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An Investigation of the Trends in Pricing for Christian Higher Education and Its Relationship to Perceived Quality

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Abstract

Christian higher education administrators battle with how much to increase tuition on a consistent basis. One of the concerns with increasing tuition is the negative effect it will have on their prospective student market. The literature review was used to establish an understanding of the price-quality (PQ) relationship and its role in higher education, identify gaps in the research, and provide a context for the current study. The summary of the literature review is comprised of main points of interest through the previous sections and shows a need for further exploration into how the PQ relationship affects Christian higher education. A discussion of how the literature is used to engage the process of raising tuition helps the reader comprehend the higher education environment and culture. Budgetary needs, market positioning, new student enrollment and retention are only part of the discussion when trying to decide where to set tuition prices for the following year. Ensuring that institution leaders establish their value statement in the minds of students and parents becomes a crucial aspect of pricing in Christian higher education. Quality perception and rising tuition costs continue to influence decisions on campuses across the United States. The current study was used to discover the relationship between price and quality perception (represented as 20 dependent variables related to higher education) of 8 Christian institutions that are members or affiliates of the Council for Christian Colleges and Universities. Correlations (to gauge the strength of the variables), descriptive statistics, and multiple regressions (to form predictability

measures from the historical data) were used. The current study showed significant findings regarding how price (tuition and fees) correlates with changes in enrollment figures, retention, financial aid, alumni financial involvement, class sizes, student-to-faculty ratios, and acceptance rates.

Keywords: higher education, PQ relationship, tuition, quality perception

Acknowledgments

For Laura, Turner, Raegan, and Reese. Thank you for your love during the years of the pursuit of this degree. I love you all. My desires are simple: to be the husband and father who God has blessed me with the opportunity to become, and to reach the potential He has in mind.

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CHAPTER ONE: INTRODUCTION

Statement of the Research Problem

Currently, in the United States few topics capture the attention of the citizens. One of the topics is focused on the expense associated with obtaining a college degree. Van Der Werf and Sabatier (2009) wrote, "No problem is more vexing than the reality that college is increasingly unaffordable for most people" (p. 23), and "Public anxiety over the cost of college is at its highest level ever" (p. 25). Frequently, media commentators discuss the debt that is being accrued by graduating seniors as they enter the job market. When the experts (Reed and Cochrane, 2014) at the Institute for College Access and Success published the ninth annual report (The Project on Student Debt, 2013), they stated, "In 2013, 7 in 10 (69%) graduating seniors at public and private nonprofit colleges had student loans. These borrowers owed an average of $28,400 in federal and private loans combined, up 2% compared to their peers in 2012 (p. 1).

Federal and private loans are being used to cover the increasing price associated with accessing college programs. While members of the media promote stories that would lead people to believe that everyone graduates with $100,000+ debt, most students never reach the six-figure amount (Wang, 2005). Most researchers have focused on the direct price for the tuition and fees to attend a university. Variable prices associated with room and board, which are the responsibilities of the students, can differ significantly. Members of the College Board (2015) shared data to demonstrate how the increase in

published tuition and fees for private, nonprofit colleges, increased 204% from the college year 1974/1985 to the year 2014/2015 (see Table 1). The actual dollar amount increased from $10,273 to $31,231. For example, the cost to attend Baylor University in Waco, Texas increased $19,472 between 2002 and 2012, a 136% increase in tuition and fees.

Table 1

Average Tuition, Fees, Room and Board in 2014 Dollars

	Tuition and Fees in 2014 Dollars						Tuition and Fees and Room and Board in 2014 Dollars			
	Private Nonprofit Four-Year	Five-Year % Change	Public Four-Year	Five-Year % Change	Public Two-Year	Five-Year % Change	Private Nonprofit Four-Year	Five-Year % Change	Public Four-Year	Five-Year % Change
1974-75	$10,273	—	$2,469	—	$1,336	—	$16,475	—	$7,938	—
1979-80	$10,511	2%	$2,405	–3%	$1,157	–13%	$16,339	–1%	$7,587	–4%
1984-85	$12,716	21%	$2,810	17%	$1,337	16%	$19,342	18%	$8,427	11%
1989-90	$16,591	30%	$3,248	16%	$1,611	20%	$24,049	24%	$9,030	7%
1994-95	$18,814	13%	$4,343	34%	$2,103	31%	$26,487	10%	$10,628	18%
1999-2000	$22,179	18%	$4,805	11%	$2,357	12%	$30,692	16%	$11,548	9%
2004-05	$25,215	14%	$6,448	34%	$2,615	11%	$34,549	13%	$14,310	24%
2009-10	$28,476	13%	$7,825	21%	$2,842	9%	$38,799	12%	$16,855	18%
2014-15	$31,231	10%	$9,139	17%	$3,347	18%	$42,419	9%	$18,943	12%

Note. Adapted from College Board (2015)

Need or Significance of the Study

The College Board (2010) experts published an article stating, "Only those with incomes of about $95,000 or higher would be able to pay the average published price of tuition and fees and room and board at public four-year colleges" (p. 2). Wellman (2008) said the reason was that, "college tuitions have grown by 2 to 3 percent per year above inflation for the last 15 years—beating almost every other major commodity" (p. 20). Attending a private, nonprofit college in 2009–2010 cost nearly four times as much as a public four-year college. The price associated with obtaining a bachelor's degree is not

an option for most families. Financial aid and loans make the institutions an option, but at a price. The knowledge of the general public regarding financial aid and how the system works is limited. The U.S. General Accounting Office (1990) report showed the following:

1. 1. Slightly less than 60% of ninth-graders had received no information on higher education financial aid help from their high schools;
2. 2. Most families who are considered mid to low income lacked knowledge of higher education financial aid programs;
3. 3. Parents with some college experience, either of their own or through another child, knew more than parents without that experience; and
4. 4. Parental education levels and income levels were highly important variables associated with financial aid knowledge.

