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RIDING THE WAVE:
AMERICA'S CHANGING DEMOGRAPHICS AND ITS EFFECT ON THE
ENROLLMENT AND FINANCIAL STRENGTH OF PRIVATE COLLEGES AND
UNIVERSITIES

By
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A DISSERTATION

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Abstract

This quantitative study explored the relationship between diversity, enrollment size, and financial strength at America's private, four-year colleges and universities. Based on principles of environmental scanning, this study examined the external environment for these institutions in light of changes predicted by the Department of Education's Projections of Education Statistics to 2022. This study created diversity and financial strength scores for all schools in the sample. A correlation test was conducted to determine the correlation coefficient for each pair of variables. Schools were separated into their five size classifications and means were calculated for each variable in each size category. These means were then compared. Scatter plots were created in an attempt to determine any visual clues to the relationships among the variables. Means were calculated separately for the member schools of the Association of Biblical Higher Education (ABHE) in each IPEDS size category. Those means were compared to the means of the peer group as a whole to determine the differences between institutions of biblical higher education and their secular peers. Finally, the financial strength variable was modified to account for the predicted demographic changes. The change between the original financial strength score and the modified score was used as a variable in another round of correlation measurements and comparisons. This study found that it is far too simplistic to say that bigger schools are more diverse or are financially stronger than smaller schools. Likewise, ABHE member schools are not less diverse or financially weaker than their secular peers. Instead, the relationships between diversity, enrollment size, and financial strength are much more nuanced and less intuitive.

Keywords: higher education, leadership, diversity, enrollment, financial strength
Dedication

This dissertation is dedicated to my wife and family who suffered through long nights and weekends without me and still provided never ending encouragement and motivation.

It is further dedicated to the Lord, Jesus Christ, for whose glory I labor unceasingly.
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I would like to thank my committee members. Dr. Eckman has been a professional mentor and having him on my committee has spurred me to excellence in scholarship. Dr. Hawkins has been a rock from the beginning of my program until its completion. Even when I doubted myself, she encouraged me to trudge forward. It is no exaggeration to say that without her, I could not have completed this dissertation or this program; I owe her an enormous debt of gratitude. Finally, I want to thank the faculty and staff of the Interdisciplinary Leadership department. From my initial contact until my graduation, they were responsive, cheerful, and professional. Thank you to all.
Table of Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>iii</td>
</tr>
<tr>
<td>Dedication</td>
<td>iv</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>v</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>vi</td>
</tr>
<tr>
<td>List of Tables</td>
<td>ix</td>
</tr>
<tr>
<td>List of Figures</td>
<td>x</td>
</tr>
<tr>
<td>CHAPTER ONE: INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Background of the Problem</td>
<td>1</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>3</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>5</td>
</tr>
<tr>
<td>Research Questions</td>
<td>6</td>
</tr>
<tr>
<td>Method Overview</td>
<td>7</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>8</td>
</tr>
<tr>
<td>Assumptions</td>
<td>10</td>
</tr>
<tr>
<td>Delimitations and Limitations</td>
<td>11</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>12</td>
</tr>
<tr>
<td>Summary</td>
<td>13</td>
</tr>
<tr>
<td>CHAPTER TWO: REVIEW OF THE LITERATURE</td>
<td>14</td>
</tr>
<tr>
<td>Introduction</td>
<td>14</td>
</tr>
<tr>
<td>Systems Theory</td>
<td>15</td>
</tr>
<tr>
<td>Environmental Scanning</td>
<td>17</td>
</tr>
</tbody>
</table>
Diversity in Higher Education ................................................................. 18
Financial Distress .................................................................................. 22
Summary ................................................................................................. 24
CHAPTER THREE: METHODOLOGY ...................................................... 26
Introduction ........................................................................................... 26
Research Questions/Research Hypotheses .............................................. 26
Description of Participants/Sample ....................................................... 27
Instrumentation ...................................................................................... 28
Variables ............................................................................................... 29
Data Collection Procedures ................................................................. 31
Data Analysis Plan ................................................................................. 33
Assumptions ......................................................................................... 37
Ethical Considerations ........................................................................... 38
Summary ............................................................................................... 39
CHAPTER FOUR: FINDINGS ................................................................. 41
Introduction ........................................................................................... 41
Review of the Methodology ................................................................. 41
Data Analysis Procedures .................................................................... 42
Results ................................................................................................... 44
Results for Diversity .............................................................................. 44
Results for Financial Strength ............................................................... 47
Results for Change in Financial Strength .............................................. 49
Summary ............................................................................................... 50
CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS.

Introduction. 52

Summary of the Study. 52

Discussion of the Findings/Implications/Suggestions for Further Research. 55

Diversity 55

Financial Strength 62

Change in Financial Strength. 68

Recap of Major Findings. 76

Summary. 77

References. 79

Appendices. 83

List of ABHE Member Schools Used in this Study. 83

List of all Schools in the Dataset by IPEDS Size Category. 86

Schools Excluded from the Analysis of Hypotheses 3-8 Due to Lack of Data . . 121
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Summary of Category-Level Diversity Data by School Size.</td>
<td>46</td>
</tr>
<tr>
<td>Table 2</td>
<td>Summary of Category-Level Financial Strength Data by School Size</td>
<td>48</td>
</tr>
<tr>
<td>Table 3</td>
<td>Comparison of Financial Strength and Future Financial Strength Scores by School Size</td>
<td>50</td>
</tr>
<tr>
<td>Table 4</td>
<td>Comparison of the Mean Diversity Scores for ABHE Members to all Schools by IPEDS Category</td>
<td>58</td>
</tr>
<tr>
<td>Table 5</td>
<td>Comparison of the Mean Financial Strength Scores for ABHE Members to all Schools by IPEDS Category</td>
<td>63</td>
</tr>
<tr>
<td>Table 6</td>
<td>Comparison of the Range of Financial Strength Score Changes for ABHE Members to All Schools by IPEDS Category</td>
<td>72</td>
</tr>
</tbody>
</table>
List of Figures

Figure 1. Line graph showing number of high school graduates by ethnicity ............... 4
Figure 2. Scatter plot of schools in the 20,000+ IPEDS category ....................... 56
Figure 3. Scatter plot of schools with undergraduate enrollment less than 20,000 .. 57
Figure 4. Scatter plot of the financial strength scores for all schools in the dataset. .... 63
Figure 5. Scatter plot of financial strength score changes versus enrollment .......... 70
Figure 6. Scatter plot of financial strength score changes versus diversity ............ 71
CHAPTER ONE: INTRODUCTION

Background of the Problem

America has witnessed three discernible immigration waves. In the 18th century, English, Dutch, and Spanish settlers established the colonies that would ultimately coalesce into the United States of America. The next great immigration wave occurred between 1820 and 1870 bringing Irish escaping the potato famine and Germans seeking the American dream (Bergquist, 2008). The third wave saw more than 23 million immigrants from Italy, Russia, China and the Slavic nations arrive between 1881 and 1920 (Spickard, 2009). In 2015, America is in the midst of a fourth great wave of immigration with Hispanics immigrating from Central and South America in large numbers (Massey & Pren, 2012).

Like the previous waves, immigrants will fundamentally change the labor, healthcare, and education markets (Edmonston & Smith, 1997). Those institutions best prepared for the shift will survive and thrive. Those that cling to a business model based on an increasingly inaccurate view of America's demographics will struggle to succeed. It is unclear yet which institutions will be winners and which losers, and there is certainly still time for adaptation, but wise leaders seeking to define the future of their organizations will look to the research on past immigration waves to prepare for the current one.

Unfortunately, there is a great divide between practice and scholarship. In the introduction to his seminal work, Servant Leadership, Robert Greenleaf wrote, "Early on I made a distinction between wisdom and scholarship; and the former, what works well in practice, has long been my central interest" (Greenleaf, 1977, p. 1). Despite numerous
scholarly efforts to bridge the gap (and even to study the gap itself), the distinction remains. In the absence of (or sometimes in spite of) quality scientific scholarship, the harried executive must rely on media analysis, anecdotal evidence, and instinct.

But even for busy leaders in higher education, it must be easy to look at the headlines and determine that whatever is happening will have a significant effect on their industry. The difficult task is determining how their organization will be affected. Uncovering the necessary data can be time consuming and even the availability of the right data might not be helpful in answering this question; a busy executive has no time to do a proper and exhaustive analysis. Conducting this analysis, in anticipation of the needs of leaders in higher education, is one way that scholars can close the gap between research and practice.

Institutions of biblical higher education are a distinct subset of the higher education community. Unlike many of their secular peers which have survived past immigration waves and have thus adapted coping mechanisms, America's institutions of biblical higher education, with the exception of its very earliest, have never witnessed an immigration wave. While the movement dates to 1882 and the founding of the Missionary Training Institute (Nyack College) in New York, the vast majority of institutions of biblical higher education were founded after 1920 (Bereton, 2000) and the end of the third immigration wave.

In addition, institutions of biblical higher education tend to be small. For instance, 88% of member schools of the Association for Biblical Higher Education (ABHE) (72 of 82 schools used in this study) are classified as under 1,000 students, the smallest classification used by the Integrated Postsecondary Education Data System
Low enrollment and religious affiliation were both cited as risk factors for closure by Lyken-Segosebe and Shepherd (2013). Finally, being small and religious means, in popular opinion, to lack ethnic diversity. Whether it is the Baltimore Sun headline, "Small liberal arts colleges lack diversity" (Gerson, 2014) or this quote from the Bachelors Degree Online blog, "...many religiously-focused schools have low rates of diversity..." (Bachelors Degree Online, 2011) it seems to be a popular assumption that institutions of biblical higher education lack ethnic diversity. This assumption, however, has never been rigorously studied. Based on all of these factors, institutions of biblical higher education appear to be at greater risk than their secular peers to fluctuations in enrollment due to demographic changes.

Using a quantitative approach, this study performed correlation analyses and comparisons to test the relationships between diversity, enrollment size, and financial strength. This study then projected future revenues to determine how enrollment size and diversity might affect changes in financial strength. In addition, this study examined institutions of biblical higher education to determine if they are less diverse, financially weaker, and more negatively exposed to demographic change than their secular peers.

**Statement of the Problem**

From buggy whips to floppy disks, America's history is full of industries that failed to recognize how changes to their external environment would affect them. Changing technology and demography pose a near constant threat to the existence of virtually every industry. In the parlance of systems theory, these things are referred to as the external environment. Guiding their institutions through changes in the external environment is one of the fundamental roles of the educational administrator.
(Dembowski, 2007). According to the Department of Education, the external environment for higher education is changing dramatically. As illustrated in Figure 1, America's high schools will graduate 14% fewer African-Americans, 16% fewer whites, and 29% fewer American Indian/Native Alaskans by 2022 (Hussar & Bailey, 2013); however, the number of Hispanic and Asian graduates will increase by 64% and 23%, respectively.

Figure 1. Line graph showing number of high school graduates by ethnicity in millions by school year. From "Projections of education statistics to 2022," by Hussar and Bailey (2013).

What is clear from these projections is that enrolling more Hispanics and Asians is a good idea. What is unclear, however, is what effect these changes will have on the enrollment of colleges and universities as they exist today. If nothing is done, these changes pose an existential threat. If a school caters to Caucasians, African-Americans or Native Americans and the pool of potential applicants drops as predicted, enrollment is
sure to be affected. Declining enrollment means declining revenue. Declining revenue means financial distress. If not reversed quickly, reserves are depleted and the school must sell, merge, or close.

This quantitative dissertation studied the depth of the problem by measuring the size, diversity and financial strength of all private, four-year degree-granting institutions of higher education and determining how these three variables were affected by the changes predicted by the Department of Education. This study then analyzed institutions affiliated with the Association for Biblical Higher Education (ABHE) as a group to determine how they differ from the larger population and if these differences put them at greater risk.

Aim and Purpose of the Study

The aim of this study was to assist ABHE member schools to determine if they are at greater financial risk than their secular peers of similar size to changes in the demographic make-up of American high school students.

The purpose of this study was to use data from the Integrated Postsecondary Education Data System (IPEDS) to determine the relationships, if any, between diversity, enrollment size, and financial strength and to predict the financial effect of changes in high school graduates predicted by the Department of Education's *Projection of Education Statistics to 2022* (Hussar & Bailey, 2013) on private, not-for-profit universities in the United States.
Research Question(s)

This study was primarily concerned with the statistical relationship between the pool of high school graduates and the diversity and financial health of private, four-year institutions of higher education. The primary research question to be answered was:
Research Question #1: Are institutions of biblical higher education more at-risk to the projected demographic changes?

But this study also set out to test the veracity of common assumptions about institutions of higher education:
Research Question #2: Are larger schools more diverse than smaller schools?
Research Question #3: Are larger schools financially stronger than smaller schools?
Research Question #4: Are institutions of biblical higher education less diverse and financially weaker than their secular peers?

This study tested the hypothesis (Hypothesis #8) that there will be a greater variance between the financial strength score and future financial strength score for ABHE member schools than private, not-for-profit schools in the same IPEDS size category.

In order to test this hypothesis, a number of other hypotheses had to be tested:
Hypothesis #1: A correlation exists between enrollment and diversity.
Hypothesis #2: The mean of the diversity scores for ABHE member schools will be higher than the mean of private, not-for-profit schools in the same IPEDS size category.
Hypothesis #3: A correlation exists between enrollment and financial strength.
Hypothesis #4: A correlation exists between diversity and financial strength.
Hypothesis #5: The mean of the financial strength scores for ABHE member schools will be lower than the mean of private, not-for-profit schools in the same IPEDS size category.

Hypothesis #6: A correlation exists between enrollment and the amount of variance in financial strength and future financial strength scores.

Hypothesis #7: A correlation exists between diversity score and the amount of variance in financial strength and future financial strength scores.

**Method Overview**

This was a quantitative study of the relationship between three variables: diversity, enrollment size, and financial strength. Financial and enrollment information for all private, four-year, degree-granting institutions of higher education was drawn from the Integrated Postsecondary Education Data System (IPEDS). A correlation study was conducted using IPEDS size classification as the independent variable and diversity score (hypothesis #1) and financial strength score (hypothesis #3) as the dependent variables. In addition, diversity score was correlated to the financial strength score (hypothesis #4) and ABHE member status was used to compare financial strength (hypothesis #5) and diversity (hypothesis #2) with IPEDS size classification as a controlling variable.

After these initial hypotheses were tested, each school's enrollment numbers and tuition revenue were adjusted based on their ethnic diversity and the changes projected by the Hussar and Bailey (2013) report. New financial strength scores were calculated to create a new variable, future financial strength. Another correlation study was conducted using IPEDS size category as the independent variable and the variation between the financial strength scores, current and future, as the dependent variable (hypothesis #6). A
final correlation analysis was conducted using diversity score as the independent variable and the change in financial strength scores as the dependent variable (hypothesis #7). A final comparison was conducted using ABHE member status as the independent variable and the variation between financial strength scores as the dependent variable with IPEDS size category as a controlling variable (hypothesis #8).

Definition of Terms

Some of the terminology used in this study may be unfamiliar to readers or might have definitions that are unspecific. The following definitions are intended to provide clarity for such terminology as it was used throughout the course of this study:

**Institution of biblical higher education:** an educational institution conferring postsecondary degrees whose focus is biblical education or biblical integration. Institutions of biblical higher education can normally be identified by a requirement to complete a required number of hours of biblical study. These institutions were previously referred to as Bible colleges, but that term is considered to be insufficient to describe the breadth and depth of institutions in 2015. For the purpose of this study, the term institution of biblical higher education was coterminous with the term ABHE member school. The author acknowledges that a school outside the ABHE may meet the definition of an institution of biblical higher education, but chose to use the term ABHE member school as a proxy for the larger group. ABHE offers multiple methods by which institutions may affiliate; all schools affiliated with ABHE, regardless of method, that report data to IPEDS were considered ABHE member schools for purposes of this study.

**Diversity:** While there are many ways in which an organization can be diverse, this study focused solely on ethnic diversity. In order to place the sample institutions
onto a continuum of diversity, it was necessary to define the ideal diverse institution. For this study, the ideal diverse institution was defined as one having an equal percentage population from each of the 8 racial categories recognized in the Integrated Postsecondary Education Data System (IPEDS). The author recognizes that the industry norm is to attempt to match the ethnic diversity of the student population to the local or regional populations from which the school draws its students, but the author chose to use a scientific definition of diversity rather than the industry norm.

**Ethnicity:** Ethnicity was defined by the categories developed in 1997 by the Office of Management and Budget (OMB) and used by colleges and universities to report enrollment information to the Integrated Postsecondary Education Data System (IPEDS).

**Financial Strength:** Financial strength is a term without a universal definition. This study created a financial strength score that is a relative indicator of financial strength. In other words, it gives no indication of a school's absolute financial condition. Instead, it represents only their strength relative to other schools in the study. When used in this study, the term financial strength is referring to this financial strength score.

**Tuition:** Tuition includes fees, fines and any other student-related income.

While all of these terms could be defined in ways that differ significantly from the chosen definitions, the author has chosen these definitions specifically to narrow the scope of this study to a particular question affecting a particular group of institutions. Any attempt to interpolate this study to or replicate this study with a broader base of institutions might require redefining some of the key terms.
Assumptions

Because this study relies solely on IPEDS data, it was assumed the data are accurately entered and reflect the financial and enrollment situations at each school. This study assumed the continued primacy of the Christian mission of ABHE member schools and their continued membership in ABHE. This study assumed that the financial data represent actual conditions at the school and were not unduly affected by one-time events. Likewise, it assumed little of significance changed at the school between the time the data was reported and the time of this study.

