the need for more need-based financial assistance offered to college students; for MOE to ensure that quality and relevant education is being provided by all secondary schools; for educators (at all levels) to take a more proactive approach on the issue of student persistence; and for a government mandated nationally approved criterion for evaluating the effectiveness of all retention initiative at both local and national levels.

REFERENCES

Abrams, D. R. (2007). Data and statistical services. Princeton University. Retrieved

September 15, 2011, from

http://dss.princeton.edu/online_help/analysis/regression_intro.htm

Abstract of Education Statistics 2008-2009. *Policy and Planning Unit.* Ministry of

Education, Belize. Retrieved September 15, 2010, from

http://www.moe.gov.bz/rubberdoc/a736cb3c7d099e7cec5a7c5e8858933f.pdf

ACT. (2004). The role of academic and non-academic factors in improving college. Iowa

City, IA: Author.

Adelman, C. (2004). Principal indicators of student academic histories in postsecondary

education, 1972–2000. Washington, DC: U.S. Department of Education.

Allen, D. (1999). Desire to finish college: An empirical link between motivation and

persistence. *Research in Higher Education*, *40* (4), 461-485.

Astin, A. W. (1975*).* Preventing students from dropping out. San Francisco: Jossey-Bass

Astin, A. W. (1985). Achieving educational excellence: A critical assessment of priorities

and practices in higher education. San Francisco: Jossey-Bass

Astin, A. W. (1991). Assessment for excellence: The philosophy and practice of

assessment and evaluation in higher education. New York: Macmillan

Astin, A. W. (1993). What matters in college? Four critical years revisited. San

Francisco: Jossey-Bass.

Babones, S. J. (2000*).* Trade globalization, economic development and the importance of

    education-as-knowledge. *Journal of Sociology, 46*(1), 45-61

Bailey, T., & Alfonso, M. (2005). Paths to persistence: An analysis of research on

    program effectiveness at community colleges. Indianapolis, IN: Lumina

    Foundation for Education.

Bailey, T., Jenkins, D., & Leinbach, T. (2005). Community college low-income and

    minority student completion study: Descriptive statistics from the 1992 high

    school cohort. New York: Columbia University, Teachers College, Community

    College Research Center.

Barefoot, B. O. (2000). The first-year experience: Are we making it better? *About*

    Campus, 12-18.

Barnhardt, C. (1994). Life on the other side: Alaska native teacher education students and

    the University of Fairbanks. Ph.D. Dissertation, University of British Columbia.

    (Canada), Canada. Retrieved September 15, 2010, from Dissertations & Theses:

    A&I.(Publication No. AAT NN95308).

Barth, P., Haycock, K., Huang, S., & Richardson, A. (2001). Youth at the crossroads:

    Facing high school and beyond. Washington, DC: Education Trust.

Bauer, K. W. (2003). The effect of personality and precollege characteristics on first-year

    activities and academic performance. *Journal of College Student Development*,

    44(3), 277-290

Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of

    student attrition. *Research in Higher Education, 12,* 155–187.

Bean, J. P. (1982). Student attrition, intentions, and confidence: Interaction effects in a

    path model. *Journal of Research in Higher Education*, *17*(4), 291-320.

Bean, J. P. (1985). Interaction effects based on class level in an exploratory model of

    college student dropout syndrome. *American Educational Research Journal*, *22*,

    35-64.

Bean, J. P. (2005). Nine themes of college student retention. In A. Seidman (Ed.),

    *College student retention: Formula for student success (*215-244). Westport, CT:

    American Council on Education and Praeger Publishers.

Bean, J. P., & Eaton, S. B. (2001/2002). The psychology underlying successful retention

    practices. *Journal of College Student Retention 3*(1), 73-89.

Bean, J. P., & Metzner, B. S. (1985). Interaction effects based on class level in an

    explanatory model of college student dropout syndrome. *American Educational*

    Research Journal, *22*, 35-64.

Belgarrde, M. J. & LoRé, R. K. (2007). The retention/intervention study of Native

    American undergraduates at the University of New Mexico. In A. Seidman (Ed.),

    Minority student retention: *The best of the Journal of College Student Retention*

    (pp. 167-196). Amityville, NY: Baywood Publishing Company, Inc.

Bennett, A. (2008). Education in Belize: A historical perspective. Belize: Angelus Press

    Ltd.

Blau, P., Duncan, O.D. (1967). The American occupational structure. New York: John Wiley & Sons.

Boyer, P. G. (2002). College student persistence of first-time freshmen at a midwestern university: A longitudinal study. Research for Education Reform, *10*(1), 16-27.

Bradburn, E. M. (2002). Short-term enrollment in postsecondary education: Student background and institutional differences in reasons for early departure, 1996–98. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Braxton, J. M. (2000). Reworking the departure puzzle: New theory and research on college student retention. Nashville: Vanderbilt University Press.

Braxton, J. M., & Hirschy, A. S. (2005). Theoretical developments in the study of college student departure. In A. Seidman (Ed.), College Student Retention: Formula for Student Success. Westport, CT: American Council on Education/Praeger.

Braxton, J. M., Sullivan, A. V., & Johnson, R. M., Jr. (1997). Appraising Tinto's theory of college student departure. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (pp. 107–165). New York: Agathon Press.

Bueschel, A. C., & Venezia, A. (2006). Local pathways and statewide policies aligning standards and curricula. *New Directions for Community Colleges*, *135,* 29-38.

Byun, K. (2000). A study on the applicability of Bean and Metzner's nontraditional

    student attrition model for older students using four different measures of

    persistence. Dissertation Abstract International, 61(07), 2615. (UMI No.

    9978249).

Cabrera, A. F., Nora, A., & Castaneda, M. B. (1992). The role of finances in the

    persistence process: A structural model. *Research in Higher Education, 33*(5),

    571- 593.

Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural

    equations modeling test of an integrated model of student retention. *Journal of*

    Higher Education, 64, 123–139.