Nearly 40% of students rule out colleges based on the direct cost; about 35% are unsure if they will receive any merit-based aid, and about 55% believe they will not obtain any need-based aid (Bermejo, 2015). The trend is that over a 25-year span, people did not understand what was available to them. Representatives from the U.S. General Accounting Office (1990) stated, "Students and parents held erroneous views about financial aid and school costs" (p. 2).

Families who are trying to fund their children's education need to know what their investment is for and what help they can get. Families need to understand the value their student is receiving. Schmidt, Burroughs, Cogan, and Houang (2011) wrote about the lack of knowledge by the general population regarding what the "value added by these schools" (p. 1) is actually. In the current study, the research indicated the study was

used to help understand if price is a quality indicator for families looking at private, nonprofit education. If the school is a Christian school, what added benefits are provided by the school?

In addition to the consumer side of the consideration, practitioners in higher education would be interested to see how price can influence the quality perception of their institution. It is helpful to know if McConnell's (1968a) assertion that "consumer's perception of the relationship between price and quality appears to be a key factor" (p. 439) is true for these institutions.

Dependent and Independent Variables

The present study used 20 data points within the U.S. News and World Report (USNWR) College Rankings to serve as quality perception indicators, and 2 Integrated Postsecondary Education Data System (IPEDS) data points indicating price, as has been done in other studies (Gilmore, 1990). The 20 dependent variables were as follows:

1. % of classes with 50+ students
2. % of classes with under 20 students
3. % of full-time faculty
4. % of incoming class in top 25%
5. % of faculty with terminal degrees
6. 6-year graduation rate
7. acceptance rate
8. average ACT of entering class
9. % of alumni giving

10. $ amount of average financial aid
11. freshmen retention rate
12. faculty compensation rank
13. peer score
14. student-to-faculty ratio
15. overall U.S. News ranking
16. Change in overall U.S. News rank
17. First-time freshmen (FTF)
18. Change in FTF
19. Full-time enrollment
20. Change in full-time enrollment

The two independent variables were (1) tuition and fees combined, and (2) % change in tuition and fees.

Rao (2005) wrote that the only part of the marketing mix that generates revenues is price. Rao (2005) illustrated the increased need to research how price relates to quality perception in all industries, but more specifically in the service of higher education. Any university administrator wanting to gain understanding of how price influences the purchasing behavior of future students would be interested in the results of the research. The price relationship to quality perception spans economic and psychological areas of study, which leaves the financial officers, who understand the economic side, and the marketing officers, who understand the psychological behaviors, at a disadvantage. Thus, providing research that can help bridge the gap in understanding is important for the practitioners in higher education. Gaining understanding of how first-time freshmen

use price as a quality cue may describe the reality of the perceived quality of the institution.

The current research study was used to add to the current body of knowledge in consumer behavior, higher education marketing, behavioral economics, and the price-quality (PQ) relationship theory. The researchers in the PQ relationship in the service industry will gain ground beyond the dissertation work of Turley (1989, who wrote the only document addressing the PQ relationship regarding the service industry to that date. Additionally, scant work has been done regarding the PQ relationship and higher education. Gilmore (1990) completed a study of 520 private and public institutions. Even with the tremendous changes in higher education over the past 25 years, little research has been completed.

The purpose of the current study was to measure the relationship between pricing (tuition and fees) and the perception of quality for Christian higher education (CHE). A quantitative exploration was employed with archival data from the Integrated Postsecondary Education Data System (IPEDS), U.S. News and World Report College Rankings (USNWRCR), and the Council for Christian Colleges and Universities (CCCU) to gauge the relationship between pricing and the perception of quality. The information provided in the current study will be used to help practitioners understand how their strategic pricing models will affect one of their primary revenue streams. The following sections will further develop the issue and address it using the study investigation. The sections will be used to explain the importance of the current research and its contribution to researchers and practitioners.

The current research was used to measure the perception of quality using the data contained in the USNWRCR. In 2013, U.S. News and World Report had a monthly audience of more than 20 million visitors with 120 million page views, in addition to its 1.5 million print readers (About U.S. News and World Report, 2013). The rankings showed that "many of the top schools are private" and "they tend to be much more expensive to attend" (Schmidt et al., 2011, p. 1). When studying the effect of the USNWRCR on admissions results and tuition setting by administration, Monks and Ehrenberg (1999) found that increases and decreases in rankings "impact admissions outcomes, such as average SAT scores of incoming students, and university pricing policies, such as net tuition" (Meredith, 2004, pp. 443–444).

The current study was used to examine CCCU schools ranked in the Regional Universities South category of USNWRCR. Archival data for the study is available to the public and individuals wishing to conduct research by IPEDS, USNWRCR, and the CCCU member list. IPEDS is the data collection system for the National Center for Education Statistics (NCES), and the data can be accessed at http://nces.ed.gov/ipeds. IPEDS contains data from more than 6,500 higher education institutions that receive student aid funding through the Title IV program. Higher education institutions, as defined by NCES, provide postsecondary education as their sole purpose or primary mission (Knapp, Kelly-Reid, & Grinder, 2011). The IPEDS data are used to establish historical tuition levels and first-time freshmen enrollments; the USNWRCR data is used to provide quality measures that are indicators of perceived quality, and a list of ranked schools; and the CCCU member list is used to provide a list of institutions that was used for the current study.