Because no single measure of diversity or financial strength exists, this study developed those measures. The diversity score assumed a perfectly diverse institution was one that has an equal percentage enrollment in all 8 reportable IPEDS categories. In order to deal with the "race unknown" category, it was assumed that the population of the "race unknown" category mirrored the ethnic makeup of the known race population. The financial strength score was a sum of the ordered rankings of five common financial ratios. It was assumed that these two scores, diversity and financial strength, accurately represent the variables the study attempted to measure.

Finally, it was assumed that the projected changes in the population of high school graduates will take place as predicted. The accuracy and the importance of this study rest upon that assumption. Per the report,

For National Center for Education Statistics (NCES) projections of public high school graduates produced over the last 22 years, the mean absolute percentage errors (MAPEs) for lead times of 1, 2, 5, and 10 years out were 1.0, 1.1, 1.7, and 4.6, respectively. For the 1-year-out prediction, this means that one would expect
the projection to be within 1.0 percent of the actual value, on average. For NCES projections of private high school graduates produced over the last 11 years, the MAPEs for lead times of 1, 2, 5, and 10 years out were 0.7, 1.2, 4.1, and 4.9 percent, respectively (Hussar & Bailey, 2013, p. 7).

**Delimitations**

This study was carefully focused on the financial and diversity concerns of private, four-year colleges and universities, in general, and ABHE member schools more specifically. It is doubtful that the methodology and conclusions could be extrapolated to public or for-profit schools and no attempt has been made to ensure that the findings are applicable outside of this limited scope. In addition, this study focused on a unique historical event, the effect of changing demographics from 2012 to 2022. Because this event has not occurred in the past and is unlikely to recur in the same way in the future, the conclusions and analysis will be of little use outside of the stated ten-year period. The issue is of such importance at this time, however, as to merit study. It is hoped that while the results of the study may be of limited temporal usefulness, the methodology would be able to guide the future study of the then-current external environment.

**Limitations**

The author chose to work with only publicly-available standardized data reports. Because these reports require the same information from each respondent, format the data in the same way, and provide standard definitions of the data gathered, it was hoped that this method would provide the best consistency of results across the set of respondents. Because the information was standardized, it prevented a thorough understanding of any particular institution's financial situation. It is acknowledged that accounting maneuvers
exist that would make the information reported to IPEDS unrepresentative of the institution's true financial situation.

**Significance of the Study**

In systems theory, an open system is one that interacts openly with its environment. Higher education is an open system. It is the role of a leader in an open system to monitor the external environment and make changes as necessary to their organization to ensure that it adapts and thrives in its environment. This study was an attempt to explicate the external environment in which institutions of higher education are operating, providing their leaders with ample time and opportunity to make the necessary changes to ensure their organizations survive and thrive.

This study was intended to add to the growing body of literature on environmental scanning and the monitoring and analysis of the external environment in a business environment. While environmental scanning studies continue to be published, few new research studies have taken place in the field of environmental scanning in higher education in the last several years. In addition, this study was intended to help close the gap between practice and scholarship. This study used public record data in the hopes of illustrating to leaders that the data necessary to make well-researched decisions is readily available and to encourage researchers to make better use of the large quantity of data being produced annually in virtually every field.

Primarily, this study was intended to encourage administrators, trustees, and others with a vested interest in biblical higher education to carefully analyze the strategic position and financial viability of their institutions. The demographic changes taking place in America in 2015 and predicted to continue for the next seven years are of an
immediacy and scope unprecedented during the more than 100 year history of the Bible college movement, yet in trade journals and online forums, few, if any, are discussing this issue. It is hoped that this study will start those conversations.

Summary

Monitoring the composition of their customer base is a critical task for businesses; the business of higher education is no different. The Department of Education analysis predicts the ethnic profile of America's graduating high school seniors will change drastically. This study was intended to help ABHE member schools determine how this change will affect them.

Using quantitative methods, this study determined the relationship between enrollment size, diversity, and financial strength in higher education. In addition, it compared ABHE member schools to their private, not-for-profit peer groups to determine if ABHE member schools are likely to be more negatively affected by the demographic changes than their secular peers.
CHAPTER TWO: LITERATURE REVIEW

Introduction

As they have throughout its history, immigrants will fundamentally change the American labor, healthcare, and education markets (Edmonston & Smith, 1997). Guiding their institutions through changes in the external environment is one of the fundamental roles of the educational administrator (Dembowski, 2007). According to systems theory, if institutions of higher education were closed systems, they would not have to worry about change. But organizations are open systems (Luhmann, 1982) and like all open systems, they are affected by their environment. The process of monitoring the external environment for its effect on the organization is called environmental scanning. According to Chun Wei Choo, "Environmental scanning is the acquisition and use of information about events, trends, and relationships in an organization's external environment, the knowledge of which would assist management in planning the organization's future course of action" (Choo, 2001, pg. 1).

Fahey and Narayanan (1986) identified scanning as one element of the larger process they called external analysis. In addition to scanning, external analysis involves monitoring, forecasting and assessing (Fahey & Narayanan, 1986). The Department of Education assists leaders in higher education in scanning and monitoring the external environment. According to their forecasts, the number of high school graduates will decline for most ethnic groups (Hussar & Bailey, 2013) over the next decade. Building on the Department of Education's data, this study will assess the effect of this identified trend on the sample population of private colleges and universities in America.
This chapter will review the literature on systems theory, environmental scanning, diversity in higher education, and the financial conditions of America's colleges and universities. Together, these sections illustrate the base upon which this study was built.

**Systems Theory**

This study was grounded in systems theory in general, and open systems theory (OST) more specifically. Systems theory begins with a doctoral dissertation by Ludwig Von Bertalanffy in 1925 (Von Bertalanffy, 1972). Shortly before his death in 1972, Von Bertalanffy published "The History and Status of General Systems Theory" (Von Bertalanffy, 1972), a thorough review of the theory up to that point in time. Von Bertalanffy traced the origins of General Systems Theory (GST) back to the Aristotelian statement, "The whole is more than the sum of its parts" (p. 407). However, Greek thought and the scientific method began to move away from a holistic approach to research and embraced reductionism. The scientific order of the day, and the next 2000 years, was to reduce complex organisms to their most simple elements. However, scientists continued to bump into the Aristotelian problem that complex organisms could not be explained fully by studying their parts or as von Bertalanffy put it, "Since the fundamental character of the living thing is its organization, the customary investigation of the single parts and processes cannot provide a complete explanation of the vital phenomena" (p. 410).

Von Bertalanffy distinguished between two types of systems, open and closed. In an open system, matter is freely exchanged between an organism and its environment (Von Bertalanffy, 1956). In an open system, then, the importance of the environment cannot be overstated. It is worth remembering that Von Bertalanffy was a biologist.
While he acknowledged that GST could be of value to multiple disciplines, including the social sciences, he did no actual research in that area. It was Niklas Luhmann who did much of the pioneering research extending GST into the social sciences. Luhmann wrote, "systems theory uses systems analysis to disclose the structures and processes which characterize the societal system" (Luhmann, 1982, p.131). Luhmann's work also focused on the importance of the environment. From Luhmann's work, Petrovic, Kittl, and Teksten were able to make the statement, "systems theory...posits that a company can be seen as a separate individual social system bounded by the environment conditional on open information exchange" (2001).

From these GST concepts, organizational theorists developed the concept of environmental scanning. According to Chun Wei Choo, "Environmental scanning is the acquisition and use of information about events, trends, and relationships in an organization's external environment, the knowledge of which would assist management in planning the organization's future course of action" (Choo, 2001, p. 1). For institutions of higher education, their pool of potential students is a key aspect of the external environment that must be monitored.

Collecting data and recognizing trends are only part of the process of environmental scanning. For institutions of higher education, that work has already been done; the Department of Education has collected the data and identified a trend in high school graduates. They project that over the next decade, the number of high school graduates will decline for most ethnic groups (Hussar & Bailey, 2013). The other part of environmental scanning is determining how those changes in the external environment
will affect a given organization. This study set out to perform that analysis for private 
colleges and universities in the United States.

**Environmental Scanning**

The history of environmental scanning can be traced back to Francis Joseph 
Aguilar and his book "Scanning the Business Environment" (1967). Aguilar studied the 
information gathering techniques of business managers. He defined scanning as the 
systematic collection of external data in order to filter important information from 
unimportant and to provide an early warning system of changing external conditions 
(Aguilar, 1967). Joseph Francis Coates (1985) identified the objectives of environmental 
scanning as detecting trends and events that might be important to the organization, 
defining the threats and/or opportunities represented by those trends or events, and 
promoting a forward-thinking mentality in management.

There is no clear consensus on how to conceptualize scanning. Aguilar (1967) 
identified four types of scanning: undirected viewing, conditioned viewing, informal 
searching, and formal searching. Morrison, Renfro, and Boucher (1984) simplified 
Aguilar's categories into active and passive scanning. Fahey, King, and Narayanan 
(1981) instead categorized scanning as irregular, periodic, or continuous.

Many colleges and universities already engage in environmental scanning. 
Friedel, Coker, and Blong (1991) conducted a study of 991 members of the American 
Association of Community and Junior Colleges (AACJC). They received 601 responses. 
Of those responding, 248 (41.3 percent) indicated they conducted some form of 
environmental scanning. Of relevance to this study, however, only 36 of the 601 (6 
percent) had enrollments of less than 500. Of those 36, only 8 (or 22.2 percent)
conducted environmental scanning. Unfortunately, Friedel et al. chose to categorize schools by enrollment from 0-499 and 500-1999. This study, following the IPEDS classifications, uses "under 1,000" as the smallest category of institution. This difference is important because the percentage of schools in the 500-1999 category performed environmental scanning at a significantly higher rate (85 of 247 or 34.4 percent) than those institutions below 500 students. It is impossible to determine the breakdown of schools within the category 500-1999, but because each successive category shows an increasing percentage of employment of environmental scanning, it is assumed that the distribution in the 500-1999 category is left-skewed and if the data were re-categorized into 0-999, the implications for this study would remain unchanged. The biggest drawback to the Friedel study is that the data are 25 years old and it does not appear that this study has been replicated since.

A generally contemporary survey was conducted by Joan Meixell (1990) a year earlier and found that 51 percent of 105 doctorate-granting and research institutions employed formal environmental scanning techniques. Taken together, these two studies indicate that roughly half of all college and universities employ environmental scanning, but that larger schools are more likely to employ scanning than smaller schools. This magnifies the importance of this study for ABHE member schools, of which nearly 90% fall into the smallest IPEDS classification, because they are statistically less likely to perform this type of environmental scanning and analysis on their own.

**Diversity in Higher Education**

A large and growing body of literature has sought to validate the importance of diversity in higher education. Generally, research into diversity in higher education has
fallen into four categories: subjective assessments of the benefits of interaction, faculty assessments of the implications for student learning, analyses of monetary and nonmonetary returns to students and communities, and analyses of diversity experience on educational outcomes (Gurin et al., 2002).

As an example of the first category, Orfield and Whitla (1999) studied the experience of students at seven prominent law schools. This qualitative study surveyed students to gather their reactions to interacting with students from other ethnicities in a variety of settings. Their results indicated that students considered diversity to be an enriching experience. Many students shifted their opinions on civil rights, but most felt the diversity experience could have been improved (Orfield and Whitla, 1999).

As an example of the second type, Maruyama, Moreno, Gudeman, and Marin (2000) conducted three qualitative studies by surveying faculty and administrators of colleges and universities. All of the studies reported an overwhelming support for diversity and a belief in the values of a diverse student body. In addition, virtually all respondents felt diversity was an integral part of the mission of higher education (Maruyama et al., 2000).

In the third category, Bowen and Bok found that minorities who graduated from college tended to earn higher salaries and be leaders in their community in higher percentages than their non-college educated peers of the same ethnicity (Bowen and Bok, 1998). In other words, society has a vested interest in educating minorities because of the positive benefits for the community.

As an example of the fourth category, Gurin, Dey, Hurtado and Gurin conducted a study of two longitudinal databases, one a national sample and the other from the
University of Michigan. Their study showed a consistent positive relationship between diversity and learning outcomes in both sample databases indicating that diversity has a genuine and lasting effect on student learning (Gurin et al., 2002).

While these studies show the real and important influence of diversity in higher education, both the practitioner and the scholar are faced with the very real challenge of measuring diversity. The most popular way to measure ethnic diversity in higher education is the USA Today Index of Ethnic Diversity (Meyer & McIntosh, 1992). Its popularity is boosted by its use as the basis for U.S. News & World Reports annual campus ethnic diversity rankings (Morse, 2014). The USA Today Index is a probability index that measures the likelihood that two people selected at random from a population will differ in ethnic identification. The USA Today index has the advantage of being able to measure more than one dimension of diversity. Meyer and McIntosh use race and national origin as an example, differentiating between white and black as race categories and Hispanic and non-Hispanic as categories for national origin. So in the USA Today index, two members of the sample population could be white/non-Hispanic or white/Hispanic and be considered different categories for purposes of measuring diversity. While this is a fairly common distinction used in ethnographic studies, the IPEDS data on which this study relies do not differentiate between race and national origin. Since 1997, Hispanic has been considered an ethnicity by the Office of Management and Budget upon whose definitions IPEDS relies by statute (20 U.S.C. 9543(a)(3)).

Meyers and McIntosh have based their diversity index on a more generic mathematical formula known as Simpson's diversity index (Schilling, 2002). Schilling's
article both entitled and about *Measuring Diversity in the United States* explained the mathematical logic behind diversity indexes and explains the differences between several possible methods of measuring diversity. In addition to Simpson's index, Schilling explicated another serious candidate for diversity researchers, Shannon's diversity index. While Shannon's index is much more sensitive to changes in minority populations, it is also heavily dependent on how those subgroups are defined. Changes in the subgroup definitions would have a large influence on Shannon's index whereas they have a minimal effect on Simpson's index. When trying to measure something in which the definitions change for varying political and public relations reasons, Simpson's index proves superior.

These are not the only two options from which to choose, however; Meyer and McIntosh point out that the most obvious way to measure diversity "would be to compare a population's ethnic distribution with the most diverse distribution possible" (1992, p. 57). They reject this measure because "Such a comparison would not be intuitively appealing because many of the cells would be quite small if not empty. And the resulting number would lack an easy-to-grasp interpretation" (p. 57). Betraying their reliance on Simpson's index, Meyer and McIntosh admitted that minority populations are of little consequence in measuring diversity with Simpson's index; it is primarily the majority population that matters. But their greatest objection is that such a methodology can not easily address multiple measures of diversity. As has already been mentioned, the nature of the data collected by IPEDS eliminates this problem, making the most obvious measure of diversity the best measure for this study.
A common objection to using such an absolute measure of diversity is that it is not a realistic goal for colleges and universities to achieve due to geographic and demographic realities. Many colleges and universities prefer to measure their diversity against the diversity of the population from which they draw their students. While that might work for enrollment planning purposes, it is not an effective measure for researchers who would have to find a method of normalizing data from different regions. In addition, it could provide for perverse outcomes. For instance, under this methodology, a school from an area with a population that was 95% Caucasian would be considered diverse with a 95% Caucasian student population. That would not be an accurate appellation, nor would such "diversity" trigger the kinds of benefits the studies described early have found in diverse student populations. Finally, this study's approach to diversity has the advantage of being mathematically simple. Most social science researchers and leaders in higher education will not have the advance math skills necessarily to work with concepts such as Simpson's or Shannon's index. This study's approach to measuring diversity, therefore, has the advantages of being simple, quick, easy-to-understand, and more rigorous than other proposed methodologies.

Financial Distress

While much has been written about the financial stress of individual college students, very little scholarly research has focused on the financial stress of the institutions themselves. This difficulty is compounded by the temporal nature of finance in higher education. As a result of the 2008 financial crisis, very few things written more than six years ago are relevant to the financial situation in 2015. And while the 2008
financial crisis has spurred a number of popular articles about college costs and student loans, very little scholarly research has been done on the topic.

Three studies are worth highlighting, the most important of which is the book *Turnaround: Leading Stressed College and Universities to Excellence* by James Martin and James Samels (2009). Martin and Samels identified 20 characteristics of stressed institutions. Eleven of the 20 are finance-related. They are: tuition discounting more than 35 percent, tuition dependency more than 85 percent, student default rate above five percent, debt service more than 10 percent of annual budget, less than one-to-three ratio between endowment and operating budget, average tuition increase greater than 8 percent for five years, deferred maintenance at least 40 percent unfunded, short-term bridge financing required in the final quarter, less than 10 percent of the operating budget for technology, average alumni gift is less than $75 and fewer than 20 percent of alumni give annually. One additional characteristic that is critical to this study, but not finance-related is enrollment of less than 1000. A number of these factors will be included in the calculation of financial strength for the institutions in the sample population.

Lyken-Segosebe and Shepherd (2012) identified a similar list of characteristics for failing institutions: low enrollment, low endowment levels, high debt, and deferred maintenance. While their study is more recent, it relies heavily on newspaper and website articles, weakening the quality of their assertions. Still, their research is valuable in that it focused on closed institutions, indicating the potentially severe consequences of ignoring these financial warning signs.