Caribbean Community Secretariat. (2009). The Caribbean Community. Retrieved

    November 18, 2010 from

    http://www.caricom.org/jsp/community/community_index.jsp?menu=community

    &prnf=1

Chan, A. (2005). The Belize national report on higher education. UNESCO.

Chen, R. (2007). Socioeconomic and racial/ethnic gaps in student dropout risks: A

    longitudinal model to examine the differential effects of financial aid.

    Unpublished 3276111, University of Michigan, United States -- Michigan.

Chen, R. (2008). Financial aid and student dropout in higher education: A heterogeneous

    research approach. In J. C. Smart (Ed.), *Higher education: Handbook of theory*

    and research (Vol. 23, pp. 209-239). New York: Springer.

Chen, R. & DesJardins, S. L. (2008). Exploring the effects of financial aid on the gap in student dropout risks by family income. Research in Higher Education, *49*(1), 1-18.

Clark, C. R. (2004). The influence of student background, college experience, and financial aid on community college within-year retention. Dissertation Abstracts International, 64(07), 2400. (UMI No. 3099265).

Cofer, J., and Somers, P. (1999). A National Study of Persistence at Two-year Colleges (Conference Paper), American Educational Research Association Annual Meeting, Montreal.

Cofer, J., & Somers, P. (2000). Within year persistence of students at two-year colleges. *Community College Journal of Research and Practice*, *24*(10), 785-807).

Cohen , A., & Brawer, F. (2003). The American community college. 4th ed., San Francisco: Jossey-Bass .

Conley, D. T. (2005a). Align high school with college for greater student success**.** *The Education Digest, 71* (2), 4-9

Conley, D. T. (2005b). College knowledge: What it really takes for students to succeed and what we can do to get them ready. Retrieved September 15, 2010 from http://www.josseybass.com/WileyCDA/WileyTitle/productCd-0787973971.html.

Contento, J. M. (1999). Impacts of financial aid on persistence: A longitudinal analysis of beginning undergraduate students. Unpublished 9924169, Arizona State University, United States -- Arizona.

Craig, A. J. (2005). Student retention and success at a community college in the

    Northeast. Dissertation Abstracts International, 66(05), 1661. (UMI No.

    3177196).

Cuseo, J. B. (2002). Igniting student involvement, peer interaction, and teamwork: A

    taxonomy of specific cooperative learning structures and collaborative learning

    strategies. Stillwater, OK: New Forums Press.

Davies, G.K. (2001). Higher education is a public-health issue. *Chronicle of Higher*

    Education, 48 (14), 16-17.

Dennis, M. J. (1998). A practical guide to enrollment and retention management in higher

    education. Retrieved from EBSCO host.

Desjardins, S. L., Ahlburg, D. A. & McCall, B. (2002). Stimulating the longitudinal

    effects of change in financial aid on student departure from college. *The Journal*

    of Human Resources, 37(3)672-698

Desjardins, S., McCall, B., Ahlburg, D., & Moye, M. (2002). Adding a timing light to the

    "Toolbox." *Research in Higher Education, 43*, 83-114.

Dey, E. L., & Astin, A. W. (1993). Statistical alternatives for studying college student

    retention: A comparative analysis of logit, probit, and linear regression. *Research*

    in Higher Education, 34(5), 569-581.

Dobson, N. (1973). A History of Belize. Trinidad: Longman Caribbean

Durkheim, E. (1951). Suicide. New York: The Free Press.

Education at a Glance. (2006/2007). Planning and project unit. Belize: Ministry of
    Education.

Education at a Glance. (2008/2009). Planning and project unit. Belize: Ministry of
    Education.

Education Statistical Digest. (2006-2007). Planning and project unit. Belize: Ministry of
    Education.

Educational Testing Service. (1997). Stereotyping shortchanges Asian American
    students. Retrieved September 15, 2010 from
    http://modelminority.com/academia/ets.html

Eimers, M. T., & Pike, G. R. (1997). Minority and nonminority adjustment to college:
    Differences or similarities? [Article]. *Research in Higher Education, 38*(1), 77-
    97.

Evans, A. D., Green, C. J., & Murinde, V. (2002). Human capital and financial
    development in economic growth: New evidence using the transom production
    function. *International Journal of Finance and Economics, 7*(2), 123-140.

Feldman, M. J. (1993). Factors associated with one-year retention in a community
    college. *Research in Higher Education, 34*(4), 503-512.

Fleming, J. E. (1984). Blacks in college. San Francisco, CA: Jossey-Bass.

Fleming, J. E. (2002). Who will succeed in college? When the SAT predicts black
    students' performance. *Review of Higher Education, 25*, 281-296.

Gay, L. R., Mills, G. E., & Airasian, P. (2006). Educational Research: Competencies for analysis and applications. Columbus, Ohio: Pearson Prentice Hall.

Geiser, S., & M. Santelices. (2007). Validity of high-school grades in predicting student success beyond the freshman year: High-school record vs. standardized tests as indicators of four-year college outcomes. Center for Studies in Higher Education, UC Berkeley: Retrieved September 15, 2010 from http://cshe.berkeley.edu/publications/publications.php?id=265.

Grimes , S. K. (1997). Underprepared community college students: Characteristics, persistence, academic success . *Community College Journal of Research and Practice* , *21*, 47-56.

Habley, W. R. (Ed.). (2004). The status of academic advising: Findings from the ACT sixth national survey. Manhattan, KS: National Academic Advising Association.

Hagedorn, L. S. (2005). How to define retention: A new look at an old problem. In A. Seidman (Ed.), College Student Retention: Formula for student success (pp. 89-106). Westport, CT: ACE/Praeger.

Hagedorn , L. S. , Maxwell , W. , & Hampton , P. (2001). Correlates of retention for African-Americans in community colleges . *Journal of College Student Retention*, *3*, 243-263 .

Hagedorn, L. S., Maxwell, W., & Hampton, P. (2007). Correlates of retention for

    African-American males in community colleges. In A. Seidman (Ed.), Minority

    student retention: *Journal of College Student Retention* (pp. 7-28). Amityville,

    NY: Baywood Publishing Company, Inc.