Higher education administrators struggle with the amount to increase tuition on a consistent basis. One of the concerns with increasing tuition is the effect it will have on their prospective student market. The current study was used to establish an understanding of how pricing strategies relate to a prospective student market. In addition, this study builds on the literature surrounding the PQ relationship as well as pricing strategies in higher education. Scant published research regarding the PQ relationship and CHE exists. From a review of the literature, researchers of the PQ relationship have largely ignored the service industry. The current study was not used to explore any differences regarding evaluations of product quality and service quality. The focus was on understanding price and the quality perception indicators in CHE. The current quantitative study, using archival data, used the following elements:

- Descriptive statistics of the data collected.
- Bivariate correlation measures to analyze the strength of the linear relationships between the independent variables: (a) tuition and fees, and (b) change in tuition and fees; and each of the 20 dependent variables: (a) % of classes with 50+ students, (b) % of classes with under 20 students, (c) % of full-time faculty, (d) % of incoming class in top 25%, (e) % of faculty with terminal degrees, (f) 6-year graduation rate, (g) acceptance rate, (h) average ACT of entering class, (i) % of alumni giving, (j) $ amount of average financial aid, (k) freshmen retention rate, (l) faculty compensation rank, (m) peer score, (n) student-to-faculty ratio, (o) overall USNWR, (p) change in overall USNWR rank, (q) first-time freshmen (FTF), (r) change in FTF, (s) full-time enrollment, and (t) change in full-time enrollment).

- Multiple regressions to analyze the historical trends to form predictability measures.

Definition of Terms

$ amount of average financial aid: The term refers to the average nonneed-based scholarship or grant award for all undergraduate students, including institutional and noninstitutional funds.

Council for Christian Colleges and Universities (CCCU): The CCCU is an international association of intentionally Christ-centered colleges and universities. Founded in 1976 with 38 original members, the Council has grown to 118 members in North America and 54 affiliate institutions in 20 countries (About the CCCU, 2014).

Enrollment: Enrollment is used to define the number of students, both full-time and part-time, taking classes at an institution of education. For the current research study, it represented both full-time and part-time undergraduate students.

Integrated Postsecondary Education Data System (IPEDS): The IPEDS exists within the National Center for Education Statistics (NCES) organization to maintain the data of all higher education institutions in the United States.

National Center for Education Statistics (NCES): The NCES is the primary federal entity for collecting and analyzing data related to education.

Price-quality (PQ) relationship: The PQ relationship is defined as the consumer perception that the lower the price of an item, the lesser the quality. Also, the higher the price paid for the item, the higher the perceived quality.

Quality perception: The perception of an item's quality based on single or multiple information inputs. The quality perception may not represent the item's actual quality. It is a subjective decision process of value perception.

Tuition and fees: For the purpose of the current research study, the total direct cost for the tuition and fees for each institution determines price. The figures are before any discounting, because the public sees the price before the discount is applied. Therefore, the total direct cost leads to the beginning of the creation of the perception of quality.

U.S. News and World Report College Ranking (USNWRCR): An online and print publication designed to help students locate the right college using statistics gathered by the College Board, *U.S. News and World Report,* and Peterson's Guide.

Research Questions

RQ_1. Does the price (tuition and fees) of Christian higher education affect the perception of the quality of those institutions, with quality perception represented by 20 dependent variables related to higher education?

RQ_2. How do tuition and fee increases correlate with the perception of schools as indicated in the USNWR rankings?

RQ_3. Do enrollment figures, including the number of first-time freshmen and full-time undergraduate students that serve as indicators of perceived quality, change with the trends in pricing?

RQ_4. Does analyzing the historical trends provide ways to predict how the variables will change as price increases?

The current study was conducted using archival data from IPEDS, USNWRCR, and CCCU. In the current study a single-cue study was used to analyze tuition trend's relationship to quality perception indicators as identified within the USNWRCR. Single-cue, while overstating the effect (McConnell, 1968b), is used to allow the researcher to focus on the tuition and fees variables alone.

Delimitations

The current study was delimited to CHE institutions that exist at the member level within the organization of the CCCU. The CCCU is defined as "an international association of intentionally Christ-centered colleges and universities" (About the CCCU, 2014). There are a total of 118 member campuses in North America. Universities from the member level list are matched to institutions within the South category of USNWRCR. Based on variations in buying habits, environmental factors, and cultural differences throughout various regions of the United States, the focus in the study was narrowed to the universities that match these criteria.

With a multitude of college sites available, the NCES database, IPEDS, was chosen to use for the data regarding tuition levels and first-time freshmen enrollment statistics. For data sets regarding the variables used in the study, the USNWRCR, a widely known ranking system from which to gather historical figures, was chosen, because it had a rich database covering the time frame for the current study. The current study used the period of 2005–2015 for analysis.

Assumptions and Limitations

Several marketing researchers have focused on product and the quality cues used by consumers (Boyle & Lathrop, 2009). The topic of how prospective students use price as a quality cue has been studied very little. One limitation is the possible lack of generalizability of the research to all institutions, or even to all Christian institutions. Markets differ across the country. How a market reacts in the Southeast may be different than markets in the Northeast or Southwest. In addition to generalizability, the current study used archival data sets. The limitations of secondary data meant that there would be some questions that could not be answered. Several advantages and limitations can be associated with using pre-existing data sources. Shultz, Hoffman, and Reiter-Palmon (2005) described the advantages and disadvantages (see Table 2).

Table 2

Advantages and Disadvantages with Using Pre-existing Data Sources

Potential advantages	Potential disadvantages
Resource savings	Appropriateness of data
Circumvent data collection woes	Completeness of documentation
A variety of research designs possible	Detecting errors/sources often difficult if not impossible
Usually SPSS or SAS ready	Overall quality of data
Relative ease of data transfer and storage	Stagnation of theory
Use as pilot data/exploratory study	Lure of dustbowl empiricism
Typically much larger and often national samples, as a result, can perform newer and more powerful statistics	Unique statistical skills required
Availability of longitudinal data	Illusion of quick and easy research
Availability of international/ cross-cultural data	Convincing editors or thesis/dissertation advisors you are not simply duplicating existing research
Organizations may be more open to using existing data versus collecting new data	Failure of students to develop skills required in planning and conducting data collection

Note. Adapted from data contained in "Table 1. Advantages and Disadvantages of Performing Secondary Analysis on Archival Data," in Shultz, Hoffman, and Reiter-Palmon (2005).

The research questions for the current study were answered using archival data provided from IPEDS and USNWRCR. The data were kept up-to-date by each educational institution and provided consistency and reliability, because the current study used schools from a specific geographic area and each was a Christian institution, the findings within the current study may not be generalizable across all markets.