Denneen and Dretler (2012) also wrote a report about what they perceive to be warning signs of financial risk. Their report is unique in that it was not written for
scholarly purposes. Produced by the Bain Corporation, a higher education consulting firm, the report was likely an attempt to gain consulting business. Still, the report's conclusions mirrored those of the previous two to some extent. Denneen and Dretler considered schools to be at risk if they are not a top-ranked institution, have declining financials, and have recently taken drastic measures to shore up the financials (Denneen & Dretler, 2012). While their report may not add any new information to the conversation, it does provide a unique perspective from a firm renowned for its financial management.

Summary

The literature reviewed gives a framework upon which to structure an analysis of the external environment of institutions of higher education. Through the principles of environmental scanning, derived from general systems theory, we understand the importance of monitoring the external environment of an organization. More importantly, Fahey and Narayanan (1986) gave a framework for how to proceed with the analysis of the external environment. They identified three levels of the environment: the task environment, the industry environment, and the macroenvironment. Student populations belong to the task environment, however, larger geopolitical trends, such as immigration, belong to the macroenvironment. Therefore, two of the three levels of environment are implicated in this study.

The work of scanning, monitoring and forecasting the external environment has been completed by the Department of Education. They have predicted that the number of high school graduates will decline for most ethnic populations over the next decade (Hussar & Bailey, 2013). Because small schools tend to engage in environmental
scanning less than larger schools (Friedel, Coker, & Blong, 1991), this study focused additional effort on member schools of the ABHE. This is also consistent with Martin and Samels (2009) metric for financially stressed universities (enrollment of less than 1000 students). Using some of the financial metrics provided by Martin and Samels (2009), this study measured the current fiscal strength of the sample population and then attempted to predict how those financial metrics will be affected by the demographic changes forecast by the Department of Education (Hussar & Bailey, 2013).
CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this study was to determine the relationship between diversity, enrollment size, and financial strength for America's private, four-year colleges and universities. This study focused particular attention on small colleges and universities that might lack the resources of large universities and therefore might be unable to conduct a similar analysis on their own (Friedel, Coker, and Blong, 1991).

The Department of Education predicts that the number of high school graduates will decline over the next decade in most ethnic groups (Hussar & Bailey, 2013). As Jason Lane of the Rockefeller Institute of Government has written, "... those institutions that don’t learn to adapt to the new reality will likely close doors by the end of the decade" (Lane, 2013). It was beyond the scope of this study to determine whether such closings and a consolidation of the higher education sector would be a positive or negative for higher education in the United States. What is clear, however, is that colleges and universities must take the changing demographics seriously and treat them as an existential threat.

Research Questions/Research Hypotheses

In order to analyze the threat posed by changing demographics, this study used quantitative methods to determine if a relationship exists between the ethnic diversity of a college or university and the financial effect of enrollment changes based on the demographic data. In order to answer this primary question, this study also determined if a relationship exists between the size of a school and its ethnic diversity and the size of a school and its financial strength.
Using financial and demographic data obtained from the Integrated Postsecondary Education Data System (IPEDS), this study tested the following hypotheses:

Hypothesis #1: A correlation exists between enrollment and diversity.

Hypothesis #2: The mean of the diversity scores for ABHE member schools will be higher than the mean of private, not-for-profit schools in the same IPEDS size category.

Hypothesis #3: A correlation exists between enrollment and financial strength.

Hypothesis #4: A correlation exists between diversity and financial strength.

Hypothesis #5: The mean of the financial strength scores for ABHE member schools will be lower than the mean of private, not-for-profit schools in the same IPEDS size category.

Hypothesis #6: A correlation exists between enrollment and the amount of variance in financial strength and future financial strength scores.

Hypothesis #7: A correlation exists between diversity score and the amount of variance in financial strength and future financial strength scores.

Hypothesis #8: There will be a greater variance between the financial strength score and future financial strength score for ABHE member schools than private, not-for-profit schools in the same IPEDS size category.

**Description/Rationale of Participants/Sample**

The population of this study was all institutions of postsecondary education in the United States. The sample was limited to private, non-profit, four-year degree granting institutions, because the funding mechanisms of for-profit, public and two-year colleges differ so greatly that comparing financial profiles would provide little useful information. The initial sample consisted of 1,682 schools. The sample was reduced by eliminating 18
schools that failed to provide any data to IPEDS. An additional 9 schools were eliminated because they reported over 50% of the students in the "race unknown" category. The author determined that this rendered their diversity data unreliable. Finally, 249 schools reported no undergraduate enrollment and were also eliminated. The final sample for the diversity analysis was 1,406 schools. Another 89 schools reported no or insufficient financial data with which to conduct the financial analysis. The dataset for the financial analysis consisted of 1,317 schools.

**Instrumentation**

All data was collected from the Integrated Postsecondary Education Data System (IPEDS). IPEDS "is a system of interrelated surveys conducted annually by the U.S. Department’s National Center for Education Statistics (NCES)" (nces.ed.gov). IPEDS reporting is mandatory for any school receiving Title IV funds such as student loans or Pell grants. Over 7,500 institutions report data to IPEDS annually. IPEDS collects data in three phases: a Fall phase from September to October, a Winter phase from December to February, and a Spring phase from December to April. This study used fall enrollment and finance data that were collected as part of the spring collection phase.

Established in order to assist the NCES in its data collecting responsibilities, IPEDS was phased-in between 1985 and 1999 (Fuller, 2011). Fall enrollment data were first collected in 1986-1987 and finance data were first collected in 1987-1988 (Fuller, 2011). IPEDS reporting was made mandatory by the Higher Education Act Amendments of 1992 (P.L. 102-325). Of interest to this study, gender and race reporting was added to the fall collection cycle by the NCES reauthorization statute (P.L. 103-382) and ethnicity was added in 2002 (20 U.S.C. 9543(a)(3)). The categories for race/ethnicity in use at the
time of this study were required by the Department of Education's "Final Guidance on Maintaining, Collecting, and Reporting Racial and Ethnic Data to the U.S. Department of Education" (Federal Register, October 19, 2007). IPEDS mandated use of the Office of Management and Budget's 1997 Race/Ethnicity Standards beginning with the 2011-2012 collection year (Fuller, 2011).

**Variables**

This study tested the relationships between three variables: enrollment size, ethnic diversity, and financial strength. In order to test the final three hypotheses, the financial strength score was recast with projected data in order to create a future financial strength score. The change between the financial strength score and the future financial strength score was also used as a variable. ABHE member status was used as a controlling variable.

**Enrollment Size**

Enrollment size used the total undergraduate enrollment without regard to full or part time status. When schools were looked at as a group, the IPEDS size classification was used; IPEDS size classification includes both undergraduate and graduate populations, however, only the undergraduate populations were used in this study. Enrollment size was the independent variable for hypotheses one, three, and six and a controlling variable for hypotheses two, five and eight.

**Financial Strength**

The dependent variable for hypotheses three and four was financial strength as measured by a financial strength score developed for this study. Each school was ordered ranked on five different measures of financial strength: endowment to revenue ratio,
liabilities to revenue ratio, liabilities to net assets ratio, tuition discounting percentage, and percentage of revenue obtained from enrollment (e.g., tuition and fees, housing, and meal plans). The order rankings in each category were summed to create a financial strength score.

**Ethnic Diversity**

The dependent variable for hypotheses one, four, and seven was ethnic diversity. Each school was given an ethnic diversity score. Assuming a perfectly diverse institution would have an equal number of the eight racial categories used in IPEDS reporting, a perfectly diverse institution would have 12.5% enrollment of each racial group (100/8). Therefore, the difference between the reported enrollment percentage and 12.5% was calculated for each of the 8 racial categories. The absolute values of the differences were summed to create a diversity score of between zero and 175 for each of the institutions in the sample. Ethnic diversity was the independent variable for hypothesis four.

**ABHE Member Status**

ABHE member status was used as a controlling variable for hypotheses two, five, and eight. Any school affiliated with ABHE, regardless of affiliation category, was considered an ABHE member provided they reported data to IPEDS. This is a binary variable; each school was either a member or a non-member.

**Future Financial Strength Score**

For hypotheses six, seven and eight, the financial strength score was recalculated to develop a new variable, future financial strength. The change in scores between financial strength and future financial strength was used as the dependent variable for hypotheses six and seven and the variable used for comparison in hypotheses eight. The
future financial strength score was created by adjusting enrollment numbers based on the percentage changes predicted in the Hussar and Bailey report (2013). The percentage increase in total enrollment was calculated and tuition revenue was increased by the same percentage. The financial strength score was recalculated using this new revenue number, the schools were re-ranked, and the new ranks summed.

**Data Collection Procedures**

Data were collected in a single data download from the IPEDS data center (nces.ed.gov/ipeds/datacenter/) on January 21, 2015. Data were downloaded in .csv format for use in Microsoft Excel. Schools were selected using the "Private, not-for-profit, 4-year or above" filter under the "Sector" heading and the "Degree-granting" filter under the "Degree-granting status." This study used the most recent data available: enrollment data from the fall of 2013 and financial data from the 2012-2013 fiscal year.

Under the "Enrollments" > "Frequently used enrollment variables: Fall 2013" tabs, the following data fields were collected:

- Institution size category
- Total enrollment
- Undergraduate enrollment
- Percent of undergraduate enrollment that are American Indian or Alaska Native
- Percent of undergraduate enrollment that are Asian
- Percent of undergraduate enrollment that are Black or African American
- Percent of undergraduate enrollment that are Hispanic/Latino
- Percent of undergraduate enrollment that are Native Hawaiian or Other Pacific Islander
• Percent of undergraduate enrollment that are White
• Percent of undergraduate enrollment that are two or more races
• Percent of undergraduate enrollment that are race/ethnicity unknown
• Percent of undergraduate enrollment that are nonresident alien

Under the "Finance" > "Private not-for-profit institutions or Public institutions using FASB: Fiscal year 2013" tab, the following data were collected:

• Statement of financial position
  o Total liabilities
  o Total unrestricted net assets
• Summary of changes in net assets
  o Total revenues and investment returns
• Student grants
  o Allowances applied to tuition and fees
• Revenues and investment return
  o Tuition and fees - Total
  o Tuition and fees - Unrestricted
  o Sales and services of educational activities - Unrestricted
  o Sales and services of auxiliary enterprises - Unrestricted
  o Total revenues and investment return - Unrestricted
• Details on endowment assets
  o Value of endowment assets at the end of the fiscal year.
Data Analysis Plan

Data analysis was conducted in three phases. First, diversity data were analyzed and hypotheses one and two were tested. Next, financial strength scores were calculated and hypotheses three, four, and five were tested. Finally, future financial strength scores were calculated and hypotheses six, seven, and eight were tested.

Diversity

Hypothesis #1. The first step of the data analysis was to calculate a diversity score for each school. Each of the IPEDS eight race categories was assigned an ideal value of 12.5 (100/8). Each school's divergence from this ideal value in each category was calculated by subtracting the school's percentage enrollment from 12.5. The absolute value of the divergence in each category was summed to produce a diversity score. Scores ranged from zero to 175. Lower scores represented more diverse institutions.

Next, a correlation analysis was conducted for the entire dataset using undergraduate enrollment as the independent variable and diversity score as the dependent variable. The calculation was conducted using the `correl` function in Microsoft Excel. Next, the schools were divided into their IPEDS size categories; IPEDS classifies schools into five categories: 20,000+, 10,000-19,999, 5,000-9,999, 1,000-4,999, and less than 1,000. The descriptive statistics for each category were calculated using that function in Excel. The mean diversity scores of the five size classifications were compared and a scatter plot was created to look for visual evidence of a relationship between the two variables.
**Hypothesis #2.** Hypothesis two was tested by comparing the mean diversity scores for ABHE member schools as a group to the mean scores for their IPEDS size classification as a whole.

**Financial Strength**

**Hypothesis #3.** To begin the analysis of financial strength, a financial strength score was calculated for each school. Each school was ranked by five different measures. Each school's rankings were added together to provide a financial strength score between five and 6,585. First, each school's endowment funds were divided by its total revenues. Schools were rank ordered in this category from high to low. Next, total liabilities were divided by total revenues. Schools were ranked from low to high. Then, total liabilities were divided by net assets. Again, schools were ranked from low to high. Fourth, allowances applied to student accounts were divided by the sum of undergraduate tuition and those same allowances to determine the percentage of tuition discounting. Schools were ranked from low to high. Finally, the sum of undergraduate tuition, sales of education activities, and sales of auxiliary services was divided by total revenue to determine the percentage of income derived from student enrollment. Schools were rank ordered from low to high. The ranks for each school were summed to create a financial strength score. The lower the financial strength score, the stronger the school was financially compared to its peers.

Next, a correlation analysis was conducted for the entire dataset using undergraduate enrollment as the independent variable and financial strength score as the dependent variable. The calculation was conducted using the `correl` function in Microsoft Excel. Next, the schools were again divided into their IPEDS size categories.
The descriptive statistics for each category were calculated using that function in Excel. The mean financial strength scores of the five size classifications were compared and a scatter plot was created to look for visual evidence of a relationship between the two variables.

**Hypothesis #4.** Hypothesis four was tested by conducting a correlation analysis using the diversity score of each school as the independent variable and the financial strength score as the dependent variable. The analysis was conducted using the `correl` function in Microsoft Excel. The schools were again divided into their IPEDS size categories. The descriptive statistics for each category were calculated using that function in Excel. The mean financial strength scores of the five size classifications were compared and a scatter plot was created to look for visual evidence of a relationship between the two variables.

**Hypothesis #5.** Hypothesis five was tested by comparing the mean financial strength scores for ABHE member schools as a group to the mean scores for their IPEDS size classification.

**Future Financial Strength**

**Hypothesis #6.** To test hypothesis six, the financial strength score was modified by adjusting the undergraduate enrollment (and thus student-generated revenue) according to the demographic changes predicted by the Department of Education. This was done by multiplying the percentages of each racial category calculated for the ethnic diversity score (after accounting for "Race unknown") by the undergraduate population. These numbers were then adjusted up or down by the percentage changes for each racial
category as predicted in the Hussar and Bailey report (2013) and new total enrollment numbers were calculated by adding the new totals for each racial category.

Undergraduate tuition and fees per student were calculated by dividing undergraduate enrollment by total enrollment and multiplying the resulting percentage by the reported total tuition and fees number. The undergraduate tuition and fees were then increased or decreased by the percentage change in the total enrollment. Sales and services of educational activities and auxiliary enterprises were increased or decreased by the total percentage increase or decrease in undergraduate enrollment. Schools were re-ranked in each of the five measures described above and a new financial strength score was calculated. This variable will be referred to as future financial strength throughout the study.

The change in rank between financial strength and future financial strength scores was calculated for all schools by subtracting the financial strength score from the future financial strength score and the mean and ranges for each IPEDS size category were compared. A correlation analysis was also conducted using each school’s individual score as the dependent variable and total undergraduate enrollment as the dependent variable.

**Hypothesis #7.** Hypothesis seven was tested by conducting a correlation analysis between diversity score and the financial strength score change in Microsoft Excel using the `correl` function for all schools. The means score change was calculated for each IPEDS size category and the means were compared. Finally, a scatter plot was created to look for visual indications of a relationship.
Hypothesis #8. Hypothesis eight was tested by comparing the mean change in financial strength scores for ABHE member schools as a group to the mean change in scores for their IPEDS size classification. The range of changes was also compared.

Assumptions

It was assumed that institutions reported their data honestly and accurately. While IPEDS has safeguards to prevent the entering of clearly erroneous data, it is entirely possible that number transpositions could and did occur, especially with a dataset of this size. It was assumed that the sample size will be large enough to prevent any such errors, including rounding errors, from affecting the study's findings.

No standard definition of a perfectly diverse institution exists; therefore, it was necessary to craft one for this study. The author has chosen to define the diverse institution as one that has an even distribution of its student population across all reportable categories. While the author acknowledges that there are other possible ways to define diversity in higher education, the assumption was made that this way best illustrates diversity as intended by the research questions and hypotheses.

Like diversity, no single indicator of the financial strength of a university exists. In calculating and manipulating the financial strength and future financial strength scores, several important assumptions were made. First, it was assumed that revenue is split proportionately between undergraduate and graduate students. In reality, this is usually not the case. Graduate tuition is often higher than undergraduate tuition; therefore graduate students produce a disproportionate percentage of tuition revenue. Second, the calculations to determine future financial strength assumed that all undergraduate students live on campus and equally produce auxiliary income. This is obviously not
true, but given the data available in IPEDS, it was a necessary assumption. The author believes that neither of these assumptions had a significant effect on the findings.

**Ethical Considerations**

Because all of the data used in this study are available as public record, this study faced few ethical challenges in the collection and storage of data. The study was submitted to the Institutional Review Board (IRB) of Creighton University under the social science exempt category and the educational assessment subcategory. It was determined this study was not human subject research and was exempted from further IRB review.

To avoid ethical problems in choosing the sample, strict guidelines were adopted and no exceptions to those guidelines were made. Likewise, statistical tests and modeling were applied equally to the entire sample. Transparency and accuracy in relating the studies methodology allowed the author's committee to ensure that the sample guidelines, statistical tests, and modeling choices were not designed in a way to generate a specific outcome.

It is anticipated that the results of this study will be submitted for publication to a peer-reviewed journal. While the hypotheses have been written in such a way that the findings are related to groups of institutions and not individual institutions, the author may choose to report the results of the analyses of individual institutions as an example or case study. Because the data are public record, no institution has the right to expect privacy nor has the author made any such representations or assurances to any institution. Despite this, the author recognizes his ethical responsibility to present the findings in a
fair and equitable manner that does not unduly harm the reputation of any individual institution or groups of institutions.