Hauptman, A. (2007). Strategies for Improving Student Success in Postsecondary

    Education. Boulder, CO: Western Interstate Commission for Higher Education.

Hernandez, J.C. & Lopez, M.A. (2007). Issues impacting Latino/a college student

    retention. In A. Seidman (Ed.), Minority student retention: *Journal of College

    Student Retention* (pp. 99-122). Amityville, NY: Baywood Publishing Company,

    Inc.

Hippensteel, D. G., St. John, E. P., and Starkey, J. B. (1996). Influence of tuition and

    student aid on within-year persistence by adults in two-year colleges. *Community

    College Journal of Research and Practice, 20,* 233-242.

Hoffman, N. & Vargas, J. (2007). The college gap. *Education Week*, 27, 24-25

Horn, L., and Nuñez, A.-M. (2000). Mapping the road to college: First-generation

    students' math track, planning strategies, and context of support (NCES 2000–

    153). U.S. Department of Education, National Center for Education Statistics.

    Washington, DC: U.S. Government Printing Office.

Hunt, T. (2007). Motivational factors affecting adult student persistence at commuter

    colleges: A case study. Ph.D. dissertation, Capella University, United States --

    Minnesota. Retrieved May 3, 2010, from Dissertations & Theses: A&I.

    (Publication No. AAT 3263168).

Hurtado, S. (1992). Campus racial climates: Contexts of conflict. *Journal of Higher*

    Education, *63*, 539-569.

Ishitani, T. T. (2003). A longitudinal approach to assessing attrition behavior among

    first-generation students: Time-varying effects of pre-college characteristics.

    Research in Higher Education, 44, 433–449.

Ishitani, T.T. (2006). Studying attrition and degree completion behavior among first

    generation college students in the United States. *Journal of Higher Education*,

    77(5), 861-885.

Ishanti, T. & DesJardins, S. (2002). A longitudinal investigation of dropout from college

    in the United Sates*. Journal of College Student Retention: Research, Theory &*

    Practice, 4 (2), 173-201.

Johnson, S. A. (1999). A statistical model identifying 'at risk' college students at

    Northeastern Oklahoma A&M College using selected variables. *Dissertation*

    Abstracts International, 60(6), 1934. (UMI No. 9932785).

Johnson, B. (2001). Toward a new classification of non-experimental quantitative

    research. *Educational Researcher*, *30*(2), 3-13.

Johnson, H. (2007). Factors affecting student retention at a selected two-year technical college. Ed.D. dissertation, University of South Dakota, United States -- South Dakota. Retrieved September 20, 2010, from Dissertations & Theses: A&I.(Publication No. AAT 3305937).

Keppel. G. & Wickens, T. D. (2004). Design and analysis: A researcher's handbook. New Jersey: Pearson Education, Inc.

Kuh, G.D., Kinzie, J and Buckley, J.A. (2006) What matters to student success: A review of the literature, Commissioned paper for NPEC. Retrieved September 15, 2010 from http://nces.ed.gov/npec/papers.asp

Leppel, K. (1984). The academic performance of returning and continuing college students: An economic analysis. *Journal of Economic Education, 15*(1), 46-54.

Leppel, K. (2002). Similarities and differences in the college persistence of men and women *Review of Higher Education*, *25*, (4), 433-450

Leslie, R. (Ed.). (2002). A history of Belize: A nation in the making. San Ignacio, BZ: Cubola Productions.

Levine, A., and Nidiffer, J. (1996). Beating the odds: How the poor get to college. San Francisco: Jossey-Bass.

Lewallen, W. (1993). The impact of being "undecided" on college-student persistence. *Journal of College Student development*, *34*, 103-112.

Martinez, K. (2009). Managing Students' Data: To support the use of data and promote data driven decision-making for the benefit of students at Ecumenical Junior College. Unpublished Document.

Mendoza, P., Mendez. J. P., & Malcolm, Z. (2009). Financial aid and persistence in community colleges: Assessing the effectiveness of federal and state financial aid programs in oklahoma. *Community College Review, 37*(2), 112-112-135

Mohammadi, J. (1996). Exploring retention and attrition in a two-year public community college [Electronic version]. VCCA Journal, *10*(1), 39-50

Morley, K. M. (2007). The social and academic integration of diverse students at a large predominantly white university. In A. Seidman (Ed.), Minority student retention: *Journal of College Student Retention* (pp. 243-270). Amityville, NY: Baywood Publishing Company, Inc.

National Center for Education Statistics. (2005). Digest of Education Statistics. Retrieved September 15, 2010, from http://nces.ed.gov/programs/digest/d05/app_a2_17.asp

National Center for Education Statistics. (1995). Profile of undergraduates in U.S. post-secondary education institutions: 1992-93. With an essay on undergraduates at risk. NCES 96-237. Washington: U.S. Department of Education. (ED 392 852)

Ng, J. C., Lee. S. S., & Pak, Y. K. (2007). Contesting the model minority and perpetual foreigner stereotypes: A critical review of literature on Asian Americans in education. R*eview of Research in Education, 31*, 95-131

Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and

 discrimination on the adjustment of minority students to college. *Journal of*

 Higher Education, 67, 119–148.

Paulsen, M. B., & St. John, E. P. (2002). Social class and college costs: Examining the

 financial nexus between college choice and persistence. *The Journal of Higher*

 Education, *73*, 189–236.

Pang, V. O. (1995). Asian Pacific American students: A diverse and complex population.

 In J. A. Banks (Ed.), Handbook of research on multicultural education (pp. 412-

 424). New York: Macmillian.

Pang, V. O., Kiang, P., & Pak, Y. (2004). Asian Pacific American students: Fighting

 overgeneralizations. In J. A. Banks (Ed.) & C. A. McGee Banks (Assoc. Ed.),

 Handbook of research on multicultural education (2nd ed., pp. 542–563). San

 Francisco: Jossey-Bass.

Pascarella, E. T. (1980). Student-faculty informal contact and college outcomes. *Review*

 of Educational Research, 50(4), 545–595.