Researcher's Perspective

Included in the research data is a Christian university where the researcher is a vice president of enrollment management. Since 2002, the researcher has seen an increase in tuition and fees of 247% but has also seen an increase in first-time freshmen enrollments of 17%. The researcher has also seen the university's USNWRCR move five spots in improvement. The USNWRCR list provides indicators that show how the public views the quality. Improvements in faculty member salaries, money for scholarships, alumni being willing to give back, and reducing class size comes from the revenue generated through increased tuition and increased enrollments, which would say that as tuition revenue and enrollment numbers increase so do the quality indicators for the institution. In the researcher's experiences, as an institution increases its price, if they are able to maintain or grow enrollments while holding the discount constant or lowering it, then they will have more funds to invest in quality. If the institutional leaders follow the recommendations, then the spiral can continue. If the institutional leaders do not invest in quality then, increasing the price will not provide the benefits indicated on USNWRCR or see increases in revenues and enrollments.

CHAPTER TWO: LITERATURE REVIEW

Introduction

The literature review is used to trace the theory of the PQ relationship through the economy, higher education, pricing trends, and marketing and consumer behavior. Scitovsky (1944) was the first to study the idea of the PQ relationship and was the first to recognize the role of price as a quality cue on which customers may rely. Bedeian (1971) introduced Scitovsky's story well when he wrote the following:

> In March of 1945, Tibor Scitovsky addressed the Marshall Society at Cambridge. His topic was product quality. In his opening comments he noted that conventional demand theory is based on the assumption that all consumers possess perfect knowledge concerning their consumption decisions. He noted that this implied that the consumer: (1) is an expert buyer, able to easily appraise product quality; (2) has a well-defined set of taste preferences; (3) is aware of all product purchase alternatives; and (4) is able to determine the appropriate marginal rate of substitution between different combinations of commodities to yield the highest possible level of utility. (p. 60)

When products flooded a market, customers lacked the knowledge to accurately judge their qualities. The one quality cue that remained was price. While other cues inform consumers of quality, when purchasing products, price continues to be one of primary emphasis (Boyle & Lathrop, 2009; Leavitt, 1954; Lichtenstein & Burton, 1989;

McConnell, 1968a; Rao & Monroe, 1989; Tull, Boring, & Gonsior, 1964; Zeitaml, 1988). McConnell (1988b) noted that researchers have yet to discover a universal PQ relationship, although it is accepted that price as a quality cue is used by some consumers in some purchasing decisions. Consumers using price to determine quality is not a new concept. Clark (1923), Edwards (1940), and Bedeian (1971) cited Mitchell (1912), who wrote, "Surely no one can be expected to possess expert knowledge of the qualities and prices of such varied wares. The ease with which defects of materials or workmanship can be concealed forces the purchaser to often judge quality by price." (p. 271)

Throughout the literature, price, primarily related to products, is suggested as a quality cue. Price and quality of higher education have been studied using data regarding faculty degrees, placement rates, and other institutional characteristics (Gilmore, 1990). Two ways exist that researchers have studied the PQ relationship: single-cue and multi-cue (Scitovsky, 1944). Single-cue uses only price, while multi-cue uses price plus other indicators of quality. It is logical that the single-cue studies show a significant relationship between price and quality perception, while the multi-cue studies show less significance. The review of the literature begins with the economy and higher education.

Economy and Higher Education

Kotler (1999) described how economic downturns affect the purchase decision for luxury items or items that are high priced. Without the availability of funds or fear of future income, people are less likely to make substantial purchases. The behavior holds true for higher education as well, especially the private sector. Private higher education is often considered a luxury item in the eyes of consumers. Van Der Werf and Sabatier

(2009) wrote that "More and more students are looking for lower-cost alternatives to attending college" (p. 3). During economic downturns, the purchasing power of students and their families decreases. In a study completed by Oppenheimer Funds, Inc., Glavin (2009) introduced the idea that while families still agree value exists in obtaining a college degree, they also believe that doing so is getting more and more unaffordable. The effect means that leaders of higher-priced institutions must investigate pricing strategies that help the value equation become more favorable for the purchase of their educational experience. Institutional leaders can measure their pricing strategy in a variety of ways. Niles (2010) illustrated the following options:

- Track your key performance metrics, such as the application funnels, aid recipients, and financial information of students, and measure them against past years.
- Validate that the institution's pricing strategies are in line with competitor's strategies.
- Ensure the admissions professionals are communicating the affordability and value proposition to the prospective students and their families.
- Create an environment where the offices of financial aid and admissions work together to strengthen the institution based on a common measurement like net tuition revenue.
- Use data to make decisions affecting the financial aid and admissions' strategies.
- Pay attention to where their students (freshmen, transfers, continuing education, graduate, etc.) are coming from and ensure that access is as barrier-free as possible.

While the strategies are important during a country's economic downturns, they do not indicate an understanding of curbing the ever-growing costs of attending many private institutions. The current issues that face many nonprofit college administrators in the United States regarding finance and economics are the most difficult in American higher education history (Bontrager, Brown, & Hossler, 2008). Such historical difficulties have resulted in the closure of institutions across the country. Gephardt and Smith's (2015) projection was that "closures and mergers among small U.S. colleges are poised to rise in the next few years amid continued revenue declines" and that "enrollment declines and lost market share for smaller colleges continue to spur closures and mergers" (p. 1).

Given the rise in cost for private higher education since the 1980s, how does the public view the college experience? Ikenberry and Hartle (1998) found that there were six primary conclusions:

1. Students and parents still think higher education is important. The thought is correct if they are concerned with job placement and earning potential when comparing college graduates with nongraduates.
2. While they agree that it is important, students and parents do not believe that attending college should cost as much as it does. Another aspect of this belief is that if costs were to be lowered, it would not affect their perception of quality. From the literature, the belief may be inaccurate, at least on the conscious level. On some level, price will enter the equation in determining overall quality as it does with all products.