Summary

This study uses quantitative methods to research the relationships between three variables: enrollment size, ethnic diversity, and financial strength. Using IPEDS data and correlation or comparison techniques as appropriate, the author hoped to determine whether demographic changes predicted by the Department of Education (Hussar & Bailey, 2013) pose an existential threat to America's private colleges and universities. In particular, the study set out to determine if the magnitude of that threat is greater for small colleges and universities than it is for large colleges and universities with a particular focus on institutions of biblical higher education as represented by ABHE member schools.
CHAPTER FOUR: FINDINGS

Introduction

The purpose of this study was to use data from the Integrated Postsecondary Education Data System (IPEDS) to determine the relationships, if any, between diversity, enrollment size, and financial strength and to predict the financial effect of changes in high school graduates predicted by the Department of Education's *Projection of Education Statistics to 2022* (Hussar & Bailey, 2013) on private, not-for-profit universities in the United States. Armed with these data, the aim of this study was to assist ABHE member schools to determine if they are at greater financial risk than their secular peers of similar size to changes in the demographic make-up of American high school students.

In order to meet this aim, the study set out to answer the question: Are institutions of biblical higher education more at-risk to the projected demographic changes? In addition, this study also set out to test the veracity of common assumptions about institutions of higher education: are larger schools more diverse than smaller schools, are larger schools financially stronger than smaller schools, and are institutions of biblical higher education less diverse and financially weaker than their secular peers?

In conducting this study, the author tested eight hypotheses:

Hypothesis #1: A correlation exists between enrollment and diversity.

Hypothesis #2: The mean of the diversity scores for ABHE member schools will be higher than the mean of private, not-for-profit schools in the same IPEDS size category.

Hypothesis #3: A correlation exists between enrollment and financial strength.

Hypothesis #4: A correlation exists between diversity and financial strength.
Hypothesis #5: The mean of the financial strength scores for ABHE member schools will be lower than the mean of private, not-for-profit schools in the same IPEDS size category.

Hypothesis #6: A correlation exists between enrollment and the amount of variance in financial strength and future financial strength scores.

Hypothesis #7: A correlation exists between diversity score and the amount of variance in financial strength and future financial strength scores.

Hypothesis #8: There will be a greater variance between the financial strength score and future financial strength score for ABHE member schools than private, not-for-profit schools in the same IPEDS size category.

This chapter will provide a brief overview of the methodology, reexamine the data analysis procedures, and detail the results of the data analysis.

**Review of the Methodology**

This was a quantitative study using IPEDS data. Financial and enrollment data were collected for all private, four-year degree-granting institutions of higher education in the United States. Correlation analyses were conducted using the entire dataset for hypotheses two, three, four, six, and eight to determine if a relationship exists between size and diversity, size and financial strength, diversity and financial strength, size and the variability in financial strength, and diversity and the variability in financial strength. Mean diversity and financial strength scores for each IPEDS size category were used to compare the diversity and financial strength, and financial strength change for each category. In addition, the mean scores for each variable for ABHE member schools were
used to compare diversity, financial strength, and financial strength variance with their IPEDS size category as a whole for hypotheses one, five, and seven.

Data Analysis Procedures

This study explored the relationship between four variables for four-year, private, not-for-profit colleges and universities in the United States. The four variables were size, diversity, financial strength, and future financial strength. As the variable for size, the undergraduate enrollment as reported to IPEDS was used for each school. No adjustments were made to this reported value. Diversity, financial strength, and future financial strength scores were calculated for each school.

Diversity

The diversity score was calculated using each school's reported enrollment percentages by ethnicity. For each ethnic category, the difference between the school's reported enrollment and a value of 12.5% was calculated. The absolute value of the differences was summed to create a single diversity score with possible values ranging from zero to 175 and a lower score indicating a more diverse institution. A correlation analysis was then conducted using the correl function in Microsoft Excel with the calculated diversity score and undergraduate enrollment as the variables. The schools were then divided into their IPEDS size categories and a mean diversity score was calculated for each group. ABHE member schools were then separated from their peer groups and mean diversity scores were calculated.

Financial Strength

A financial strength score was developed for each school by calculating five financial ratios and rank ordering the schools in each category. The rank orders were
then summed to create a financial strength score with a lower score representing a stronger financial position. The ratios calculated were endowment to revenues, liabilities to revenues, liabilities to net assets, percentage of revenue from tuition, and percentage of tuition discounting. The endowment to revenues ratio was rank ordered from high to low. The other four ratios were rank ordered from low to high. A correlation analysis was conducted using the `correl` function in Microsoft Excel with the calculated financial strength score and undergraduate enrollment as the variables. A second correlation analysis was conducted using the financial strength score and the diversity score as the variables to be compared. The schools were then divided into their IPEDS size categories and a mean financial strength score was calculated for each group. ABHE member schools were then separated from their peer groups and mean financial strength scores were calculated.

**Future Financial Strength**

The financial strength score was then recalculated to reflect the projected changes in the pool of high school graduates as predicted by the Department of Education (Hussar & Bailey, 2013). Revenue per student was calculated by dividing total tuition and fee revenue by undergraduate enrollment. Then each school's undergraduate enrollment was divided into its ethnic categories as reported to IPEDS. The enrollment in each ethnic category was adjusted up or down according to the Department of Education's projections. The adjusted enrollments were then summed to produce a new enrollment number. The new enrollment number was then multiplied by the revenue per student amount to produce a new student revenue number. The three financial ratios that used this variable were then recalculated, rank ordered, and the rank orders of all five ratios
were again summed to produce a future financial strength score. The difference between the financial strength score and the future financial strength score was calculated. The \textit{correl} function in Microsoft Excel was then used to determine if a correlation existed between the change in the financial strength scores and both diversity and enrollment. The schools were then divided into their IPEDS size categories and a mean future financial strength score was calculated for each group. Finally, ABHE member schools were separated from their peer groups and mean future financial strength scores were calculated for the two IPEDS size categories represented.

\textbf{Results}

The analysis conducted for this study analyzed private colleges and universities in three areas: diversity, financial strength, and change in financial strength. The results are therefore presented in this same manner.

\textbf{Diversity}

The dataset used for diversity scores consisted of 1,406 schools. Undergraduate enrollment ranged from 2 to 47,464 with a mean enrollment of 2,008. Each school was given a diversity score ranging from a possible zero (most diverse) to 175 (least diverse). Diversity scores actually ranged from 60.26316 to 175. A total of 91 schools reported only a single ethnic group resulting in the poorest diversity score of 175. The mean diversity score was 130.3394 and the standard deviation of the diversity scores was 24.25964. For reference purposes, the diversity score for the population of the United States calculated using this methodology was 100.26 (using 2013 data retrieved from quickfacts.census.gov on April 4, 2015).
A correlation analysis was conducted using the `correl` function in Microsoft Excel with undergraduate enrollment as one variable and the diversity score as the other variable. The resulting correlation coefficient \( r \) was -0.20736 indicating a very slight inverse relationship between undergraduate enrollment and diversity.

Next, the schools were divided into five categories according to their IPEDS size categories: 20,000+, 10,000 - 19,999, 5,000 - 9,999, 1000 - 4,999, and <1000. The first category, 20,000+, contained 21 schools with undergraduate enrollments ranging from 5,156 to 47,464 (The bottom end of the range is below 20,000 because IPEDS size classification is based on total enrollment not undergraduate enrollment). The mean enrollment was 18,454. Diversity scores ranged from 75 to 144.3878 with a mean of 98.75127. The correlation coefficient for this group was .719367.

The category of 10,000 - 19,999 contained 54 schools with undergraduate enrollments ranging from 3,528 and 16,039 and mean enrollment of 8,579. Diversity scores ranged from 72.91667 to 144.3878 with a mean of 110.804. The correlation coefficient within this group was .398019.

The category of 5,000 - 9,999 contained 102 schools with undergraduate enrollments ranging from 1,388 to 8,640. The mean undergraduate enrollment for this group was 4,562. Diversity scores ranged from 60.26316 to 175. The mean diversity score in this group was 119.4895 and the correlation coefficient was .003629.

The category of 1,000 - 4,999 consisted of 704 schools with undergraduate enrollment ranging from 2 students to 4,948. The mean undergraduate enrollment was 1,876. Diversity scores ranged from 65.46392 to 175. The mean diversity score was 129.0092 and the correlation coefficient for the group was .068877.
The final group, schools with total enrollment less than 1000, had 525 schools with undergraduate enrollments ranging from 2 to 987. The mean undergraduate enrollment was 355. Diversity scores ranged from 66.33663 to 175. The mean diversity score for the group was 137.5039 and the correlation coefficient was -.18922. Table 1 shows a summary of the mean diversity score and correlation coefficient for each IPEDS size category.

Table 1

<table>
<thead>
<tr>
<th>IPEDS Size Category</th>
<th>Mean Diversity Score</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,000 and above</td>
<td>98.75127</td>
<td>0.719367</td>
</tr>
<tr>
<td>10,000 - 19,999</td>
<td>110.80398</td>
<td>0.398019</td>
</tr>
<tr>
<td>5,000 - 9,999</td>
<td>119.48949</td>
<td>0.003629</td>
</tr>
<tr>
<td>1,000 - 4,999</td>
<td>129.00918</td>
<td>0.068877</td>
</tr>
<tr>
<td>Under 1,000</td>
<td>137.50391</td>
<td>-0.189221</td>
</tr>
</tbody>
</table>

The dataset contained sufficient enrollment data to calculate a diversity score for 82 ABHE member schools. Of these, 72 were in the IPEDS size category of under 1000 and 10 were in the category of 1,000 to 4,999. The diversity scores for ABHE member schools in the under 1000 IPEDS size category ranged from 66.33663 to 175 with a mean score of 136.4191. A correlation test was conducted using undergraduate enrollment and diversity scores with a resulting correlation coefficient of -0.056706.

The diversity scores for ABHE member schools in the 1,000 - 4,999 IPEDS size category ranged from 95.45455 to 154.798. The mean score in this group was 131.13526 and the correlation coefficient was 0.020699.
Financial Strength

Because some schools failed to report financial data to IPEDS, the number of institutions analyzed for financial strength was 1,317 or 89 less than the diversity dataset. Enrollment statistics did not change significantly. The range of enrollments remained 2 to 47,464 while the mean enrollment increased to 2,040 from 2,008 in the diversity dataset.

Each school was ranked in five categories: endowment to revenues ratio, liabilities to revenues ratio, liabilities to net assets ratio, percentage of tuition discounting, and percentage of revenue from enrollment (tuition and fees). A financial strength score was calculated for each school by adding these ranks together. Financial strength scores ranged from 613 to 5978; the lower the financial strength score the stronger the school's finances compared to their peers. The mean financial strength score was 3294.29.

A correlation analysis was conducted using the correl function in Microsoft Excel with undergraduate enrollment as one variable and the financial strength score as the other for the entire dataset. The resulting correlation coefficient ($r$) was 0.018874. A second correlation analysis was conducted using diversity score in place of undergraduate enrollment. The resulting correlation coefficient ($r$) was -0.08215.

Again the schools were divided into their five IPEDS size categories. The 20,000+ category contained 21 schools. Financial strength scores ranged from 1722 to 4135 with a mean of 3021. The correlation coefficient for this group was 0.017767.

The category of 10,000 - 19,999 contained 52 schools. Financial strength scores ranged from 1117 to 4791 with a mean of 3125.38. The correlation coefficient within this group was -0.06244.
The category of 5,000 - 9,999 contained 96 schools. Financial strength scores ranged from 2017 to 5010. The mean financial strength score in this group was 3446.583 and the correlation coefficient was -0.12431.

The category of 1,000 - 4,999 consisted of 675 schools. Financial strength scores ranged from 613 to 5624. The mean financial strength score was 3489.913 and the correlation coefficient for the group was 0.051315.

The final group, schools with total enrollment less than 1000, had 473 schools. Financial strength scores ranged from 629 to 5978. The mean financial strength score for the group was 3027.321 and the correlation coefficient was 0.225765. Table 2 shows a summary of the mean financial strength score and correlation coefficient for each IPEDS size category.

Table 2

<table>
<thead>
<tr>
<th>IPEDS Size Category</th>
<th>Mean Financial Strength Score</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,000 and above</td>
<td>3021.000</td>
<td>0.017767</td>
</tr>
<tr>
<td>10,000 - 19,999</td>
<td>3012.538</td>
<td>-0.062436</td>
</tr>
<tr>
<td>5,000 - 9,999</td>
<td>3446.583</td>
<td>-0.124310</td>
</tr>
<tr>
<td>1,000 - 4,999</td>
<td>3489.913</td>
<td>0.051315</td>
</tr>
<tr>
<td>Under 1,000</td>
<td>3027.321</td>
<td>0.225765</td>
</tr>
</tbody>
</table>

The ABHE dataset remained the same for financial strength scores with 82 schools. The 10 schools with enrollment of 1,000 - 4,999 had financial strength scores ranging from 2324 to 4931 with a mean of 3524.8. The 72 schools with enrollment under 1,000 had financial strength scores ranging from 992 to 4901 with a mean of 2690.35.
Change in Financial Strength

The financial strength score was then recalculated by increasing or decreasing enrollments based on the predicted demographic changes. Revenues were then adjusted according to the new enrollment numbers. Using the new revenue figures, a new financial strength score was calculated for each school. Because the financial strength score is a relative score, the overall range and mean were unchanged, so only the descriptive statistics for the individual groups were necessary.

For the 20,000+ category, future financial strength scores ranged from 1708 to 4091 with a mean of 3034.714. The amount by which the financial strength score changed ranged from a decrease (represented by a minus sign) of 605 to an increase of 312 and the group's mean increased by 13.71.

For the 10,000 - 19,999 category, the range of future financial strength scores was 1184 to 4594 with a mean of 2989.14. The range of score changes was -494 to 320 and the mean decreased by 23.40.

For the 5,000 - 9,999 category, the range of future financial strength scores was 2045 to 4981 with a mean of 3443.46. The range of score changes was -712 to 425 and the mean decreased by 3.13.

For the schools in the 1,000 - 4,999 category, the future financial strength scores ranged from 607 to 5793 with a mean of 3464.85. The range of score changes was -1302 to 486 and the mean decreased by 25.06.

For the schools with enrollment under 1,000 category, the range of future financial strength scores was 569 to 6000 with a mean of 3066.10. The range of score changes was -1301 to 552 and the mean increased 38.78. Table 3 shows a comparison of
the mean financial strength and future financial strength scores for each IPEDS size category.

Table 3

Comparison of Financial Strength and Future Financial Strength scores by School Size

<table>
<thead>
<tr>
<th>IPEDS Size Category</th>
<th>Mean FS Score</th>
<th>Mean Future FS Score</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,000 and above</td>
<td>3021.00</td>
<td>3034.71</td>
<td>13.71</td>
</tr>
<tr>
<td>10,000 - 19,999</td>
<td>3012.54</td>
<td>2989.14</td>
<td>-23.40</td>
</tr>
<tr>
<td>5,000 - 9,999</td>
<td>3446.58</td>
<td>3443.46</td>
<td>-3.12</td>
</tr>
<tr>
<td>1,000 - 4,999</td>
<td>3489.91</td>
<td>3464.85</td>
<td>-25.06</td>
</tr>
<tr>
<td>Under 1,000</td>
<td>3027.32</td>
<td>3066.10</td>
<td>38.78</td>
</tr>
</tbody>
</table>

The 10 ABHE schools with enrollment of 1,000 - 4,999 had future financial strength scores ranging from 2272 to 4869 with a mean of 3613.70. The score changes ranged from -62 to 352 and mean increased by 121.50. The 72 schools with enrollment under 1,000 had future financial strength scores ranging from 1009 to 5085 with a mean of 2789.10. The scores changes ranged from -175 to 519 and the mean increased by 114.29.

A correlation analysis was conducted using undergraduate enrollment as one variable and the change in financial strength scores as the other. The resulting correlation coefficient \((r)\) was -0.02224. A second correlation analysis was conducted using diversity scores in place of undergraduate enrollment. The resulting correlation coefficient \((r)\) was 0.176881.

**Summary**

This study set out to analyze the relationships between enrollment, diversity, and financial strength for America's private, four-year, not-for-profit colleges and universities. This chapter represents the summation of more than 100,000 individual data
points. This collection of ranges and means is necessary to draw the proper conclusions about how diversity, enrollment size, and financial strength interact. In the next chapter, these data will be used to draw conclusions about these relationships and provide guidance on how these data can be used by individual schools and leaders in higher education to prepare themselves for the coming changes.
CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

Introduction

The field of environmental scanning, a subset of open systems theory, teaches that guiding their institutions through changes in the external environment is one of the fundamental roles of the educational administrator (Dembowski, 2007). This study set out to determine the relationship between three key variables often tracked by the leaders of colleges and universities when scanning their external environment: diversity, enrollment, and financial strength. While these variables cannot always be tracked by a single number, this study attempted to do just that, reduce both diversity and financial strength down to single numbers in order to provide for easy and quick comparison with other institutions and assist leaders in determining the best strategic course for their institution. This chapter will build on the findings revealed in chapter four by conducting an analysis of the results, explicating the implications of the findings, and suggesting areas for action and further research.