Pascarella, E. (1985). The influence of on-campus living versus commuting to college on

 intellectual and interpersonal self-concept. *Journal of College Student Personnel*,

 26(4), 292-299.

Pascarella, E., &Terenzini, P. (1980). Predicting freshman persistence and voluntary

 dropout decisions from a theoretical model. *Journal of Higher Education*, *51*, 60-

 75.

Pascarella, E., & Terenzini, P. (1991). How college affects students: Findings and

insights from twenty years of research. San Francisco: Jossey-Bass.

Pascarella, E. T., & Terenzini, P. T. (2005). How college affects students: A third decade

of research. San Francisco: Jossey-Bass.

Pascarella, E. T., Edison, M. Nora, A., Hagedorn, L. S., & Terenzini, P. T. (1996).

Influences on students' openness to diversity and challenge in the first year of

college. *Journal of Higher Education*, *67*, 174-195.

Park, K. H. (1996). Educational expansion and educational inequality on income

distribution. *Economics of Education Review*, *15*(1), 51-58.

Pastor, C. (1995). *Education in Belize: History and current issues.* Unpublished

MM05415, McGill University (Canada), Canada.

Paulsen, M. B. (1998). Recent research on the economics of attending college: returns on

investment and responsiveness to price. *Research in Higher Education, 39*(4),

471-489.

Peltier, J.W., Laden, R., & Matranga, M. (1999). Student persistence in college: A review

of research. *Journal of College Student Retention, 1*(4), 357-75.

Polinsky, T. L. (2002/2003). Understanding student retention through a look at student

goals, intentions, and behavior: Research, theory, and practice. *Journal of College

Student Retention*, *4*(4), 361-376

Reuschel, J.(2009). A comparative study of high school academic paths, grade point
averages, and ACT composite scores as predictors of success at Walters State
Community College. Ed.D. dissertation, East Tennessee State University, United
States -- Tennessee. Retrieved September 21, 2010, from Dissertations & Theses:
A&I.(Publication No. AAT 3361653).

Richardson, R. B. (2007). Tourism in Belize vulnerability and capacity assessment. Retrieved
July 6, 2011 from
http://www.hydromet.gov.bz/CC_CDM/Climate%20Change/Vulnerability%20studies/V
ulnerability%20and%20Adaptation%20Assessment%20-%20Tourism.doc.pdf

Robertson, D. L. (1991). Gender differences in the academic progress of adult
undergraduates: Patterns and policy implications. *Journal of College Student
Development*, *32*, 490-496.

Rooney, M. (2002). Report on Latino-American students notes high college enrollment
rate, lower graduation rate. Retrieved September 15, 2010 from
http://chronicle.com/daily/2002/09/2002090604n.htm

School Catalogue. (2009). Ecumenical Junior College.

School Records. (2007-2008). Ecumenical Junior College.

School Records. (2008-2009). Ecumenical Junior College.

School Records. (2009-2010). Ecumenical Junior College.

School Records. (2010-2011). Ecumenical Junior College.

Schwartz, R., & Washington, C. M. (2007). Predicting academic success and retention

    for African-American women in college. In A. Seidman (Ed.), Minority student

    retention: *Journal of College Student Retention* (pp. 29-44). Amityville, NY:

    Baywood Publishing Company, Inc.

Seidman, A. (2005a). College student retention: Formula for student success. Westport,

    CT: American Council on Education and Praeger Publishers

Seidman, A. (2005b). Minority student retention: Resources for practitioners. *New*

    Directions for Institutional Research, 125, 7-24. Retrieved from Academic Search

    Premier database.

Shavelson, R. J. (1996). Statistical reasoning for the behavioral sciences. Boston, MA:

    Allyn & Bacon.

Smith, D. G. (1990). The challenge of diversity: Implications for institutional research. In

    M.T. Nettles (Ed.), The effect of assessment on minority student participation,

    (no. 65). *New direction for institutional research*. San Francisco: Jossey-Bass

    Inc., Publishers.

Snyder, K. J., Acker-Hocevar, M., & Synder, K. M. (2000). Living on the edge of chaos:

    Leading schools into the global age. Milwaukee: ASQ Quality Press.

Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and

    synthesis. *Interchange, 1*(1), 64-85.

Spady, W. G. (1971). Dropouts from higher education: Toward an empirical model.

    Interchange, 2(3), 38-62.

St. John, E. P. (1990). Price response in persistence decisions: An analysis of the high

      school and beyond senor cohort. *Research in Higher Education, 31*(4), 387-403.

St. John, E. P. (2001). The impact of aid packages on educational choices: High tuition–

      high loan and educational opportunity. *Journal of Student Financial Aid, 31(*2),

      35–54.

St. John, E. P., Andieu, S. C., Oescher, J., & Starkey, J.B. (1994). The influence of

      student aid on within-year persistence by traditional college-age students in four-

      year colleges. Research in Higher Education, 35(4), 455-480.

St. John, E. P., & Starkey, J. B. (1995). An alternative to net price: Assessing the

      Influence of prices and subsidies on within-year persistence. *The Journal of*

      Higher Education, *66*,156–186.

St. John, E. P., Paulsen, M. B., & Starkey, J. B. (1996). The nexus between college

      choice and persistence. *Research in Higher Education, 37*(2), 175-220.

St. John, E. P., Carter, D. F., Chun, C. G., & Musoba, G. D. (2006). Diversity and

      persistence in Indiana higher education. The impact of preparation, major choices,

      and student aid. In E. P. St. John (ed.), *Readings on Equal Education*, Vol. 21:

      Public policy and education opportunity: School reforms, postsecondary

      encouragement, and state policies on higher education. New York: AMS Press.

Statistical Institute of Belize. (2007). Belmopan City.

Stage, F.K. (1988). University attrition: LISREL with logistic regression for the

      persistence criterion. *Research in Higher Education*, *29*(4), 343-357.