3. Students and parents do not really understand how much it costs to attend an institution of higher education. For many institutions, a percentage of the costs to educate the student are covered through donations from alumni and friends of the institution.
4. There is a lack of understanding surrounding the process behind determining why tuition, fees, and room and board increase from year to year. The finding is another example of how the college process and environment are very complex and hard to understand for the general public. Often it can be confusing for those within the institution. Being able to explain the costs, and why they increase every year, can be difficult due to the many factors involved.
5. A general lack of knowledge exists surrounding the way higher education institutions discount their product. Consumers have become accustomed to the retail version of discounting, where they look for red signs that read "50% off, today only". The complicated financial aid application process sends many students and families into shock. Not only are they confused with the process, but also on what they qualify for and what paperwork may or may not be needed to gain access to the funds.
6. Consumers believe there is a large disconnect between the college administration and the reality of consumer needs. The belief is based primarily on the lack of presence that many college administrators demonstrate to the community. While the college president may be a public figure and leader, many of the other administrators are not as public. The lack of visibility affects the perceived willingness to communicate and understand the effects of costs on families.

The 2008 economic recession made worsened a situation that was already reaching a limit. It slowed down many higher education institutions' tuition increases to be more manageable for students and parents. Even with a "slow down," the increased cost outpaced inflation and a family's ability to pay (Reed & Cochrane, 2014).

Pricing in Higher Education

The issue of pricing and quality in higher education has been and continues to be a debated topic in the media. The topic of tuition and its historical changes will be considered first. Beginning in the 1980s, the costs for tuition and fees at institutions of higher education rose 440%, which represented a rate at four times that of inflation (Christensen & Erying, 2011; Martin, 2002). A dramatic increase has occurred in tuition and fees that began primarily in the 1980s and continue currently. The increases can be attributed to many combinations of factors that can be school specific, but can also be an issue of wanting to increase prestige. The increase in private, nonprofit institutions indicates a sharper increase than that of public colleges and universities (see Figure 1).

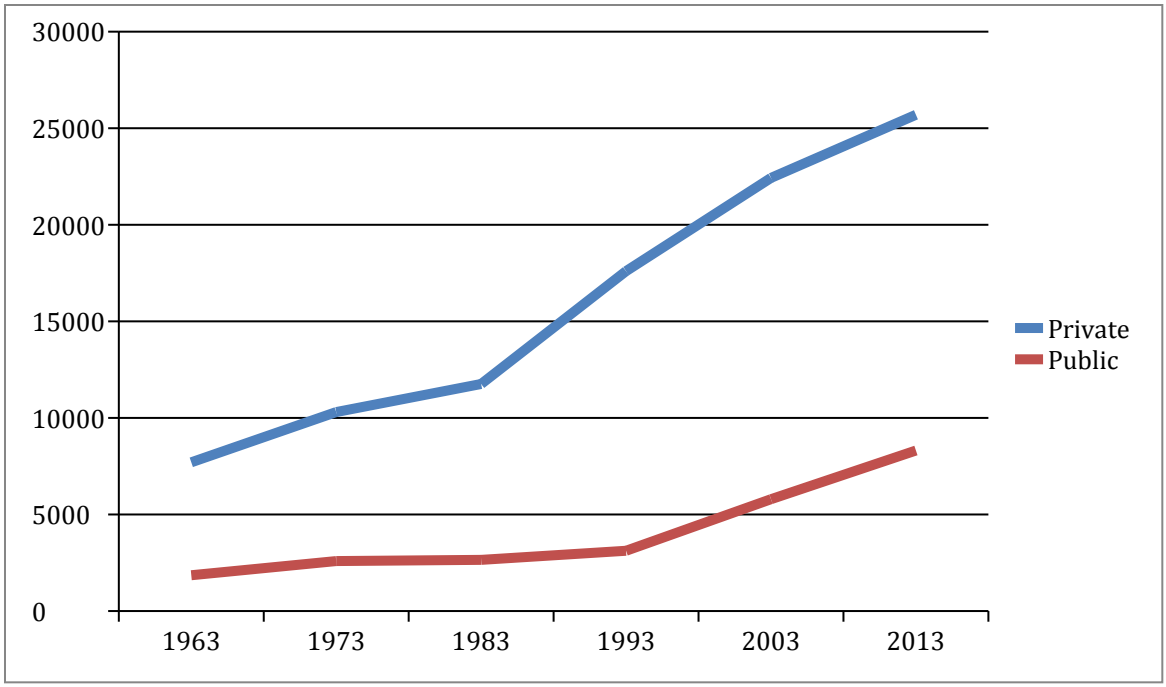

Figure 1. Increases in fees and tuition in public and private colleges and universities
Note: Adapted from data contained in Table 330.10. Average undergraduate tuition and fees and room and board rates charged for full-time students in degree-granting institutions, by type and control of institution: 1963-64 through 2013-14, by National Center for Education Statistics, U.S. Department of Education Institute of Education Sciences, Digest of Education Statistics.

Authors and journalists have noticed the increase and have drawn attention to it. Kamenetz (2010) discussed the increases in her book, *DIY U: Edupunks, Edupreneurs, and the Coming Transformation of Higher Education*. The research by Kamenetz (2010) was used to validate the data in Figure 1. Kamenetz (201) wrote:

> In the 1940s and 1950s, according to *The Race between Education and Technology,* college tuition rose more slowly than household income, and in the 1950s through 1980, they rose at about the same rate. Since 1980, tuition at both private and public colleges has soared relative to both inflation and family income. (p. 50)

College tuition and fees increased 439% from 1982 to 2007, after inflation (Kamenetz, 2010). Many experts believe the increases cannot be sustained (Christensen & Erying, 2011). Students have more and more debt upon graduation and are entering a job market that is less than favorable based on recent economic recessions. They have to take out larger amounts of debt to get their degrees, and they have a harder time getting a job, or they are paid less for a job requiring their degree. Debt levels are rising, but not at the rate that members of the media present it. "State averages of debt at graduation ranged widely in 2014, from $18,900 to $33,800, and new graduates' likelihood of having debt ranged from 46% to 76 % (Cochrane & Reed, 2015, p. 2). Additionally, Cochrane and Reed (2015) stated that debt levels would have increased more over the last 10 years if grant aid not increased to compensate. Regardless, the increased costs on families have "outpaced their ability to pay" (Cochrane & Reed, 2015, p. 2).