Summary of the Study

It is easy to imagine the president of XYZ University developing his/her strategic plan. In the process of scanning the external environment, this president reviews the Department of Education's report on high school graduates and determines, since Hispanic populations are growing faster than the rest, it would be a good idea to recruit more Hispanic students. The hope is that by increasing the diversity of the institution, enrollment will grow and the school will increase its financial stability. This study set out to determine the soundness of that logic.
The purpose of this study was to determine the relationships between diversity, enrollment size, and financial strength. These are key variables in higher education and are affected by the external environment in which these organizations operate. A large part of studying the external environment how it will change. The Department of Education produced *Projection of Education Statistics to 2022* (Hussar & Bailey, 2013) predicting how one aspect of the external environment, high school graduates, will change between 2012 and 2022. This study also attempted to predict the effect of those changes on the financial strength of the study's population.

Using IPEDS enrollment and financial data, this study first created a methodology for creating diversity and financial strength scores. Using the eight IPEDS race categories, a baseline of 12.5% student population in each race category was considered to be a perfectly diverse institution. The absolute value of the differences between an institution's actual enrollment for a particular race and the 12.5% ideal were summed to create a diversity score between zero (perfectly diverse) and 175 (perfectly homogenous).

To create a financial strength score, five financial ratios were calculated for each school and the schools were rank-ordered in each ratio. These rank orders were then summed to create a financial strength score that represented a school's relative strength compared to other schools in the sample. Each school's total undergraduate enrollment was used to represent the variable of size or enrollment.

The three variables were then compared in a variety of fashions. First, a correlation analysis was conducted using the *correl* function in Microsoft Excel. In addition, means and score ranges were compared. Scatter plot plots were compared to determine if any visual patterns emerged. Finally, ABHE member groups were separated
from the IPEDS size category peer groups and the means and ranges of the variables were compared against their IPEDS size category as a whole to determine the relationship of these schools to their secular peers.

Finally, the financial strength score was recalculated to simulate the changes predicted by the Department of Education. Ratios were also recalculated, schools were rank-ordered based on the new ratios and a new financial strength score was determined for each school. The effect of size and diversity on the amount of change between the original financial strength score and the future financial strength score was analyzed.

While no correlations were found between any of the three variables, relationships were uncovered. Diversity scores tended to converge towards the diversity score of the United States as enrollment size increased. Financial strength scores did not improve with size, but the two largest IPEDS size categories and the smallest IPEDS size category had significantly better financial strength scores than the middle two IPEDS size categories.

The study's methodology predicted that larger schools would not see better financial results as the ethnicity of the country's high school graduates changed, but that larger schools would suffer less volatility in their financial results. The study also found that ABHE member schools were just as diverse and financially strong as their secular peers, but that they were more likely to see negative consequences of the demographic changes than their secular peers, suggesting that they enroll Hispanics and Asians at lower rates than their secular peers.
Discussion of the Findings

Diversity

**Hypothesis #1.** Hypothesis #1 postulated that a relationship exists between the size of a school and how diverse its student body is. The data for this hypothesis were conflicting. A simple correlation analysis for undergraduate enrollment versus diversity score yielded a correlation coefficient of -0.21 indicating no correlation or a very slight inverse relationship between undergraduate enrollment and diversity. With this result, the null hypothesis cannot be rejected.

Looking at the means for the IPEDS size categories, however, tells a different story. As Table 1 illustrates, the means of the diversity scores quite obviously and significantly increases (less diverse) as the size category decreases. In other words, as the schools get smaller, they become less diverse. What seems to be false in the particular, then, seems to be true in the general. While size might not be a predictor of diversity when discussing schools that are close in size, say 300 and 700 students, it is a very good predictor when the schools very widely, say 300 and 13,000 students.

Another possible explanation for the data is that the relationship between diversity and enrollment is not linear. The category specific data seem to hint at this. The correlation coefficient for the under 1000 IPEDS category of -0.19 is similar to the overall $r$ of -.21. The next two categories have correlation coefficients less than 0.1 indicating no correlation at all. The two largest IPEDS size categories actually show a positive correlation between size and diversity. While the correlation for the 10,000 - 19,999 IPEDS size category is weak ($r = 0.4$), the correlation in the 20,000+ group is
quite strong \((r = 0.72)\). In other words, in the larger size categories, as schools get larger their diversity actually decreases. The correlation coefficient in 20,000+ is skewed, however, by an interesting statistical grouping as illustrated in Figure 2.

![Figure 2](image)

*Figure 2.* Scatter plot of schools in the 20,000+ IPEDS category with enrollment on the x-axis and diversity school on the y-axis.

As Figure 2 illustrates, the diversity scores for schools with undergraduate enrollment greater than 25,000 students were significantly higher than the other schools in the 20,000+ IPEDS size category. The mean diversity score for this group of five is 129.28 compared to a mean of 89.21 for the remaining 16 schools. The mean diversity score for the lower group is very close to the diversity score of the population of the United States (100.26). The ten-point difference is potentially explainable by the fact that the non-resident alien category used by IPEDS is not used by the United States Census Bureau; therefore, the diversity score of the United States is calculated with only seven racial categories rather than the eight used by IPEDS.

One possible explanation for all of the observable data is that the relationship between diversity and size does, in fact, exist but is not linear. It appears that as schools
get larger their diversity scores converge towards the diversity score of the United States. Figure 3 illustrates this convergence towards a diversity score of 100.

![Figure 3. Scatter plot of schools with undergraduate enrollment less than 20,000 with enrollment on the x-axis and diversity school on the y-axis.]

In other words, as they get larger the diversity of their population begins to resemble the population of the country as a whole. At a certain point, however, they begin to become less diverse. Based on these data, that inflection point occurs somewhere between an undergraduate enrollment of 22,615 and 27,692. One possible cause for this decrease in diversity is that perhaps the minority populations can no longer supply a sufficient number of college-age students to maintain an equitable percentage of students. In order to continue to grow, these schools are forced to draw disproportionately from the majority population (whites). Again, the data seem to hint at this possibility. The five schools with higher diversity scores have a significantly higher percentage of white students than the other 16 schools in this category.

**Hypothesis #2.** Hypothesis #2 expected ABHE member schools to be less diverse than their IPEDS size category peers. In terms of the data, it was expected that
ABHE member schools would have higher diversity scores than their IPEDS size category average. Table 4 shows the comparison between the mean diversity scores.

Table 4

<table>
<thead>
<tr>
<th>IPEDS Size Category</th>
<th>All Schools</th>
<th>ABHE Schools</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 - 4,999</td>
<td>129.01</td>
<td>131.14</td>
<td>2.13</td>
</tr>
<tr>
<td>Under 1,000</td>
<td>137.50</td>
<td>136.42</td>
<td>-1.08</td>
</tr>
</tbody>
</table>

Neither the mean scores nor the range of diversity scores for ABHE member schools differed in any significant way from the larger IPEDS size category from which they were drawn. The data clearly indicate that the null hypothesis for Hypothesis #2 can not be rejected. There is no significant difference between diversity at ABHE member schools and their IPEDS size category peers.

**Implications.** The most significant finding in the diversity data is the tendency for diversity scores to converge towards the diversity of the United States as schools get bigger. While this might seem to be an intuitive result, it has significant implications for enrollment policies. Schools that recognize a lack of diversity in their enrollment are likely well aware that increasing their ethnic diversity is an important part of enrollment growth.

For schools that have already made a significant effort towards creating an ethnically diverse student body (159 schools have diversity scores lower than that of the population of the United States), the idea that it will be necessary to become less diverse in order to grow might come as a bit of a surprise. While these schools might have an institutional mandate to grow enrollment, their dedication to ethnic diversity might very
well cause them to have enrollment strategies, financial aid and scholarship schemes, and even other institutional mandates that might be actively frustrating their desire to grow. These schools will need to ask themselves if their policies and procedures are preventing them from growing. For some of these schools, a diverse student body and dedication to multi-ethnic inclusion might be so ingrained in their culture and so fundamental to their mission that they will choose to forgo enrollment growth in order to maintain their diverse population.

The most surprising result was the unexpected and unexplained increase in diversity scores for the five largest schools in the study. Figure 2 clearly shows that while the bottom 16 schools are closely grouped, the five largest schools revert to the mean diversity score of the entire dataset. It also is a reversal of the general trend that schools get more diverse as they get bigger. No immediate reason for this sudden shift or why it takes place at that particular level of enrollment was evident in the data. It also begs the question whether these schools differ in other fundamental ways from the smaller schools to the point where a new IPEDS size category should be created in order to provide a proper peer group for comparison.

While the purpose of this study was to analyze the relationship between size of enrollment and diversity, the collected data allowed an analysis of how well America's private colleges and universities are doing in attracting a broad cross-section of America's ethnic communities. The data reveal that private colleges and universities are not doing a very good job of reflecting the population of the United States. The diversity score of the United States, 100.26, is significantly lower than the mean score of the 1,406 schools in the dataset, 130.34. Only 11% of the schools in the dataset, 159 schools, have diversity
scores lower than that of the population of the United States. The data clearly reveal that the focus spent on creating diversity in America's private colleges and universities has yet to bear real fruit, but is not misguided.

The most controversial part of this study might be the methodology for calculating diversity. While the theory was discussed in chapter two, the results of this analysis show that this methodology is an easy and effective way to measure diversity and to compare different institutions irrespective of enrollment and geographic differences.

**Suggestions for further research.** This study provides many avenues for further research. Replicating the diversity analysis of this study using public schools instead of private schools would provide an interesting comparison between public and private higher education in America. It would also round out the diversity picture. Based on the results of this study, private schools are enrolling minority students at lower rates than would be expected based on population statistics alone. Future research should determine if public institutions are filling that gap or are minority populations underrepresented in higher education? Such a study would also provide a greater pool of universities with enrollment greater than 25,000. The results would allow researchers to confirm whether the sudden increase in diversity scores for schools with more than 25,000 students was a statistical anomaly of this sample or an actual phenomenon. If it is an actual phenomenon, research into its cause would then be warranted.

A historical study of a single school's enrollment size and diversity over a long period of time would give greater insight into the relationship between the two variables. A future study should test whether rapid growth spurts are accompanied by a significant
change in diversity. If so, in what direction is the change (more diverse or less diverse)? Particularly, studying the period of time when a school grew from less than 25,000 students to more than 25,000 would shed light on the strange decrease in diversity of larger schools.

This study used only the 2013 IPEDS dataset. Replicating this study with all available IPEDS datasets would provide historical and trend data showing if and how private college diversity has changed over time both in absolute terms and in relation to the overall population of the United States. Such a study would be rendered difficult by the changes in race categories over time and the relatively recent inclusion of Hispanics as a separate and identifiable ethnic category.

This study focused only on the diversity of undergraduate students. A parallel study of graduate students or a study of the diversity of the total student population may produce very different results. Presumably, colleges and universities were combining the populations of traditional undergraduate students and adult completion program students as undergraduates. A diversity study of these individual groups, rather than undergraduate students as a whole would provide a more complete portrait of the diversity within America's private colleges and universities.

While this study found evidence of a pattern of convergence in diversity scores, a more robust, mathematical study utilizing the fundamentals of convergence theory and the central limit theorem would be needed to definitively confirm the existence of convergence in diversity as enrollment size increases.
Financial Strength

**Hypothesis #3.** This hypothesis predicted a correlation between undergraduate enrollment and financial strength. The correlation analysis returned a correlation coefficient of 0.02 indicating no correlation between undergraduate enrollment and financial strength. As with diversity, however, the data do point to a relationship between enrollment and financial strength if not a correlation. Table 2 reveals that the mean financial scores of the two largest IPEDS size categories are significantly lower than the next two IPEDS size categories. In other words, the larger schools are financially stronger than the smaller schools. The mean diversity score of the smallest IPEDS size category, however, is similar to that of the two larger IPEDS size categories. Hypothesis #3 is therefore not supported. Instead, the data indicate that schools at either end of the size spectrum are financially stronger than schools in the middle.

**Hypothesis #4.** This hypothesis predicted a relationship between diversity and financial strength. To test this hypothesis a correlation analysis was conducted using the calculated diversity scores and financial strength scores. The resulting correlation coefficient was -0.08 indicating no correlation between diversity and financial strength. Unlike previous hypotheses, however, no discernible pattern emerges from a review of the data as Figure 4 illustrates. The data clearly indicate that there is no relationship between diversity and financial strength.
Figure 4. Scatter plot of the financial strength scores (x-axis) plotted against the diversity scores (y-axis) for all schools in the dataset.

Hypothesis #5. This hypothesis predicted that ABHE member schools would have higher financial strength scores than their secular peers in the same IPEDS size category. In other words, ABHE member schools are financially weaker than their secular peers. While the data are mixed, this hypothesis is clearly not supported. Table 5 shows the comparison of the relevant means.

Table 5

<table>
<thead>
<tr>
<th>IPEDS Size Category</th>
<th>All Schools</th>
<th>ABHE Schools</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1,000</td>
<td>3027.32</td>
<td>2690.35</td>
<td>-336.97</td>
</tr>
<tr>
<td>1,000 - 4,999</td>
<td>3489.91</td>
<td>3524.80</td>
<td>34.89</td>
</tr>
<tr>
<td>5,000 - 9,999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,000 - 19,999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20,000 and above</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While the data show that larger ABHE schools are financially weaker than their IPEDS size category as a whole, the difference is so small as to be insignificant. The difference for the smaller schools, however, is much more significant and the opposite of what was
predicted. The data indicate that ABHE schools in the smallest IPEDS size category are, in fact, much stronger financially than their peer group as a whole.

**Implications.** As with the previous section, the methodology of this study will likely be as carefully reviewed as the results. Obviously, in order to study the effect of size and diversity on financial strength it is necessary to define financial strength. As a variable, however, financial strength proves to be very difficult to define and harder still to measure. The ratios used are only a handful of many that could rightfully be considered important for the financial stability of an institution. Perhaps the biggest weakness in the financial strength score developed for this study is the fact that it produces only a relative ranking. The school with the highest financial strength score could still be on the verge of bankruptcy or the school with lowest could be well-positioned to weather a severe economic crisis; the financial strength score does not tell us. It only tells us whether a particular school financially stronger or weaker than its peers.

Certainly an absolute measure of financial strength would be preferable both for researchers and university executives, but given the number of factors involved in the financial strength of a school, it is unlikely such a measure could be developed. Still, the relative measure developed for this study has yielded some surprising results. While it was expected that larger schools would be more financially secure than smaller schools, the reality turned out to be more complicated. While the largest schools were financially strong as a group, the group of the smallest schools was equally strong. The schools in the middle, however, were significantly weaker. This has important implications for the strategic plans of many small and mid-size colleges and universities.
A quick review of the presidential opportunity profiles posted on the Chronicle of Higher Education's job search site reveals that an overwhelming majority of them indicate that enrollment growth is an important strategic goal of the institution. While there could be many reasons to desire enrollment growth, foremost being the desire to reach more people with their intended mission, it is not hard to imagine that many trustee boards are under the impression that more students will bring more revenue and greater financial stability. This study seems to indicate that they might be chasing a chimera. Nothing in this study indicates why financial strength is bifurcated by size, but the results indicate that the best course of action for small schools might be to remain small. Furthermore, it indicates that the best path to financial stability for schools in the 1,000 - 5,000 size category might be, counter-intuitively, to become smaller.

Perhaps it is easiest to achieve worthwhile social goals when those goals correspond with profit motives. To that end, this study hoped to demonstrate a link between diversity and financial strength. As indicated above, that link does not appear to exist. As discussed in chapter two, other studies have shown that diversity is still a worthwhile goal to pursue for a number of social and educational reasons; however, diversity neither promotes nor harms financial strength. The next section will explore whether diversity promotes financial stability rather than strength.

Finally, the results for ABHE member schools are particularly significant. Given the evangelical nature of these schools, they might be the most mission-driven to grow. The results of this survey indicate that doing so might not be in the best financial interests of the school. The results also indicate that schools need not give up their Christian
identity in order to achieve financial stability; in fact, doing so would harm their financial strength.

**Suggestions for further research.** This study's analysis of the financial strength of America's private colleges and universities provided a number of findings that might seem counter-intuitive. It cannot be said often enough that correlation does not imply causation. The causation of the relationships discovered by this study is fertile ground for future researchers.

The weakening of financial strength for schools with enrollment between 1,000 and 9,999 is one of the unexpected results that requires further research. While many possible causes can be imagined, such speculation provides no practical benefit to college leaders. Solid research, however, would help such leaders better formulate the strategic directions of their institutions.

As indicated previously, many schools appear to be pursuing enrollment growth although it is not clear for what purposes. Further study of exactly how many schools are officially pursuing enrollment growth as a strategic goal and for what reasons would be helpful in understanding how the leaders in higher education view their institutions and the strategic environment on which they are operating.

The most valuable area of further research would be developing an absolute measure of financial strength. If researchers could provide the leaders in higher education with a single measurement that indicated the financial strength of their institution and whose component parts could be manipulated to indicate the best course of action, the financial stability of America's system of higher education could be vastly increased. In the absence of an absolute score, developing a better formula for a relative
score would still be useful. Both of these goals are hindered by the nature of the people best suited to perform such research. Many college chief financial officers are certified public accountants or holders of Master's of Business Administration degrees. They tend to be accomplished business people who are at or near their career terminus and are, therefore, disinclined to conduct research. Furthermore, the demands of the position are such that time to conduct activities outside of their area of responsibility is at a premium. Put simply, they have neither the time nor inclination to conduct research on college finance. For this reason, academic research in the area of college finance is scarce and likely to remain so.