Stewart, S. (2010). An examination of pre-entry and academic performance factors that predict persistence for academically underprepared students at a public research university. Ph.D. dissertation, The University of Oklahoma, United States -- Oklahoma. Dissertations & Theses: A&I.(Publication No. AAT 3403011).

Strage, A. (1999). Social and academic integration and college success. Similarities and differences as a function of ethnicity and family educational background. *College Student Journal*, *33* (2), 198-205

Strauss, L. C., & Volkwein, J. F. (2004). Predictors of student commitment at two year and four-year institutions. *The Journal of Higher Education, 75*(2), 203-227.

Suarez-Orozco, M. M., & Paez, M. M. (2002). Introduction: The research agenda. In M. M. Suarez-Orozco & M. M. Paez (Eds.), *Latinos: Remaking America* (pp. 1-37). Berkley: University of California Press.

Suzuki, B. (2002). Revisiting the model minority stereotype: Implications for student affairs practice and higher education. In M. McEwan, C. Kodama, A. Alvarez, S. Lee, & C. Liang (Eds.), *Working with Asian American college students: New directions for student services* (Vol. 97, pp. 21–32). San Francisco: Jossey-Bass.

Swail, W. (2006). Barriers to Student Retention and Success on College Campuses. Retrieved September 15, 2010 from www.studentretention.org.

Terenzini, P. T., Rendon, L. I. Upcraft, L., Millar, S. B., Allison, K. W., Gregg, P. L., & Jalomo, R. (1994). The transition to college: Diverse students, diverse stories. *Research in Higher Education*, *35*(1), 57-73.

Tierney, W. (1992). An anthropological analysis of student participation in college. Journal of Higher Education, *63*(6), 603-618.

Tierney, W. (1999). Models of minority college-going and retention: Cultural integrity versus cultural suicide. *Journal of Negro Education*, *68*(1), 80.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89-125.

Tinto, V. (1987). Leaving college: Rethinking the causes and cures of student attrition. Chicago: University of Chicago Press.

Tinto, V. (1993). Leaving college: Rethinking the causes and cures of student attrition. (2nd ed.). Chicago: University of Chicago Press.

Thomson, P. (2004). Belize: A concise history. Oxford: Macmillan Caribbean.

Tucker, J. E. (1999-2000). Tinto's model and successful college transitions. *Journal of College Student Retention, 1*(2), 163-176.

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. (2008). *The Condition of Education 2008* (NCES 2008-031). Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

U.S. Department of Education Institute of Education Sciences . (2009). Postsecondary Institutions and Price of Attendance in the United States: Fall 2009, Degrees and Other Awards Conferred: 2008–09, and 12-Month Enrollment: 2008–09. Retrieved September 15, 2010, from http://nces.ed.gov/pubs2010/2010161.pdf

Van Gennep, A. (1960). The rites of passage. Chicago: University of Chicago Press.

Vander Hulst, M. & Jansen, E.P. (2002). Effects of curriculum organization on

study progress in engineering studies. *Higher Education*, *43*, 489–506.

Varghese, N. V. (2008). Globalization of higher education and cross-border student

mobility. Paris: IIEP-UNESCO.

Volkwein, J. F., & Cabrera, A. F. (2000). Antecedents and consequences of classroom

vitality among college seniors. Research paper presented at the ASHE Annual

Meeting, November 2000, Sacramento, CA.

Warburton, E. C., & Nuñez, A.-M. (2001). Bridging the Gap: Academic Preparation and

Postsecondary Success of First-Generation Students (NCES 2001–153). U.S.

Department of Education, National Center for Education Statistics. Washington,

DC: U.S. Government Printing Office.

Watts, A. L. (2001). Education and the common good. Frankfort, Kentucky: Long-term

Policy Research Center.

World Bank (2000). Higher Education in Developing Countries: Perils and promise.

Washington, D.C.

World Factbook. (2007). Retrieved November 18, 2010, from

http://www.cia.gov/library/publications/the-world-factbook/countrylisting.html

World Factbook. (2009). Retrieved September 15, 2010, from

http://www.cia.gov/library/publications/the-world-factbook/countrylisting.html

World Travel and Tourism Council (2007). Key facts at a glance. Retrieved November

   18, 2010, from http://www.wttc.org/bin/pdf/original_pdf_file/belize.pdf

Wylie, J. R. (2004). Nontraditional student attrition in higher education: A theoretical

    model of separation, disengagement then dropout. Self Research Centre,

    Australia: University of Western Sydney.

Yeh, T. (2007). Issues of college persistence between Asian and Asian Pacific American

    students. In A. Seidman (Ed.), Minority student retention: The best of the Journal

    of College Student Retention (pp. 149-164). Amityville, NY: Baywood

    Publishing Company, Inc.