From 1980 to 2000, institutional revenue from tuition and fees rose 117% (Finney & Kelly, 2004). The amount of revenue an institution gains from the tuition and fees is lessened by the implementation of discounting (financial aid), and students participating in credit-earning activities before college (advanced placement, international baccalaureate, dual enrollment, and other programs). While the advertised tuition and fee amounts increased 439% (Kamenetz, 2010), the realized revenue was represented by a 117% increase (Christensen & Erying, 2011).

Why do tuition prices continue to increase at a pace that far surpasses inflation and family income? One primary reason is competition (Brickley, Smith, & Zimmerman, 2004). Newman (2002) noted, "As competition among higher education institutions for students and resources intensifies, admissions and enrollment management administrators

continue to view marketing techniques and strategies as valuable resources" (p. 16). Marketing techniques require an investment to execute. Additionally, Newman (2002) wrote that many college administrators view building a brand as a crucial aspect of the recruiting process. Gaining insight into the brand, developing the brand, and spreading the brand is a costly endeavor. Other reasons for the costs could include technological needs, development of the institution, and other strategic plans for the institution. One of a marketer's primary objectives is to increase a product's competitive advantage (Kotler, 1999).

No difference exists within higher education. Enrollment or admissions marketing is a strong force on many college campuses across the country. Scannell (1992) wrote that the marketing efforts are basically used to gain the attention of high-achieving students and to use pricing and discounting strategies to maximize the institution's effectiveness of getting students to choose their institution. College and university leaders are becoming more and more sophisticated in their marketing efforts (Scannell, 1992). Name purchases from ACT and/or SAT, among other providers, supply college and university administrators with lists of students who meet certain qualifying criteria, as defined by the institution (Scannell, 1992). Other list purchases can be made based on family income. Some institutional leaders are beginning to turn away students who cannot afford their tuition after the institutional leaders have provided their discounts (Lauer, 2002). For these institutional leaders, locating students who are affluent enough to afford their tuition will not get any easier, based on the most recent economic turbulence (Niles, 2010).

PQ Relationship

One of the most famous axioms regarding product quality and price has been "You get what you pay for." The statement, which may or may not be true, can serve as a tagline for the PQ relationship. Vanhouche and Van Osselaer (2009) stated, "Consumers tend to hold naïve beliefs regarding relationships between a product's attributes and its benefits…. For example, many consumers believe that price and quality have a strong positive relationship" (p. 317). The PQ relationship is the term utilized to explain how consumers "believe price is an indicator of quality" (Boyle & Lathrop, 2009, p. 58). The actual price a consumer sees immediately begins a process within his or her mind that creates a belief about the product based on the price (Clark, Bush, & Martin, 2003). Gabor and Granger (1966) brought the relationship between price and quality to the forefront, as they tried to explain why the PQ relationship should not simply be dismissed and ignored.

The PQ relationship for a service or product is a theory that continues to interest consumers and producers. The theory that as price increases, so does the perception of the quality of the service or product, has been studied and determined to be true in numerous occasions (Carlson, Huppertz, & Neidermeyer, 2008; Rao & Monroe, 1989). The relationship functions both ways. As price falls, the perceived quality decreases (Berns, 2005). For example, the automobile industry shows a good example of how price and quality relate for a specific product. Having specific examples like the automobile industry helps depict how perceived quality increases with price. Does the general public truly know that a 2015 Mercedes E250 base model, priced at $52,650, is made of better materials than a 2015 Lexus ES 350 base model, priced at $37,700? The nearly $15,000

difference would suggest a difference in quality to the consumer without any additional information.

Other inputs to the consumer purchase decision are perceptions of status, prestige, and value, which would also be considered a consumer's utility for the product. Generally speaking, the more utility a consumer finds in a product, the greater the likelihood of purchase. Utility is defined as the experience and/or benefit a consumer sees in a product. When consumers choose to purchase luxury vehicles, they may be purchasing because of the perceived utility. In this situation, it could be more about the experience and prestige of owning the vehicle compared to purchasing a less expensive, less glamorous vehicle. "Consumers are more informed and sophisticated in their buying habits," and "people are being trained into price consciousness" (Kotler, 2004, p. 8). Price is one of the influencers to a consumer's purchasing decision. Price is also one of the components of the traditional marketing mix and has been one of the focal points of marketing professionals as they seek to influence purchasing decisions. Rao and Monroe (1989) showed how price influences the perception of prestige and quality, increasing the utility and likelihood of purchase.

Perceived quality is not always an accurate assessment of a product's actual quality. Regardless, consumers regularly use perceived quality in purchasing decisions. The perceived quality of a product or service differs from objective quality in that objective quality is the measured quality through research, and perceived quality is observed through other avenues (Lichtenstein & Burton, 1989). Perceived quality is similar to objective quality, because determination of objective quality may not even be possible. Objective quality requires that a person place value on certain quality measures

and to determine what those quality measures should be (Zeithaml, 1988). Even though the term "objective" is used to suggest an unbiased measurement, biases are present. Regardless of the biases, separate studies conducted by Geistfeld (1982), Gerstner (1985), Morris and Bronson (1969), Oxenfeldt (1950), and Rieze (1978, 1979), have shown a consistent positive correlation between objective quality and price, similar to perceived quality (Lichtenstein & Burton, 1989). With objective quality and perceived quality both shown to be poor indicators of actual quality, it leaves little wonder why consumers depend on price so heavily. Zeithaml (1988) defined perceived quality as follows:

1. Different from objective or actual quality,
2. A higher-level abstraction rather than a specific attribute of a product,
3. A global assessment that in some cases resembles attitude, and
4. A judgment usually made within a consumer's evoked set. (pp. 3-4)

Some studies show that the consumer's perceptions are not well calibrated. The quality of the product may not be as high as the consumer determines it is based on price. Consumers use price, because there are fewer indicators/predictors of quality levels (Boyle & Lathrop, 2008; Lamb, Hair, & McDaniel, 2012). In evaluating the research, Boyle and Lathrop (2008) indicated, "that price is not a good predictor of overall product quality" (p. 58). Additionally, Kotler (1999) stated that incremental price often surpasses the actual increase in quality. If true, why do consumers use price to make quality decisions, and why do consumers continue to practice this process?