The Bible College Movement is another field that has attracted little scholarly interest. The results of this study have raised some interesting questions that demand further research. First, why are smaller ABHE schools financially stronger than larger ABHE schools? The same trend appears among secular schools; is the same causation at work in ABHE schools or is there some other factor? Second, why are ABHE schools in the under 1,000 IPEDS size category financially stronger than their secular peer group as a whole? While one could speculate that dedication to a unique mission and an obvious distinctive would be factors, this study has demonstrated the ephemeral quality of such common wisdom. Rigorous academic study is necessary to determine causation. Finally, the fact that there are no ABHE member schools larger than 3,500 students is worth noting. What causes ABHE schools to fail to grow beyond that size or, possibly, give up their ABHE membership as they get larger? The existence of the Council for Christian Colleges and Universities (CCCU) provides an interesting comparison group as these
schools tend to be larger than ABHE member schools. An in-depth comparison study between ABHE member schools and CCCU member schools would be instructive.

**Future Financial Strength**

After performing the analysis of financial strength, the enrollment numbers in each ethnic category for each school were either increased or decreased based on the Department of Education predictions (Hussar & Bailey, 2013). By using a per student revenue figure calculated from current data, these new enrollment numbers were used to calculate new total revenue and student revenue figures. These new revenue figures were used to recalculate the three ratios in the financial strength score that used revenue as a factor and the dataset was rank ordered based on these new calculations. The two remaining ratios remained unchanged and the same ordered ranks were used. Again, the ordered ranks of all five ratios were summed to produce a financial strength score, referred to as future financial strength. Hypotheses six through eight examine the amount of change between the two financial strength scores.

**Hypothesis #6.** This hypothesis predicted a correlation between the enrollment size of a school and the amount of change in its financial strength score. As with the two previous sections, a correlation analysis was conducted using undergraduate enrollment and the amount of change between the financial strength score and the future financial strength score. The resulting correlation coefficient was -0.02 indicating no linear correlation between the two variables. Again, however, an analysis of the means yields interesting data if not quite a pattern. Table 3 showed the changes between the means of the financial strength scores and the means of the future financial strength scores for each IPEDS category.
The data indicate that the largest and smallest schools are most at risk to the coming demographic changes. The mean financial strength scores for these two size categories changed for the worse. The change for the smaller schools, however, was nearly three times as large as the change for the bigger schools, meaning smaller schools are significantly more at risk to the coming demographic changes than schools in the other size categories. The mean financial strength scores for the middle three IPEDS size categories all improved. While the median financial strength score for the middle IPEDS size category (schools with total enrollment between 5,000 and 9,999 students) improved only minimally, the other two categories showed large improvements from their current financial strength score to their future financial strength score. No explanation for this pattern is readily apparent.

In addition to the change in the means, an interesting pattern is also noticeable in the range of changes, a trait this study will refer to as volatility. The mean volatility in the largest IPEDS size category, 20,000+, was 88.10, less than half that of the 1,000-4,999 size category which had a mean volatility of 185.45. In fact, the mean volatility scores increase linearly as the size category decreases with the exception of a slight decrease in volatility in the smallest IPEDS size category. Looking more closely at the individual results, however, reveals that all of the largest changes occur in the smallest two size categories. As Table 4 shows, the smallest two size categories had positive changes in future financial strength scores as high as -1302 and -1301, almost double the best improvement of the other three size categories. On the negative side, the smaller schools were equally volatile with negative changes of 486 and 552, again significantly
higher than the 312, 320, and 425 of the three larger size categories. This relationship is illustrated in Figure 5.

![Figure 5](image)

*Figure 5.* Scatter plot of financial strength score changes (y-axis) versus undergraduate enrollment (x-axis).

While the linear correlation between size and fluctuation in financial strength scores was not found, the analysis does indicate that smaller scores are more vulnerable to the effects of the predicted demographic changes. For some schools, the changes will be overwhelmingly positive; for others the changes will be negative. All schools, however, should carefully evaluate their potential risk and determine how the coming demographic changes will affect them.

**Hypothesis #7.** This hypothesis anticipated a correlation between the diversity score of an institution and the amount of change in its financial strength score. As with every other hypothesis this study tested, the relationship between diversity and change in financial strength were more complicated than a simple linear relationship. In fact, the relationship between diversity and change in financial strength scores mirrors that of the
relationship between enrollment and financial strength score change. Compare Figure 6 with Figure 5 above. While diversity was not an indicator of superior (or inferior) economic performance in the face of the predicted demographic changes, diverse schools did suffer less volatility, as a group, than their less diverse counterparts.

![Figure 6](image-url)

*Figure 6.* Scatterplot of financial strength score change (y-axis) versus diversity score (x-axis).

While the effect might be more pronounced in Figure 5, it is clear that more diverse schools experience smaller changes in financial strength score when adjusting for the predicted demographic changes. This result is intuitive. If 100% of a school's student body consists of a single ethnic group and that ethnic group experiences a dramatic increase in high school graduates, that school's enrollment and financial strength would be expected to increase dramatically. Likewise, if a school enrolls a sole ethnicity and the number of high school graduates in that ethnicity decreases, that school's enrollment and financial strength would be expected to decrease. If a school has a diverse
enrollment, however, the ups and downs of the individual ethnic groups have a less pronounced effect on the enrollment and financial strength of the institution.

Again, while the hypothesis as written was not supported, there is a clear relationship between diversity and the volatility of an institution's financial strength. While increased diversity does not mean schools are more likely to see positive change in their financial strength scores, it does mean that they are more likely to see less dramatic changes in financial strength.

**Hypothesis #8.** This hypothesis predicted that ABHE member schools would suffer a greater variance in financial strength scores than all schools in their IPEDS size category. In fact, the opposite turned out to be the case. As Table 6 illustrates, ABHE member schools experienced a smaller range of financial strength score changes than their secular peers.

### Table 6

Comparison of the Range of Financial Strength Score Changes for ABHE Members to all Schools by IPEDS Category

<table>
<thead>
<tr>
<th>IPEDS Size Category</th>
<th>All Schools</th>
<th>ABHE Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>1,000 - 4,999</td>
<td>-1302</td>
<td>486</td>
</tr>
<tr>
<td>Under 1,000</td>
<td>-1301</td>
<td>552</td>
</tr>
</tbody>
</table>

While this might appear to be positive news, Table 6 also shows that this result is achieved mostly by reducing the amount of positive changes ABHE member schools experienced. While increases in financial strength scores were similar in ABHE member schools as compared to their peer group, the decreases in financial strength scores were much more significant for the peer group than the ABHE member schools. To be clear, ABHE member schools had decreases in financial strength that were on par with their
peers, but some of their secular peers had dramatic increases in financial strength and ABHE member schools did not. So, ABHE member schools are at risk for the negative consequences of the predicted demographic changes without being in position to benefit from the positive consequences. The only logical explanation for this effect is that ABHE member schools enroll Hispanics and Asians at a lower rate than their secular peers.

**Implications.** The author had hoped to establish a financial reason for colleges and universities to pursue diversity. While the results do not support the contention that diverse schools perform better financially, they do show that diverse schools suffer less financial volatility than their more homogenous peers. Schools that find themselves in a comfortable financial position might want to pursue diversity in order to maintain that position, but schools that are in a precarious financial position might find that pursuing diversity might slow their journey to financial strength.

The most definitive finding of this study is so intuitive as to be hardly worth studying. Schools that enroll higher percentages of Hispanics and Asians will enjoy better financial results than their peers over the coming decade. While diversity and size might buffer this effect, it does not eliminate it and even large and/or diverse schools must be aware of the trend and tailor their recruiting strategies to take advantage of it.

ABHE member schools seem to be particularly ill-positioned for the coming demographic changes. While no more homogenous that their secular peers, they appear to under-enroll Hispanics and Asians. Unless addressed, this tendency will have a negative effect on both the enrollment and financial strength of ABHE member schools.
Suggestions for further research. As mentioned before, the purpose of this study is to determine the relationships between diversity, enrollment size, and financial strength, not to determine the reasons for those relationships. Further research is needed to determine why, for instance, size and diversity both seem to provide a dampening effect on changes in financial strength. While some obvious answers present themselves, those reasons need to be scientifically tested.

The results of hypothesis #8 indicate that ABHE member schools enroll fewer Hispanics and Asians than their secular peers, but that result was not verified by examination of the applicable data. A relatively quick statistical analysis could verify that implication. Once verified, a whole field of research opens. Further research could determine if the leaders of ABHE member schools are aware of this fact and if they are aware of the Department of Education's predictions concerning the demographics of future high school graduating classes. If they are aware, future research into what activities are underway in order to protect their schools from the effect of the demographic changes would be warranted.

Of course, the most obvious response to the shifting demographics is to recruit more Hispanic and Asian students. A vast and growing body of literature exists concerning the Hispanic student and higher education. This study dovetails nicely into that body of research and suggests that research into effective strategies for recruiting and retaining Hispanic students is needed. Future researchers will want to determine how the current generation of Hispanic high school students view higher education and what they are looking for in institutions of higher education. In addition, scholars and leaders will need to determine how policies and procedures might need to change in order to attract
and retain these students. The same robust body of literature does not exist for Asian students. Existing research focuses almost exclusively on the academic achievement of Asian students. The same breadth of sociological research done on Hispanic students needs to be replicated with a population of Asian students in order for institutions of higher education to fully understand that population group.

While recruiting more Asians and Hispanics might be the most obvious solution, it is not the only one. A study could be conducted solely to determine solutions for schools caught on the wrong side of the demographic trend. An approach many schools are using is to focus on adult students through graduate studies and adult baccalaureate completion programs. Remembering that this study focused solely on high school graduates and undergraduate populations, it is possible that the trends in adult education might prove friendlier. While possible, this assumption needs to be tested by research. It is just as possible that the same trend dominating high school graduates is affecting adult students as well.

Even in the absence of confirming research, many schools are taking this approach. But the three focus areas, traditional undergraduate, adult completion, and graduate education, all have very different dynamics and needs. By splitting focus and resources, it is possible schools are reducing the effectiveness of all three areas. A study designed to test the efficacy of the "spray and pray" approach versus a niche approach would be of interest. It could be expected that enrollment size would once again be a significant factor in such a study.
Recap of Major Findings

This study revealed many aspects of the relationships between diversity, enrollment, and financial strength. Some were surprising; others were expected. This section will highlight some of the most significant findings in this study.

This study found that the diversity of private colleges and universities tends to converge towards the diversity of the United States as a whole. While this result seems intuitive, it is unclear how well-recognized this trend is. It holds significance for anyone conducting strategic enrollment planning. In addition, this study found that private institutions of higher education have failed to enroll minorities at anything near their percentage of the overall population. It found that ABHE member schools are no less diverse than their secular peers. Finally, it posited an alternative model of diversity that is easier to use and offers a better picture of an institution's true diversity than existing models.

This study found that the schools at the extremes, the largest and smallest schools, had the best measures of financial strength. Schools in the middle, from 1,000 to 9,999 students, had significantly weaker financial strength scores. This trend held true for ABHE member schools as well; the study also found that ABHE member schools were no weaker, financially, than their secular counterparts. Again, this study proposed a new method of calculating financial strength. While admittedly not a perfect approach, the author hopes it can lead to further study of this important subject and a simple, repeatable measure that provides quick and accurate results.

This study found that while larger schools are not financial stronger or better positioned for the demographic changes predicted for America's high school graduates,
their size does dampen the volatility they can expect to suffer as a result of the changes. The same was true for more diverse schools compared to their more homogenous counterparts. Finally, this study found that while ABHE member schools could expect less volatility than their secular peers, the reduced volatility was all on the positive side, not the negative side. In other words, ABHE member schools could expect to suffer negative results equal to their secular peers, but would not experience the same magnitude of positive financial results. This finding indicates that ABHE member schools are not well-prepared for the coming demographic changes and should make an effort to study their own individual situations and make the necessary strategic plans to ensure their continued financial well-being.

Summary

This study set out to use quantitative methods to determine the relationships between diversity, enrollment, and financial strength in order to provide the leaders of America's four-year, private colleges and universities a better understanding of the external environment in which they operate. In addition, this study examined a particular subset of this population, ABHE member schools, to determine their relationship to their IPEDS size category peers in terms of each of these variables.

Using IPEDS data from 2013, this study tested eight hypotheses concerning the relationships between these three variables. Hypotheses one and two tested the relationship between diversity and enrollment size. Hypotheses three through five tested the relationship between diversity or enrollment size and financial strength. Hypotheses six through eight assumed that the demographic changes predicted by the Department of Education (Hussar & Bailey, 2013) were accurate and tested how diversity or enrollment
size might affect the change in financial strength scores under such changing circumstances.

While this study was unable to reject the null hypothesis for any of the eight hypotheses, important relationships and patterns were uncovered. The relationships, in fact, exist, but are much more complicated than the simple straight-line correlation hypothesized. The study found that while larger schools are not more diverse than smaller schools, the diversity of schools tends to converge towards the diversity of the population of the United States as they get larger. The study found that large schools are not financially stronger than small schools, but large and small schools are stronger than schools in the middle two IPEDS size categories. Finally, the study found that the predicted demographic changes do not put small schools at greater risk of negative financial risk, but that small schools will suffer a greater range of financial consequences, both positive and negative.

In regards to the studied subset, ABHE member schools, the study found that they are just as diverse and financially strong as their secular peers. While the study showed that their financial strength scores will be less volatile if the predicted demographic changes materialize, they are, in fact, positioned to suffer fewer positive financial results. This result indicates that ABHE member schools need to make an effort to recruit more Hispanic and Asian students.

It is hoped the results of this study will encourage all four-year, private colleges and universities to examine their own relationship to the external environment and develop strategic growth and diversity plans that are sensitive to the changes expected in that environment.
References


Retrieved on December 7, 2014 from


Appendix A
List of ABHE Member Schools Used in this Study

**IPEDS Size Category 1,000 - 4,999**

Cairn University-Langhorne
Columbia International University
Hope International University
Johnson University
Lancaster Bible College
Luther Rice University & Seminary
Moody Bible Institute
Ohio Christian University
Rocky Mountain College
William Jessup University

**IPEDS Size Category under 1,000**

Alaska Bible College
Allegheny Wesleyan College
American Baptist College
Appalachian Bible College
Arizona Christian University
Arlington Baptist College
Austin Graduate School of Theology
Baptist Bible College
Baptist Bible College & Seminary of Pennsylvania
Baptist Missionary Association Theological Seminary
Baptist University of the Americas
Barclay College
Bethel College
Bethesda University of California
Beulah Heights University
Boise Bible College
Calvary Bible College and Theological Seminary
Carolina Christian College
Carolina College of Biblical Studies
Carver Bible College
Central Christian College of the Bible
City Vision College
Clear Creek Baptist Bible College
Clearwater Christian College
College of Biblical Studies-Houston
Crossroads Bible College
Crossroads College
Dallas Christian College
Davis College
Ecclesia College
Emmaus Bible College
Faith Baptist Bible College and Theological Seminary
Family of Faith College
Gods Bible School and College
Grace Bible College
Grace College of Divinity
Grace Mission University
Grace University
Great Lakes Christian College
Heritage Christian University
Hobe Sound Bible College
Horizon University
Huntsville Bible College
Kentucky Mountain Bible College
Kuyper College
Life Pacific College
Lincoln Christian University
Manhattan Christian College
Mid-South Christian College
Multnomah University
Nazarene Bible College
Nebraska Christian College
New Hope Christian College-Eugene
New Hope Christian College-Honolulu
Northpoint Bible College
Oak Hills Christian College
Ozark Christian College
Pillar College
Rio Grande Bible Institute
Saint Louis Christian College
Selma University
Simmons College of Kentucky
South Florida Bible College and Theological Seminary
Southeastern Baptist College
Southeastern Bible College
SUM Bible College and Theological Seminary
Summit Christian College
Trinity Bible College
Trinity College of Florida
Welch College
Williamson Christian College
World Mission University
Appendix B
List of all Schools in the Dataset by IPEDS Size Category

20,000+

Boston University
Brigham Young University-Idaho
Brigham Young University-Provo
Columbia University in the City of New York
Cornell University
DePaul University
Drexel University
Excelsior College
George Washington University
Harvard University
Johns Hopkins University
Liberty University
New York University
Northeastern University
Northwestern University
Nova Southeastern University
St John's University-New York
Syracuse University
University of Pennsylvania
University of Southern California
Western Governors University

10,000 - 19,999

American University
Azusa Pacific University
Baylor University
Boston College
Carnegie Mellon University
Case Western Reserve University
Columbia College
Columbia College-Chicago
Duke University
Embry-Riddle Aeronautical University-Worldwide
Emory University
Fordham University
Georgetown University
Hofstra University
Howard University
Indiana Wesleyan University
Johnson & Wales University-Providence
Keiser University-Ft Lauderdale
Lindenwood University
LIU Post
Loyola University Chicago
Marquette University
Massachusetts Institute of Technology
Mercy College
National University
Pace University-New York
Park University
Rochester Institute of Technology
Saint Leo University
Saint Louis University
Savannah College of Art and Design
Southern Methodist University
Stanford University
The New School
Touro College
Tufts University
Tulane University of Louisiana
Universidad Del Este
Universidad Del Turabo
Universidad Metropolitana
University of Chicago
University of Dayton
University of Denver
University of Miami
University of Notre Dame
University of Rochester
University of San Francisco
University of St Thomas
Vanderbilt University
Villanova University
Washington University in St Louis
Webster University
Wilmington University
Yale University
5,000 - 9,999