APPPENDICES

APPENDIX A

EJC TOTAL ENROLLMENT 2000/01-2008/09

Total Enrollment 2000/01 - 2008/09

189
193
168
200
213
251
284
289
314

total

Total Intake

Year of enrollment
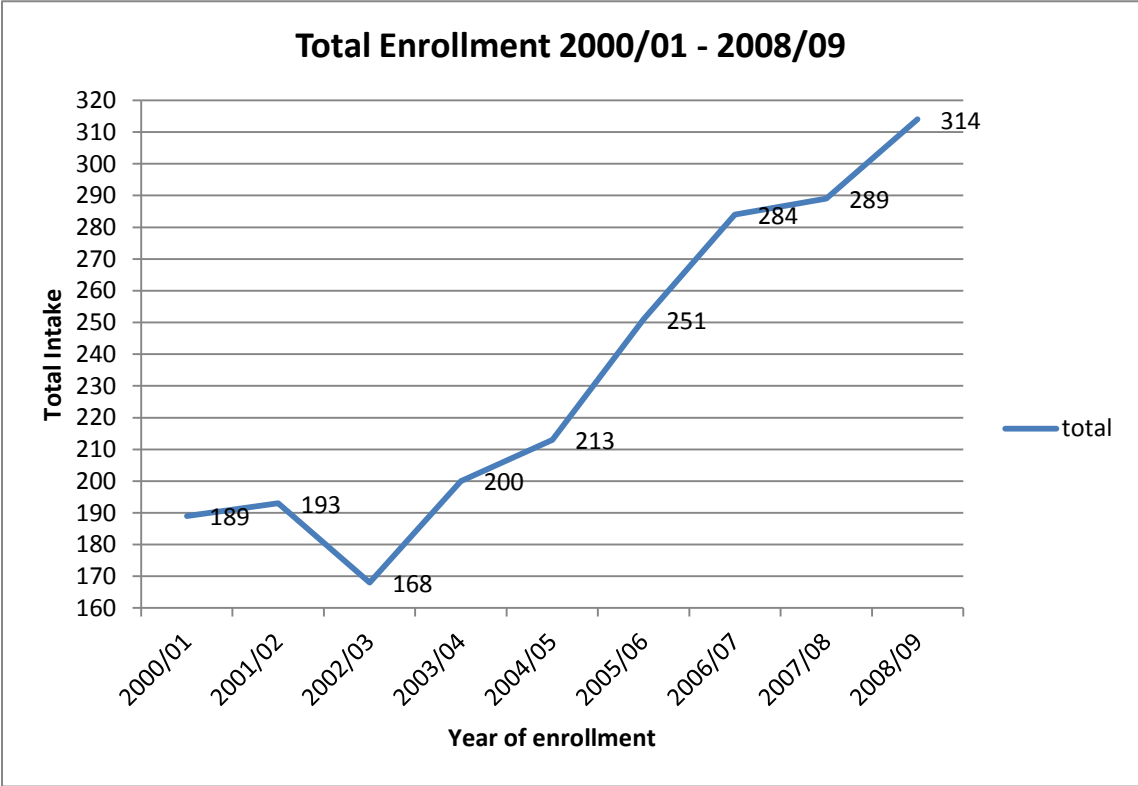
APPENDIX B

IRB Approval Form

Oklahoma State University Institutional Review Board

Request for Determination of Non-Human Subject or Non-Research

Federal regulations and OSU policy require IRB review of all research involving human subjects. Some categories of research are difficult to discern as to whether they qualify as human subject research. Therefore, the IRB has established policies and procedures to assist in this determination.

1. Principal Investigator Information

First Name: Karen	Middle Initial: C	Last Name: Martinez
Department/Division: School of Education Studies		College: College of Education
Campus Address:		Zip+4:
Campus Phone:	Fax:	Email: grigadan@yahoo.com
Complete if PI does not have campus address:		
Address: 3068 Rivas Estate		City: Dangriga
State: Stann Creek	Zip:	Phone: 501-502-0961

2. Faculty Advisor (complete if PI is a student, resident, or fellow) ☐ NA

Faculty Advisor's name: Jesse Mendez	Title:
Department/Division: School of Education Studies	College: College of Education
Campus Address: 312 Willard Hall	Zip+4:
Campus Phone: 405-744-8064 Fax:	Email: jessepm@okstate.edu

3. Study Information:

A. Title
Factors Affecting Student Persistence at a Selected Community College (EJC) in the Stann Creek District.

B. Give a brief summary of the project. (See instructions for guidance)

The issue of college persistence has been widely studied over the past three decades. It is of utmost importance for Belizean postsecondary institutions, enrolling a mere 4% of the secondary school graduates, to ensure that strategies and policies are in place to promote student persistence in college. No research has been done to inform literature in this area in Belize. Many factors have been found to affect students' persistence. Since no study has been conducted in Belize, it is quite difficult to determine which factors may affect students' persistence in Belizean community colleges.

The purpose of this study is to examine whether there are significant differences between students' background characteristics, precollege academic preparation, financial factors, and college experience with their ability to persist within their first year of college attendance. By examining the students' background characteristics, precollege preparation, financial factors, and college experience of first year college students, this study aims to provide empirical evidence on how these may influence students' persistence in college; once identified this can lead to development of preventative and intervention strategies in attempt to keep Belizean postsecondary dropout competitive nationally and regionally. Better understanding of the factors that affect persistence would enable policymakers, school administrators, and the Ministry of Education to draw up intervention efforts targeted at the individual needs of the students.

The findings of this study will help to fill the gap and increase the knowledge base by enhancing the understanding of the factors that influence student persistence at a two-year community college in Belize.

Oklahoma State University Institutional Review Board
Request for Determination of Non-Human Subject or Non-Research

C. Describe the subject population/type of data/specimens to be studied. (See instructions for guidance)

The following research questions will guide the study:
1. Do statistical significant differences exist between background characteristics (gender, age, ethnicity, parental education level) and persistence of students at Belizean community colleges?
2. Do statistical significant differences exist between precollege preparation (high school GPA, composite ATLIB score, number of CXC exam passes) and persistence of students at Belizean community colleges?
3. Do statistical significant differences exist between financial factors (financial aid) and persistence of students at Belizean community colleges?
4. Do statistical significant differences exist between college experience (College GPA) and persistence of students at Belizean community colleges?

Pre-existing data will be used. Approximately 171 students' records/data are expected to be used in this study. No human subjects will be used. Data from a student database will be investigated. A dataset that contains particular variables (gender, age, ethnicity, parental education status, high school GPA, college GPA, and type financial aid received) will be provided by a community college in the Stann Creek District for the school year 2010-2011. Purposive sampling will be used, that is, data for all students who fit the category as first year degree seeking at the selected community college will be used. The dataset will be stripped of all identifiers. The PI will not have access to the link to the coded information. The PI will ensure that information received from the college is secured in a locked cabinet. Analysis will be conducted using a non-networked computer. Password, known only to PI, will be used to increase the measure of security.

Letter of approval will be sent to the managing authority asking for permission to use students' data. No human subjects will be used. Once permission is granted, the researcher will gather data following the agreed-upon guidelines.

4. **Determination of "Research".**
45 CFR 46.102(d): *Research* means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy whether or not they are conducted or supported under a program which is considered research for other purposes.