If consumers perceive the utility of a product to be low, then price will drop to meet it. If price were already lower than its competitor set, then the perceived utility would need to be higher to create a positive value. Charging less often "cheapens the

customer's view of the product. Indeed, those who sell for less probably know what their stuff is worth" (Kotler, 2004, p. 138). The PQ relationship indicates that consumers use price to influence their perceived value, which is why it becomes important for company leaders to be aware of their products or services and how they are positioned in the market. Varki and Colgate (2001) stated, "Customer value is defined by Zeithaml (1988) as a 'customer's overall assessment of the utility of a product based on perceptions of what is received and what is given,' and implicit in her definition is the notion of a consumer trade-off between a 'get' and a 'give' component" (p. 232). Washburn and Wallace (1999) used the following a slightly modified equation:

VALUE (V) = APPEAL (A) / INVESTMENT (I), or V = A / I

The equation shows the importance of appeal, or the perception of benefit (A), and the investment made that is the experience while considering price (I). The point at which there is no issue with price for the consumer is when the perception of benefit (appeal) and experience with the investment is balanced with the cost incurred (Lauer, 2002). Ariely (2009) expanded on the idea of how price determines our perception of quality. Ariely (2009) discussed the phenomenon of the placebo effect of pharmaceuticals. When people believe a drug is better for them because the price is higher, and they report feeling better from the more expensive drug, there is a PQ relationship. The PQ relationship exists so strongly that people are convinced it provides better utility (Ariely, 2009). In higher education, customers believe the quality of the institution is better when the price is higher, before grant aid (Winston, 1999). The price of the college will position it with a competition group that "signifies its 'excellence" (Winston, 1999, p. 27). White (2013) reemphasized Winston's (1999) findings, when his

research indicated that students used cost, aid, and reputation to create their perceived quality and value levels. Over the 14-year span of time between the two studies, students still allowed cost to form their perception on an institution's quality.

Positioning is involved in the purchase decision, because it helps establish a value for the product or service. Company executives use positioning to help establish what pricing strategies they will implement to aid in the purchase of their service or product. Pricing strategies are used to set "a competitive price in a specific market segment, based on well-defined positioning" (Lamb, Hair, & McDaniel, 2003, p. 518). The PQ relationship has significant, although unreliable, effects on the purchasing decisions of consumers. Understanding the basis for these decisions requires knowledge of how these perceptions are formed by the consumer. Once that understanding is obtained, marketers use the information to provide their companies with value propositions and pricing strategies that will make a difference in the purchase decision.

Consumers' Psychological Purchasing Behaviors

Consumers use price to determine quality, and this is indicative of a psychological behavior (Rao, 2005). Consumers often believe the PQ relationship holds true across all products and brands regardless of the industry. For some higher-priced products, the hedonistic affect experienced by the consumer causes a feeling of "pleasure and excitement associated with consuming higher-priced products" (Lamb et al., 2003, p. 316). The feeling is used to provide utility to the consumer, because it increases the excitement for the purchaser. Another psychological influencer on the use of price by the consumer to make quality decisions is that consumers want to make choices quickly and

efficiently. Consumers may not have the time required to research before each purchase; therefore, they use price because it is "cognitively efficient" (Rao, 2005, p. 401). In modern society, many people do not have the time to do the activities they would like to pursue. A consumer's time is often too constrained to spend it researching products and comparing them based on their objective attributes. For consumers, price often becomes the indicator by which they assign a value for a product (Zeithaml, 1988).

Understanding how people make decisions also requires examining the social influences they may have experienced in their lives. Asking questions such as, "What does their background look like", and "what cultural implications could there be that could affect the way they perceive quality?" "In the prevailing Japanese philosophy, quality means 'zero defects—doing it right the first time'" (Zeithaml, 1988, p. 4), which is important to comprehend, because past experiences and upbringing influence many consumer decisions.

The producers of the products and their marketing divisions should understand that price is just as significant for the perception of the product as any of the utility derived (McConnell, 1968a). Marketing professionals know consumers use the PQ relationship, and the professionals use advertising and other strategies to ensure consumers continue to do so, which is important for all products and services. If the product is the price leader, then marketers would want their product to be seen as the highest quality, and they will tailor their marketing messages and branding to reflect a high-quality product. This is called a "more for more" position (Kotler, 1999, p. 59). Lauer (2002), in writing about higher education, stated:

> Product is what consumers perceive it to be, and its price category is based on what your price has been. Repositioning to a more prestigious category in the consumer mind requires gradual price increases, specific improvements in products, aggressive communication, and enough time for consumers to redefine the way they see you. (p. 25)

For the marketing professional, one of the most important strategies is not to be somewhere in the middle. If the product is priced in the middle, your strategy is saying, "We're not the best, and neither is our price, but both our service and price are pretty good" (Beckwith, 1997, p. 134). The psychological expectations of the consumer can be influenced through marketing and promotion, because it is perceived value (Lauer, 2002). Marketers must also be aware that, "Lowering a price using a discount offer not only lowers the cost to the consumer, but also threatens to lower perceptions of product quality through negative PQ inferences relating to the lower selling price" (Darke & Chung, 2005, p. 36).