Adelphi University
Ashland University
Baker College Center for Graduate Studies
Barry University
Bellevue University
Belmont University
Benedictine University
Bentley University
Beth Medrash Govoha
Bethel University
Biola University
Bradley University
Brandeis University
Brandman University
Brown University
California Baptist University
Campbell University
Catholic University of America
Chapman University
Colorado Christian University
Concordia University-Chicago
Concordia University-Portland
Concordia University-Wisconsin
Creighton University
Dallas Baptist University
Dartmouth College
Davenport University
Drake University
Duquesne University
Elon University
Embry-Riddle Aeronautical University-Daytona Beach
Endicott College
Fairleigh Dickinson University-Metropolitan Campus
Florida Institute of Technology
Franklin University
Gonzaga University
Harding University
Hawaii Pacific University
Illinois Institute of Technology
Indiana Institute of Technology
Inter American University of Puerto Rico-Metro
Inter American University of Puerto Rico-Ponce
Inter American University of Puerto Rico-San German
Ithaca College
La Salle University
Lehigh University
Lesley University
Lewis University
LIU Brooklyn
Loyola Marymount University
Loyola University Maryland
Marist College
Maryville University of Saint Louis
MCPHS University
Mercer University
Missouri Baptist University
Monmouth University
New York Institute of Technology
Northeastern University Global Network
Pepperdine University
Pontifical Catholic University of Puerto Rico-Ponce
Princeton University
Quinnipiac University
Regent University
Regis University
Rensselaer Polytechnic Institute
Rice University
Rider University
Robert Morris University
Roosevelt University
Sacred Heart University
Saint Joseph's College-New York
Saint Joseph's University
Saint Mary's University of Minnesota
Santa Clara University
Seattle University
Seton Hall University
St Catherine University
Stevens Institute of Technology
Suffolk University
Texas Christian University
The University of Tampa
Universidad del Sagrado Corazon
University of Detroit Mercy
University of Hartford
University of Indianapolis
University of La Verne
University of New England
University of New Haven
University of Redlands
University of San Diego
University of Scranton
University of the Incarnate Word
University of the Pacific
Upper Iowa University
Wake Forest University
Wayland Baptist University
Widener University-Main Campus
Worcester Polytechnic Institute
Xavier University
Yeshiva University
York College Pennsylvania

1,000 - 4,999

Abilene Christian University
Adrian College
Adventist University of Health Sciences
AIB College of Business
Albany College of Pharmacy and Health Sciences
Albertus Magnus College
Albion College
Albright College
Alderson Broaddus University
Alfred University
Allegheny College
Alliant International University
Alma College
Alvernia University
Alverno College
Amberton University
American International College
American Musical and Dramatic Academy
American University of Puerto Rico
Amherst College
Anderson University
Anderson University
Andrews University
Anna Maria College
Aquinas College
Arcadia University
Arkansas Baptist College
Art Center College of Design
Asbury University
Assumption College
Atenas College
Atlantic University College
Augsburg College
Augustana College
Augustana College
Aurora University
Austin College
Avila University
Babson College
Baker College of Allen Park
Baker College of Auburn Hills
Baker College of Cadillac
Baker College of Clinton Township
Baker College of Flint
Baker College of Jackson
Baker College of Muskegon
Baker College of Owosso
Baker College of Port Huron
Baker University
Baldwin Wallace University
Baptist Memorial College of Health Sciences
Bard College
Barnard College
Barton College
Bastyr University
Bates College
Bay Path College
Bayamon Central University
Becker College
Belhaven University
Bellarmine University
Belmont Abbey College
Beloit College
Benedict College
Benedictine College
Berea College
Berklee College of Music
Berry College
Bethel College-Indiana
Bethel University
Bethune-Cookman University
Birmingham Southern College
Bloomfield College
Bluffton University
Boricua College
Boston Architectural College
Bowdoin College
Brenau University
Briar Cliff University
Bridgewater College
Brigham Young University-Hawaii
Bryan College-Dayton
Bryant University
Bryn Mawr College
Bucknell University
Buena Vista University
Butler University
Cabrini College
Cairn University-Langhorne
California College of the Arts
California Institute of Integral Studies
California Institute of Technology
California Institute of the Arts
California Lutheran University
Calumet College of Saint Joseph
Calvin College
Cambridge College
Campbellsville University
Canisius College
Capital University
Cardinal Stritch University
Caribbean University-Bayamon
Caribbean University-Ponce
Carleton College
Carlow University
Carroll College
Carroll University
Carson-Newman University
Carron College
Catawba College
Cazenovia College
Cedar Crest College
Cedarville University
Centenary College
Central Christian College of Kansas
Central College
Central Methodist University-College of Graduate and Extended Studies
Central Methodist University-College of Liberal Arts and Sciences
Centre College
Chaminade University of Honolulu
Champlain College
Charleston Southern University
Chatham University
Chestnut Hill College
Chowan University
Christian Brothers University
City University of Seattle
Claflin University
Claremont McKenna College
Clark Atlanta University
Clark University
Clarke University
Clarkson College
Clarkson University
Coe College
Coker College
Colby College
Colby-Sawyer College
Colgate University
College for Creative Studies
College of Mount Saint Vincent
College of Mount St Joseph
College of Our Lady of the Elms
College of Saint Benedict
College of Saint Elizabeth
College of the Holy Cross
College of the Ozarks
Colorado College
Columbia College
Columbia International University
Columbus College of Art and Design
Concordia College at Moorhead
Concordia University-Irvine
Concordia University-Nebraska
Concordia University-Saint Paul
Concordia University-Texas
Connecticut College
Converse College
Corban University
Cornell College
Cornerstone University
Covenant College
Crown College
Culinary Institute of America
Cumberland University
Curry College
Daemen College
Davidson College
Dean College
Delaware Valley College
Denison University
DePauw University
DeSales University
Dewey University-Hato Rey
Dickinson College
Dillard University
Doane College-Crete
Doane College-Lincoln Grand Island and Master
Dominican College of Blauvelt
Dominican University
Dominican University of California
Dordt College
Dowling College
Drew University
Drury University
Dunwoody College of Technology
D’Youville College
Earlham College
East Texas Baptist University
Eastern Mennonite University
Eastern Nazarene College
Eastern University
Eckerd College
Edgewood College
EDP University of Puerto Rico Inc-San Juan
EDP University of Puerto Rico Inc-San Sebastian
Elizabethtown College
Elmhurst College
Elmira College
Embry-Riddle Aeronautical University-Prescott
Emerson College
Emmanuel College
Evangel University
Everglades University
Fairfield University
Fairleigh Dickinson University-College at Florham
Faulkner University
Felician College
Ferrum College
Fisher College
Flagler College-St Augustine
Florida Institute of Technology-Online
Florida Memorial University
Florida Southern College
Fontbonne University
Franciscan University of Steubenville
Franklin and Marshall College
Franklin College
Franklin Pierce University
Freed-Hardeman University
Fresno Pacific University
Friends University
Furman University
Gallaudet University
Gannon University
Gardner-Webb University
Geneva College
George Fox University
Georgetown College
Georgian Court University
Gettysburg College
Golden Gate University-San Francisco
Goldey-Beacom College
Goodwin College
Gordon College
Goucher College
Grace College and Theological Seminary
Graceland University-Lamoni
Grand View University
Greensboro College
Greenville College
Grinnell College
Grove City College
Guilford College
Gustavus Adolphus College
Gwynedd Mercy University
Hamilton College
Hamline University
Hampden-Sydney College
Hampshire College
Hampton University
Hannibal-LaGrange University
Hanover College
Hardin-Simmons University
Hartwick College
Hastings College
Haverford College
Heidelberg University
Hendrix College
Heritage University
High Point University
Hilbert College
Hiram College
Hobart William Smith Colleges
Hodges University
Holy Family University
Holy Names University
Hood College
Hope College
Hope International University
Houghton College
Houston Baptist University
Howard Payne University
Huntingdon College
Huntington University
Husson University
Illinois College
Illinois Wesleyan University
Immaculata University
Independence University
Inter American University of Puerto Rico-Aguadilla
Inter American University of Puerto Rico-Arecibo
Inter American University of Puerto Rico-Barranquitas
Inter American University of Puerto Rico-Bayamón
Inter American University of Puerto Rico-Fajardo
Inter American University of Puerto Rico-Guayama
Iona College
Jacksonville University
Jefferson College of Health Sciences
John Brown University
John Carroll University
John F Kennedy University
Johnson & Wales University-Charlotte
Johnson & Wales University-Denver
Johnson & Wales University-North Miami
Johnson C Smith University
Johnson University
Judson University
Juniata College
Kalamazoo College
Kenyon College
Kettering University
Keuka College
Keystone College
King University
King's College
Knox College
La Roche College
La Sierra University
Lafayette College
Lake Erie College
Lake Forest College
Lakeland College
Lancaster Bible College
Lane College
Lasell College
Lawrence Technological University
Lawrence University
Le Moyne College
Le Moyne-Owen College
Lebanon Valley College
Lee University
Lenoir-Rhyne University
LeTourneau University
Lewis & Clark College
Life University
Limestone College
Lincoln College
Lincoln Memorial University
Lindsey Wilson College
Linfield College-McMinnville Campus
Lipscomb University
Livingstone College
Loma Linda University
Loras College
Louisiana College
Lourdes University
Loyola University New Orleans
Lubbock Christian University
Luther College
Luther Rice University & Seminary
Lycoming College
Lynchburg College
Lynn University
Macalester College
Madonna University
Maharishi University of Management
Malone University
Manchester University
Manhattan College
Manhattanville College
Maranatha Baptist University
Marian University
Marian University
Marietta College
Mars Hill University
Martin Methodist College
Mary Baldwin College
Marygrove College
Maryland Institute College of Art
Marylhurst University
Marymount California University
Marymount Manhattan College
Marymount University
Maryville College
Marywood University
McDaniel College
McKendree University
McMurry University
Medaille College
Mercy College of Ohio
Mercyhurst University
Meredith College
Merrimack College
Messiah College
Methodist University
Metropolitan College of New York
MGH Institute of Health Professions
Michigan Jewish Institute
Mid-America Christian University
MidAmerica Nazarene University
Mid-Continent University
Middlebury College
Midland University
Midway College
Midwestern Baptist Theological Seminary
Miles College
Milligan College
Millikin University
Mills College
Milwaukee School of Engineering
Misericordia University
Mississippi College
Missouri Valley College
Molloy College
Monmouth College
Moody Bible Institute
Moravian College
Morehouse College
Morningside College
Mount Aloysius College
Mount Carmel College of Nursing
Mount Holyoke College
Mount Ida College
Mount Marty College
Mount Mary University
Mount Mercy University
Mount Olive College
Mount Saint Mary College
Mount St Mary's College
Mount St Mary's University
Mount Vernon Nazarene University
Muhlenberg College
Muskingum University
National Louis University
Nazareth College
Nebraska Wesleyan University
Neumann University
New England College
New England Institute of Technology
New Orleans Baptist Theological Seminary
Newberry College
Newman University
Niagara University
Nichols College
North Carolina Wesleyan College
North Central College
North Central University
North Greenville University
North Park University
Northwest Nazarene University
Northwest University
Northwestern College
Northwood University-Michigan
Norwich University
Notre Dame College
Notre Dame de Namur University
Notre Dame of Maryland University
Nyack College
Oakland City University
Oakwood University
Oberlin College
Occidental College
Oglethorpe University
Ohio Christian University
Ohio Dominican University
Ohio Northern University
Ohio Wesleyan University
Oklahoma Baptist University
Oklahoma Christian University
Oklahoma City University
Oklahoma Wesleyan University
Olivet College
Olivet Nazarene University
Oral Roberts University
Otis College of Art and Design
Otterbein University
Ouachita Baptist University
Our Lady of Holy Cross College
Our Lady of the Lake College
Our Lady of the Lake University
Pacific Lutheran University
Pacific Oaks College
Pacific Union College
Pacific University
Palm Beach Atlantic University
Palmer College of Chiropractic-Davenport
Peirce College
Pennsylvania College of Health Sciences
Pfeiffer University
Philadelphia University
Piedmont College
Pitzer College
Point Loma Nazarene University
Point Park University
Point University
Polytechnic Institute of New York University
Pomona College
Pontifical Catholic University of Puerto Rico-Mayaguez
Pratt Institute-Main
Presbyterian College
Providence College
Queens University of Charlotte
Quincy University
Randolph-Macon College
Ranken Technical College
Reed College
Regis College
Reinhardt University
Rhode Island School of Design
Rhodes College
Ringling College of Art and Design
Rivier University
Roanoke College
Robert Morris University Illinois
Roberts Wesleyan College
Rochester College
Rockford University
Rockhurst University
Rocky Mountain College
Roger Williams University
Rollins College
Rose-Hulman Institute of Technology
Roseman University of Health Sciences
Rush University
Saint Ambrose University
Saint Anselm College
Saint Augustine College
Saint Augustine's University
Saint Edward's University
Saint Francis University
Saint John Fisher College
Saint Johns University
Saint Josephs College
Saint Joseph's College of Maine
Saint Martin's University
Saint Mary's College
Saint Mary's College of California
Saint Michael's College
Saint Norbert College
Saint Peter's University
Saint Vincent College
Saint Xavier University
Salem College
Salve Regina University
Samford University
Samuel Merritt University
Sarah Lawrence College
School of the Art Institute of Chicago
Schreiner University
Scripps College
Seattle Pacific University
Seton Hill University
Sewanee-The University of the South
Shaw University
Shenandoah University
Shorter University
Shorter University-College of Adult & Professional Programs
Siena College
Siena Heights University
Simmons College
Simpson College
Simpson University
Skidmore College
Smith College
Sojourner-Douglass College
Southeastern Baptist Theological Seminary
Southeastern University
Southern Adventist University
Southern Nazarene University
Southern Wesleyan University
Southwest Baptist University
Southwestern Assemblies of God University
Southwestern College
Southwestern University
Spalding University
Spelman College
Spring Arbor University
Spring Hill College
Springfield College
Springfield College-School of Human Services
St Bonaventure University
St Francis College
St Lawrence University
St Louis College of Pharmacy
St Mary's University
St Olaf College
St Thomas Aquinas College
St Thomas University
Stetson University
Stevens-Henager College-Murray
Stevenson University
Stonehill College
Susquehanna University
Swarthmore College
Taylor University
Tennessee Temple University
Tennessee Wesleyan College
Texas Lutheran University
Texas Wesleyan University
The College of Idaho
The College of New Rochelle
The College of Saint Rose
The College of Saint Scholastica
The College of Wooster
The Master's College and Seminary
The Sage Colleges
The Southern Baptist Theological Seminary
The University of Findlay
The University of the Arts
Thiel College
Thomas College
Thomas Jefferson University
Thomas More College
Thomas University
Thunderbird School of Global Management
Tiffin University
Touro University Nevada
Transylvania University
Trevecca Nazarene University
Trine University
Trinity Christian College
Trinity College
Trinity International University-Illinois
Trinity University
Trinity Washington University
Tusculum College
Tuskegee University
Union College
Union College
Union Institute & University
Union University
United Talmudical Seminary
Universal Technology College of Puerto Rico
Universidad Adventista de las Antillas
Universidad Politecnica de Puerto Rico
University of Bridgeport
University of Charleston
University of Dallas
University of Dubuque
University of Evansville
University of Great Falls
University of Mary
University of Mary Hardin-Baylor
University of Mobile
University of Mount Union
University of Northwestern Ohio
University of Northwestern-St Paul
University of Pikeville
University of Portland
University of Puget Sound
University of Richmond
University of Rio Grande
University of Saint Francis-Fort Wayne
University of Saint Joseph
University of Saint Mary
University of Sioux Falls
University of St Francis
University of St Thomas
University of the Cumberlands
University of the Sciences
University of Tulsa
Urbana University
Ursinus College
Ursuline College
Uta Mesivta of Kiryas Joel
Utica College
Valley Forge Christian College
Valparaiso University
Vanguard University of Southern California
Vassar College
Vaughn College of Aeronautics and Technology
Virginia Union University
Virginia Wesleyan College
Viterbo University
Wagner College
Walla Walla University
Walsh College of Accountancy and Business Administration
Walsh University
Warner University
Wartburg College
Washington & Jefferson College
Washington Adventist University
Washington and Lee University
Washington College
Waynesburg University
Wellesley College
Wentworth Institute of Technology
Wesley College
Wesleyan University
West Virginia Wesleyan College
Western New England University
Westminster College
Westminster College
Westminster College
Westmont College
Wheaton College
Wheaton College
Wheeling Jesuit University
Wheelock College
Whitman College
Whittier College
Whitworth University
Wiley College
Wilkes University
Willamette University
William Carey University
William Jessup University
William Jewell College
William Peace University
William Penn University
William Woods University
Williams College
Wilmington College
Wingate University
Wisconsin Lutheran College
Wittenberg University
Wofford College
Woodbury University
Wright Career College
Xavier University of Louisiana
Young Harris College