One of the following must be "no" to qualify as "non-research":

A. Will the data/specimen(s) be obtained in a systematic manner?
☒ No ☐ Yes

B. Will the intent of the data/specimen collection be for the purpose of contributing to generalizable knowledge (the results (or conclusions) of the activity are intended to be extended beyond a single individual or an internal program, e.g., publications or presentations)?
☐ No ☒ Yes

5. **Determination of "Human Subject".**
45 CFR 46.102(f): *Human subject* means a living individual about whom an investigator (whether professional or student) conducting research obtains: (1) data through intervention or interaction with the individual or (2) identifiable private information. Intervention includes both physical procedures by which data are gathered (for example venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes. Interaction includes communication or interpersonal contact between investigator and subject. Private information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

A. Does the research involve obtaining information about living individuals?
☐ No ☒ Yes

Revision Date: 04/2006   4 of 5

Oklahoma State University Institutional Review Board
Request for Determination of Non-Human Subject or Non-Research

If no, then research does not involve human subjects, <u>no other information is required</u>.
If yes, proceed to the following questions.

All of the following must be "no" to qualify as "non-human subject":

B. Does the study involve intervention or interaction with a "human subject"?
☒ No   ☐ Yes

C. Does the study involve access to identifiable private information?
☒ No   ☐ Yes

D. Are data/specimens <u>received</u> by the Investigator with identifiable private information?
☒ No   ☐ Yes

E. Are the data/specimen(s) coded such that a link exists that could allow the data/specimen(s) to be re-identified?
☐ No   ☒ Yes
    If "*Yes,*" is there a written agreement that prohibits the PI and his/her staff access to the link?
    ☐ No   ☒ Yes

6. **Signatures**

Signature of PI _____   Date January 6, 2011

Signature of Faculty Advisor _____   Date Jan 7, 2011
(If PI is a student)

☒ Based on the information provided, the OSU-Stillwater IRB has determined that this project **does not qualify** as human subject research as defined in 45 CFR 46.102(d) and (f) and **is not subject to oversight by the OSU IRB.**

☐ Based on the information provided, the OSU-Stillwater IRB has determined that this research **does qualify** as human subject research and **submission of an application for review by the IRB is required.**

_____   2/10/11
Dr. Shelia Kennison, IRB Chair   Date

Revision Date: 04/2006   5 of 5

APPENDIX C

Permission Letter

Karen Martinez
3068 Rivas Estate
Dangriga Town
Stann Creek District
****
501-502-0961
grigadan@yahoo.com

February 11, 2011

Mr. Anthony Sabal
Dean
Stann Creek Ecumenical Junior College
Danriga Town

Dear Mr. Sabal:

I am presently a graduate student at Oklahoma State University pursuing a doctoral degree in Higher Education. My dissertation topic is "*Factors Affecting Students' Persistence at a selected two-year Community College in Belize*". My study requires the use of students' data/records for conducting statistical analyses. I am in the process of collecting data for my dissertation.

I am hereby requesting your permission to use archival data/records from your institution for my analyses. My research must be in compliance with IRB guidelines at Oklahoma State University. I am required to maintain confidentiality with respect to all data I collect from your institution.

Thanks for your assistance.

Karen Martinez Mrs.
Doctoral Candidate
Oklahoma State University

APPENDIX D

Agreement Letter

Agreement Between Stann Creek Ecumenical Junior College and Karen Martinez to Permit Access to Selected Student Records in Exchange for Sharing of Data Analysis and Findings.

Mrs. Martinez is presently a graduate student at Oklahoma State University, where she is pursuing a doctoral degree in Higher Education. Her dissertation topic, *Factors Affecting Students' Persistence at a selected two-year Community College in Belize*, requires the use of student data for conducting statistical analyses. The study will utilize students' pre-college data and educational records to assess their individual and combined significance as predictors of student persistence in college.

The Stann Creek Ecumenical Junior College is interested in supporting Mrs. Martinez's doctoral research because her findings will aid in improving retention initiatives at the college. Mrs. Martinez has also agreed and promised to share her research findings with the administration of the college.

With the above-mentioned understanding, Mrs. Martinez agrees to follow all standards and required precautions to safeguard the confidentiality of the data she receives from the Stann Creek Ecumenical Junior College:

- All data received from the college will be in coded form, that is, all identifiers will be removed
- Only college personnel will have the link to the coded information given to Mrs. Martinez
- Mrs. Martinez will secure data received in a locked cabinet.
- Mrs. Martinez will process data using a non-networked computer with a password known only to her.
- Once research study is completed, Mrs. Martinez will dispose of information by shredding.
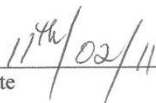
The Stann Creek Ecumenical Junior College agrees to allow Mrs. Karen Martinez to access student records for use to conduct her study following the above-mentioned conditions.
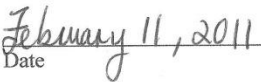
Mr. Anthony Sabal
Dean
Stann Creek Ecumenical Junior College

Mrs. Karen C. Martinez
Doctoral Candidate
Oklahoma State University

11ᵗʰ/02/11
Date

February 11, 2011
Date

APPENDIX E

Student Personal Data Form

Stann Creek Ecumenical Junior College
Student Personal Data Form
Kindly Print

1. NAME: _____

2. DATE OF BIRTH: _____/_____/_____

3. Place of Birth: _____

4. Age by September 1ˢᵗ: _____

5. Nationality: _____

6. Ethnicity: _____

7. Language Spoken at Home: _____

8. Address: _____

    _____

9. Phone/Fax/Email: _____

    _____

10. Secondary School Attended: _____

11. Year graduated from Secondary _____

12. Program of study in College: _____

12. Major(s): _____

Circle the Correct Choice

13. *Gender*: Male/Female

14. *Attendance*: Full-time/Part-time

15. *Location*: Urban/Rural

16. *Residence*: Commuter/In Town

17. *Marital Status*: Single/Married/divorce/other

18. *Employment Status*: Employed/ Not Employed

19. *Financial Sponsor*: Self/parent/Guardian/Government/Other

20. Parent Level of Education -

   Mother: primary/Secondary/tertiary/other

   Father: primary/Secondary/tertiary/other

Fill in the Blank Space

21. Are you the first to attend college? _____. If **NO**, state your

position in your family to attend college _____

HOBBIES:

T-Shirt Size:

Which of the following non-academic activities are you interested to participate in? Circle your choices

Sports: Volleyball, basketball, softball, football, ping-pong, domino

Clubs/committees: celebrations, pageant, graduation, yearbook, newspaper

---

OFFICIAL USE

High school Grade point average _____

ATLIB scores: Math _____ English _____

CXC passes:

APPENDIX F

Data Summary Table

STUDENT CHARACTERISTICS	COLLEGE									
	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr
AGE										
16-19	84	64	8	4	10	8	6	2	108	78
20-24	6	4	15	4	3	1	4	1	28	10
25-29	2	2	2	0	2	2	2	1	8	5
30-34	1	1	1	1	0	0	0	0	2	2
35 up	1	1	0	0	0	0	1	1	2	2
GENDER										
Male	46	34	3	0	8	6	3	0	60	40
Female	48	38	23	9	7	5	10	5	88	57
ETHNICITY										
Creole	14	10	6	3	1	1	2	1	23	15
Chinese	1	1	0	0	0	0	0	0	1	1
East Indian	10	8	1	0	0	0	2	1	13	9
Garifuna	39	31	17	6	4	3	6	3	66	43
Maya	7	3	0	0	9	6	0	0	16	9
Mestizo	23	19	2	0	1	1	3	0	29	20
PARENTAL ED STATUS (1st generation)										
Yes	42	38	16	5	6	5	7	2	71	50
No	52	34	10	4	9	6	6	3	77	47
PRECOLLEGE ACADEMIC FACTORS	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr
HIGH SCHOOL GRADE POINT AVERAGE										
2-2.49	48	34	12	4	1	1	2	1	63	40
2.50-2.99	29	22	9	1	12	8	10	4	60	35
3.00-4.00	17	16	5	4	2	2	1	0	25	22
NUMBER OF CXC PASSES										
Less than 6	12	10	24	8	10	7	11	5	57	30
Six or more	82	62	2	1	5	4	2	0	81	67
ATLIB COMPOSITE OR COMBINED SCORES										
Less than 57.5/less than 115	51	36	17	5	7	5	8	3		
57.5 or more/115 or more	43	36	9	4	8	6	5	2		
FINANCIAL FACTORS	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr
FINANCIAL AID										
Development Finance Corporation	1	1	3	2	2	1	0	0	6	4
Ministry of Education	75	59	6	1	8	7	4	1	93	68
None	12	7	13	5	2	1	5	3	32	16
Sponsor	6	5	4	1	3	2	4	1	17	9
Work Scholarship	0	0	0	0	0	0	0	0	0	0
COLLEGE EXPERIENCE	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr	1st sem.	End of yr
COLLEGE GRADE POINT AVERGAE (1ST SEMESTER)										
Less than 2	22	7	13	1	6	3	7	0	48	11
2-2.49	37	31	9	4	6	5	3	2	55	42
2.5 up	35	34	4	4	3	3	3	3	45	44
COLLEGE GRADE POINT AVERAGE (CUMULATIVE)										
Less than 2	-	8+1w	-	8	-	1	-	1w		17+2w
2-2.49	-	21	-	5	-	5	-	1		32
2.5 up	-	51	-	4	-	6	-	4		65
TOTAL COUNT	94	72	26	9	15	11	13	5	148	97

W = withdrew

VITA

Karen Charlette Martinez

Candidate for the Degree of

Doctor of Education

Thesis: FACTORS AFFECTING STUDENT PERSISTENCE AT A SELECTED COMMUNITY COLLEGE IN THE STANN CREEK DISTRICT, BELIZE, CENTRAL AMERICA

Major Field: Higher Education

Biographical:

Education:

Completed the requirements for the Doctor of Education in Higher Education at Oklahoma State University, Stillwater, Oklahoma in November, 2011.

Completed the requirements for the Master of Education in Educational Leadership at the University of North Florida, Jacksonville, Florida in 2003.

Completed the requirements for the Bachelor of Science in Secondary Education at the University of Belize, Belize City, Belize in 1995.

Experience: Teaching, Administration

Professional Memberships: Consortium for Belize Educational Cooperation Conference (COBEC), Association of Tertiary Level Institutions in Belize (ATLIB)

Name: Karen Charlette Martinez   Date of Degree: December, 2011

Institution: Oklahoma State University   Location: Stillwater, Oklahoma

Title of Study: FACTORS AFFECTING STUDENT PERSISTENCE AT A SELECTED
COMMUNITY COLLEGE IN THE STANN CREEK DISTRICT,
BELIZE, CENTRAL AMERICA

Pages in Study: 173   Candidate for the Degree of Doctor of Education

Major Field: Higher Education

Scope and Method of Study: the purpose of this study was to identify factors that affect
college freshman persistence. Persistence was examined for a selected community
college in the Stann Creek District at two points in time: end of first semester and
at the end of the school year. Linear regression techniques were used to determine
the statistical relationships between student background characteristics, precollege
preparation, financial factors, and college experience and persistence of students
at a Belizean community college.

Findings and Conclusions: the results indicated that three factors (age, high school GPA,
and first semester college GPA) were significant in predicting students'
cumulative college GPA. First semester GPA was found to be the best predictor
of student persistence, followed by high school GPA. The findings indicated that
student' academic preparation, in both high school and college, are the best
predictors of persistence. This calls for better connection between the two
educational entities and the alignment of the curriculum for better transition.
Retention efforts should focus on implementing strategies and policies that aid in
improving students' academic performance at both levels. Suggestions include the
implementation of early alert systems, mentoring, tutoring, academic advising,
staff professional development workshops, and monitoring students' social and
academic integration.

ADVISER'S APPROVAL: Dr. Jesse Mendez