**Under 1,000**

Agnes Scott College
Alaska Bible College
Alaska Pacific University
Alice Lloyd College
Allegheny Wesleyan College
Allen College
Allen University
American Baptist College
American Indian College of the Assemblies of God Inc
American University of Puerto Rico
Amridge University
Antioch College
Antioch University-Los Angeles
Antioch University-Midwest
Antioch University-Santa Barbara
Antioch University-Seattle
Apex School of Theology
Appalachian Bible College
Aquinas College
Arizona Christian University
Arlington Baptist College
Art Academy of Cincinnati
Athenaeum of Ohio
Atlantic Institute of Oriental Medicine
Aultman College of Nursing and Health Sciences
Austin Graduate School of Theology
Ave Maria University
Averett University
Azusa Pacific Online University
Bacone College
Bais HaMedrash and Mesivta of Baltimore
Bais Medrash Elyon
Bais Medrash Torah Chesed
Baptist Bible College
Baptist Bible College & Seminary of Pennsylvania
Baptist Missionary Association Theological Seminary
Baptist University of the Americas
Barclay College
Bard College at Simon's Rock
Barnes-Jewish College Goldfarb School of Nursing
Beacon College
Be'er Yaakov Talmudic Seminary
Beis Medrash Heichal Dovid
Bellin College
Benjamin Franklin Institute of Technology
Bennett College
Bennington College
Bergin University of Canine Studies
Beth Hamedrash Shaarei Yosher Institute
Beth Hatalmud Rabbinical College
Bethany College
Bethany College
Bethany Lutheran College
Bethel College
Bethel College-North Newton
Bethesda University of California
Beulah Heights University
Birthingway College of Midwifery
Blackburn College
Blessing Rieman College of Nursing
Blue Mountain College
Bluefield College
Boise Bible College
Bon Secours Memorial College of Nursing
Boston Baptist College
Brescia University
Brevard College
Brewton-Parker College
Bryan College of Health Sciences
Bryn Athyn College of the New Church
Burlington College
Cabarrus College of Health Sciences
California Christian College
California College San Diego
California College San Diego
California College San Diego
California University of Management and Sciences
Calvary Bible College and Theological Seminary
Capitol College
Caribbean University-Carolina
Caribbean University-Vega Baja
Carlos Albizu University-Miami
Carlos Albizu University-San Juan
Carolina Christian College
Carolina College of Biblical Studies
Carver Bible College
Cathedral Bible College
Centenary College of Louisiana
Central Baptist College
Central Baptist Theological Seminary
Central Christian College of the Bible
Central Yeshiva Tomchei Tmimim Lubavitz
Centro de Estudios Multidisciplinarios-Bayamon
Centro de Estudios Multidisciplinarios-Humacao
Centro de Estudios Multidisciplinarios-San Juan
Charles R Drew University of Medicine and Science
Christian Life College
Cincinnati Christian University
Cincinnati College of Mortuary Science
City College-Fort Lauderdale
City College-Gainesville
City College-Miami
City Vision College
Clear Creek Baptist Bible College
Clearwater Christian College
Cleary University
Cleveland Institute of Art
Cleveland University-Kansas City
Clinton College
Coleman University
College America-Cheyenne
College America-Colorado Springs
College America-Denver
College America-Flagstaff
College America-Fort Collins
College America-Phoenix
College of Biblical Studies-Houston
College of Menominee Nation
College of Saint Mary
College of St Joseph
College of the Atlantic
CollegeAmerica-Colorado Springs South
CollegeAmerica-Stevens Henager College
Colorado Heights University
Columbia College of Nursing
Columbia College-Hollywood
Compass College of Cinematic Arts
Conception Seminary College
Concordia College Alabama
Concordia College-New York
Concordia University-Ann Arbor
Cooper Union for the Advancement of Science and Art
Corcoran College of Art and Design
Cornish College of the Arts
Cottley College
Cox College
Criswell College
Crossroads Bible College
Crossroads College
Crowley's Ridge College
Culver-Stockton College
Curtis Institute of Music
Dakota Wesleyan University
Dallas Christian College
Davis & Elkins College
Davis College
Defiance College
Dell'Arte International School of Physical Theatre
Divine Word College
Dongguk University-Los Angeles
Donnelly College
East-West University
Ecclesia College
Ecumenical Theological Seminary
Edward Waters College
Elizabethtown College School of Continuing and Professional Studies
Emmanuel College
Emmaus Bible College
Emory & Henry College
Epic Bible College
Erskine College
Eureka College
Faith Baptist Bible College and Theological Seminary
Faith Evangelical College & Seminary
Faith Theological Seminary
Family of Faith College
Finlandia University
Fisk University
Flagler College-Tallahassee
Florida College
Frank Lloyd Wright School of Architecture
Franklin W Olin College of Engineering
Georgia Christian University
Goddard College
Gods Bible School and College
Good Samaritan College of Nursing and Health Science
Goshen College
Grace Bible College
Grace College of Divinity
Grace Mission University
Grace School of Theology
Grace University
Gratz College
Great Lakes Christian College
Green Mountain College
Hallmark College
Harrisburg University of Science and Technology
Harvey Mudd College
Hebrew College
Hebrew Theological College
Helene Fuld College of Nursing
Hellenic College-Holy Cross Greek Orthodox School of Theology
Heritage Bible College
Heritage Christian University
Hillsdale Free Will Baptist College
Hiwassee College
Hobe Sound Bible College
Hollins University
Holy Apostles College and Seminary
Holy Cross College
Hood Theological Seminary
Horizon University
Humacao Community College
Humphreys College-Stockton and Modesto Campuses
Huntsville Bible College
Huston-Tillotson University
International Baptist College and Seminary
Iowa Wesleyan College
Jarvis Christian College
Jewish Theological Seminary of America
John Paul the Great Catholic University
Johnson & Wales University-Online
Johnson University Florida
Jones College-Jacksonville
Judson College
Kansas City Art Institute
Kansas Wesleyan University
Kehilath Yakov Rabbinical Seminary
Kenrick Glennon Seminary
Kentucky Christian University
Kentucky Mountain Bible College
Kentucky Wesleyan College
Kettering College
King's University
Kuyper College
Laboure College
LaGrange College
Laguna College of Art and Design
Lakeview College of Nursing
Landmark College
Lexington College
Life Pacific College
Lincoln Christian University
Lincoln University
Linfield College-Adult Degree Program
Linfield College-School of Nursing
LIU Brentwood
LIU Riverhead
Logan University
Longy School of Music of Bard College
Lyme Academy College of Fine Arts
Lyon College
Machzikei Hadath Rabbinical College
MacMurray College
Maine College of Art
Manhattan Christian College
Manhattan School of Music
Manthano Christian College
Maple Springs Baptist Bible College and Seminary
Maria College of Albany
Marian Court College
Marlboro College
Marlboro College-Graduate School
Martin Luther College
Martin University
Mayo School of Health Sciences
McPherson College
Memphis College of Art
Menlo College
Mercy College of Health Sciences
Mesivta Keser Torah
Mesivta of Eastern Parkway-Yeshiva Zichron Meilech
Mesivta Torah Vodaath Rabbinical Seminary
Mesivtha Tifereth Jerusalem of America
Messenger College
Methodist College
Mid-America College of Funeral Service
Mid-Atlantic Christian University
Mid-South Christian College
Midwives College of Utah
Millsaps College
Milwaukee Institute of Art & Design
Minneapolis College of Art and Design
Mirrer Yeshiva Cent Institute
Mitchell College
Monterey Institute of International Studies
Montreat College
Montserrat College of Art
Moore College of Art and Design
Morris College
Mount Angel Seminary
Multnomah University
Naropa University
National Labor College
National University of Health Sciences
Nazarene Bible College
Nebraska Christian College
Nebraska Methodist College of Nursing & Allied Health
Ner Israel Rabbinical College
New England School of Communications
New Hampshire Institute of Art
New Hope Christian College-Eugene
New Hope Christian College-Honolulu
New Life Theological Seminary
New Saint Andrews College
New York College of Health Professions
New York College of Traditional Chinese Medicine
New York School of Interior Design
Newbury College
North American University
Northland College
Northland International University
Northpoint Bible College
Northwest Christian University
Northwestern Health Sciences University
Northwestern Polytechnic University
Northwood University-Florida
Northwood University-Texas
Oak Hills Christian College
Ohio Mid-Western College
Ohio Valley University
Ohr Hameir Theological Seminary
O’More College of Design
Oregon College of Art and Craft
Ottawa University-Jeffersonville
Ottawa University-Kansas City
Ottawa University-Milwaukee
Ottawa University-Online
Ottawa University-Ottawa
Ottawa University-Phoenix
Ozark Christian College
Pacific Islands University
Pacific Northwest College of Art
Pacific States University
Paine College
Palo Alto University
Parker University
Paul Quinn College
Paul Smiths College of Arts and Science
Pennsylvania Academy of the Fine Arts
Pennsylvania College of Art and Design
Philander Smith College
Piedmont International University
Pillar College
Pine Manor College
Polytechnic University of Puerto Rico-Miami
Polytechnic University of Puerto Rico-Orlando
Pontifical Catholic University of Puerto Rico-Arecibo
Pontifical College Josephinum
Prescott College
Presentation College
Principia College
Providence Christian College
Rabbi Jacob Joseph School
Rabbinical Academy Mesivta Rabbi Chaim Berlin
Rabbinical College Beth Shraga
Rabbinical College Bobover Yeshiva Bnei Zion
Rabbinical College of America
Rabbinical College of Ch'san Sofer New York
Rabbinical College of Long Island
Rabbinical College of Ohr Shimon Yisroel
Rabbinical College Telshe
Rabbinical Seminary M'kor Chaim
Rabbinical Seminary of America
Randolph College
Remington College of Nursing Orlando
Remington College-Dallas Campus
Remington College-Heathrow Campus
Remington College-Honolulu Campus
Remington College-Memphis Campus
Remington College-Tampa Campus
Resurrection University
Rio Grande Bible Institute
Ripon College
Rosemont College
Rust College
Sacred Heart Major Seminary
Saint Anthony College of Nursing
Saint Catharine College
Saint Charles Borromeo Seminary-Overbrook
Saint Francis Medical Center College of Nursing
Saint Gregory's University
Saint John Vianney College Seminary
Saint John's Seminary
Saint Joseph Seminary College
Saint Louis Christian College
Saint Luke's College of Health Sciences
Saint Mary-of-the-Woods College
Saint Patrick's Seminary and University
Salish Kootenai College
San Diego Christian College
San Francisco Art Institute
San Francisco Conservatory of Music
San Juan Bautista School of Medicine
Sanford College of Nursing
School of the Museum of Fine Arts-Boston
Selma University
Sentara College of Health Sciences
Shasta Bible College and Graduate School
Shepherds Theological Seminary
Shimer College
Sh'or Yoshuv Rabbinical College
Sierra Nevada College
Silver Lake College of the Holy Family
Simmons College of Kentucky
Sinte Gleska University
Sofia University
Soka University of America
South Baylo University
South Florida Bible College and Theological Seminary
Southeastern Baptist College
Southeastern Bible College
Southern California Institute of Architecture
Southern California Seminary
Southern California University of Health Sciences
Southern Vermont College
Southern Virginia University
Southwestern Adventist University
Southwestern Christian College
Southwestern Christian University
St Andrews University
St John's College
St John's College
St John's College of Nursing
St Luke's College
St Vincent's College
Stephens College
Sterling College
Sterling College
Stevens-Henager College of Business-Provo
Stevens-Henager College-Boise
Stevens-Henager College-Logan
Stevens-Henager College-Ogden
Stevens-Henager College-St George
Stillman College
SUM Bible College and Theological Seminary
Summit Christian College
Sweet Briar College
Tabor College
Talladega College
Talmudic College of Florida
Talmudical Academy-New Jersey
Talmudical Institute of Upstate New York
Talmudical Seminary of Bobov
Talmudical Seminary Oholei Torah
Talmudical Yeshiva of Philadelphia
Telshe Yeshiva-Chicago
Texas College
The Baptist College of Florida
The Boston Conservatory
The Christ College of Nursing and Health Sciences
The Juilliard School
The Kingâ€™s College
The New England Conservatory of Music
The Robert B Miller College
Thomas Aquinas College
Thomas More College of Liberal Arts
Toccoa Falls College
Torah Temimah Talmudical Seminary
Tougaloo College
Touro University Worldwide
Trine University-Regional/Non-Traditional Campuses
Trinity Baptist College
Trinity Bible College
Trinity College of Florida
Trinity College of Nursing & Health Sciences
Trinity International University-Florida
Trinity Lutheran College
Tri-State Bible College
Turtle Mountain Community College
Unification Theological Seminary
Union College
United States Sports Academy
United Tribes Technical College
Unity College
Universidad Central Del Caribe
Universidad Pentecostal Mizpa
Universidad Teologica del Caribe
University of Fort Lauderdale
University of Jamestown
University of the Ozarks
University of the Southwest
University of the West
University of Western States
VanderCook College of Music
Villa Maria College
Virginia Baptist College
Virginia Intermont College
Virginia University of Lynchburg
Visible Music College
Voorhees College
Wabash College
Warner Pacific College
Warner Pacific College Adult Degree Program
Warren Wilson College
Watkins College of Art Design & Film
Webb Institute
Webber International University
Welch College
Wells College
Wesleyan College
Whitworth University-Adult Degree Programs
Widener University-Delaware Campus
Wilberforce University
Williams Baptist College
Williamson Christian College
Wilson College
World Mission University
Yeshiva and Kollel Harbotzas Torah
Yeshiva College of the Nations Capital
Yeshiva Derech Chaim
Yeshiva D'monsey Rabbinical College
Yeshiva Gedolah Imrei Yosef D'spinka
Yeshiva Gedolah Kesser Torah
Yeshiva Gedolah of Greater Detroit
Yeshiva Gedolah Zichron Leyma
Yeshiva Karlin Stolin
Yeshiva of Far Rockaway Derech Ayson Rabbinical Seminary
Yeshiva of Machzikai Hadas
Yeshiva of Nitra Rabbinical College
Yeshiva of the Telshe Alumni
Yeshiva Ohr Elchonon Chabad West Coast Talmudical Seminary
Yeshiva Shaar Hatorah
Yeshiva Shaarei Torah of Rockland
Yeshiva Toras Chaim
Yeshiva Toras Chaim Talmudical Seminary
Yeshiva Yesodei Hatorah
Yeshivah Gedolah Rabbinical College
Yeshivas Be'er Yitzchok
Yeshivas Novominsk
Yeshivat Mikdash Melech
Yeshivath Beth Moshe
Yeshivath Viznitz
Yeshivath Zichron Moshe
York College
Appendix C
Schools Excluded from the Analysis of Hypotheses 3-8 Due to Lack of Data

American University of Puerto Rico
Antioch University-Los Angeles
Antioch University-Midwest
Antioch University-Santa Barbara
Antioch University-Seattle
Aultman College of Nursing and Health Sciences
Baker College Center for Graduate Studies
Baker College of Allen Park
Baker College of Auburn Hills
Baker College of Cadillac
Baker College of Clinton Township
Baker College of Jackson
Baker College of Muskegon
Baker College of Owosso
Baker College of Port Huron
Barnes-Jewish College Goldfarb School of Nursing
Blessing Rieman College of Nursing
Bon Secours Memorial College of Nursing
Bryan College of Health Sciences
Bryn Athyn College of the New Church
Cabarrus College of Health Sciences
Cathedral Bible College
Central Methodist University-College of Graduate and Extended Studies
Centro de Estudios Multidisciplinarios-Bayamon
Centro de Estudios Multidisciplinarios-Humacao
City College-Gainesville
City College-Miami
Cox College
Dewey University-Hato Rey
Doane College-Lincoln Grand Island and Master
EDP University of Puerto Rico Inc-San Sebastian
Elizabethtown College School of Continuing and Professional Studies
Embry-Riddle Aeronautical University-Prescott
Embry-Riddle Aeronautical University-Worldwide
Fairleigh Dickinson University-College at Florham
Florida Institute of Technology-Online
Frank Lloyd Wright School of Architecture
Good Samaritan College of Nursing and Health Science
Inter American University of Puerto Rico-Aguadilla
Inter American University of Puerto Rico-Arecibo
Inter American University of Puerto Rico-Barranquitas
Inter American University of Puerto Rico-Bayamón
Inter American University of Puerto Rico-Fajardo
Inter American University of Puerto Rico-Guayama
Inter American University of Puerto Rico-Metro
Inter American University of Puerto Rico-Ponce
Inter American University of Puerto Rico-San German
Johnson & Wales University-Charlotte
Johnson & Wales University-Denver
Johnson & Wales University-North Miami
Johnson & Wales University-Online
Kettering College
Linfield College-Adult Degree Program
Linfield College-School of Nursing
LIU Brentwood
LIU Brooklyn
LIU Post
LIU Riverhead
Marlboro College-Graduate School
Mayo School of Health Sciences
Methodist College
Monterey Institute of International Studies
Mount Angel Seminary
Northeastern University Global Network
Northwood University-Florida
Northwood University-Texas
Ottawa University-Jeffersonville
Ottawa University-Kansas City
Ottawa University-Milwaukee
Ottawa University-Online
Ottawa University-Phoenix
Polytechnic University of Puerto Rico-Miami
Polytechnic University of Puerto Rico-Orlando
Pontifical Catholic University of Puerto Rico-Arecibo
Pontifical Catholic University of Puerto Rico-Mayaguez
Resurrection University
Saint Anthony College of Nursing
Saint Francis Medical Center College of Nursing
Saint Luke's College of Health Sciences
School of the Art Institute of Chicago
Shorter University-College of Adult & Professional Programs
Springfield College-School of Human Services
St Luke's College
The Christ College of Nursing and Health Sciences
Trine University-Regional/Non-Traditional Campuses
Trinity College of Nursing & Health Sciences
Warner Pacific College Adult Degree Program
Whitworth University-Adult Degree Programs
Widener University-Delaware Campus