Marketing and the PQ Relationship

Marketing professionals who think being logical in their pricing strategy is smart could be doing more harm than good. If they set the price to promote a good value for the price, they could be setting up the product to experience a decrease in quality perception (Beckwith, 1997). The value equation is not an equation that is calculated on paper or on a computer. It is "a mental calculation where the appeal of your offerings (some tangible, some emotional) is weighed against the investment needed to acquire them" (Washburn & Wallace, 1999, p. 171). The decisions that are based on price are

often done in a short amount of time. Branding—the look and feel of the product—becomes important as well. Zyman (1999) explained the job of the marketer in a very clear way when he wrote, "Even if your product isn't that different, better, or special, it's the job of the marketer to make people *think* that it's different, better and special" (p. 104). The emphasis he placed on the word "think" was important. Zyman's (1999) opinion would indicate the decision is not necessarily based on the fact the product is better but that the perception of the consumer says it is. Zyman's (1999) opinion also indicated that the process is more of a psychological behavior based somewhat on the images and branding of products and services.

If a producer wishes to move a product to a more prestigious level, following a few guidelines navigates the transition to avoid losing customers. Lauer (2002) believed company leaders should use the following guidelines for creating a pricing strategy:

1. Increasing the price too quickly could drive customers away.
2. While increasing the price, increasing attributes of the product is necessary.
3. Communication and marketing to the customer should be intense.
4. The producer should have patience and allow the customers to change their view of the product as its increases in quality and price are implemented.

These are good examples of how the process should be handled if it is undertaken. However, even if all of these guidelines are followed, events outside the marketer's control could affect the purchase decision. Higher-priced products and services are often vulnerable to consumer behavior changes due to economic conditions (Kotler, 1999). It is up to the marketers to find additional affluent markets to purchase the products during these times.

To summarize, it is important for marketers to understand the PQ relationship and how it affects the purchasing behavior of consumers. Other industry examples exist showing where this is important. When evaluating hotels, price certainly enters the decision process. Higher-priced hotels are thought to provide a higher-quality service to its visitors (Lee, 2013). In the sections that follow, the PQ relationship and how it applies to higher education is taken into consideration.

PQ Relationship in Higher Education

Pricing in higher education is no different than other pricing in products. In her study, Pasternak (2005) stated:

> Higher education is marketed like any other good. The decision to acquire advanced knowledge is, therefore, the culmination of a process of weighing *costs* against *benefits*, similar to the process applied when selecting other goods. These factors influence the reasons why students choose to attend a particular institution of higher education, just as they affect their expectations regarding the outcomes of their studies. (p. 189)

With the value equation mentioned earlier in mind, it is surprising little research exists to answer the question regarding price's affect on the quality/prestige perception on higher education institutions among prospective students and their families. It is important to note that even though college leaders are marketing, sometimes heavily, "marketing has not been well understood by professionals at private Christian colleges" (Vander Schee, 2009, p. 26). With the lack of understanding of marketing and the importance of marketing in the recruitment process in mind, more research and training is

needed to increase the knowledge base among professionals in higher education. Since Gilmore's (1990) study, a substantial change in higher education from internal and external forces has occurred. Additional research could be used to help fill a void in the research. For institutional leaders wishing to position themselves with their actual competition, or with schools with which they would like to be compared, the PQ relationship aspect of pricing strategies becomes increasingly important, because, as Pasternak (2005) wrote, "Private institutions of higher education find themselves in a state of relentless competition" (p. 191). Institutional marketers can use price to position themselves with other institutions that may be of much higher quality than what they currently are. The task can be dangerous, because many of the institutional leaders did not make efforts to improve the quality of the offerings. Gilmore (1990) stated:

> Higher priced institutions have a better reputation than lower priced institutions. This may indicate that students and their parents perceive higher costs institutions as having better quality or as delivering a greater personal return (or value, however families may define it) for their college tuition dollar and time investment. (p. 49)

Gilmore's (1990) method for determining reputation was to use the application rates of the institutions studied. Gilmore (1990) also found that the quality of the students attending higher priced institutions was at a higher level and because of this and other factors, some publications create lists based on calculations and surveys. *U.S. News & World Report* publishers produce lists annually that gain the attention of students and the institutional leaders listed within the publication. One of the lists, "Great Schools, Great Prices," is used to show a correlation between cost and quality beyond perception

based solely on price. The article authors tried to illustrate to the public that there are great schools out there and the cheaper they are, the better the deal (Great schools, great prices, 2004). Although the list uses ranking, costs, scholarship and grants given, and other factors to create the document, it is also based on perception.

Determining quality of higher education is hard for the same reason measuring a product's quality is difficult (Boyle & Lanthrop, 2009). The way one person would define and place values on multiple aspects of higher education is different than the way another person would define or place value. Individuality creates a biased system of measuring the effect of institutional characteristics on the quality of that institution. One aspect often missing is the current efforts of the leaders of a specific institution to increase the quality of the academic and experience they offer (Lauer, 2002).

Many challenges exist that face administrators of higher education pertaining to price and quality. First, quality is a nearly impossible aspect of any product or service to measure without bias. Even some of the most trusted publications used to measure product quality are skewed at some point by what aspects are determined to measure quality and what weights are placed on those aspects. The reality is the same for leaders in higher education, where aspects such as class size, retention rates, graduation rates, peer ratings, alumni giving percentages, full-time faculty, average test score, grade point averages, and other characteristics are used to measure quality. For students and parents, understanding all of the characteristics, how they are measured, what they indicate, and why it could be different depending on the institution is daunting. When information regarding products or services is absent or too confusing to be understood easily, a common factor exists that consumers use to judge quality. Price becomes one of the

primary indicators of quality regardless of the studies that have indicated indicate it is not an accurate measurement technique (Boyle & Lathrop, 2009). The decision process can be negative for the higher-priced institutions, because a consumer often becomes increasingly price elastic during economic turbulence. Price elasticity means that a consumer is more likely to choose a competitor's product or service if the price increases (Brickley et al., 2004).

Summary

With the knowledge of the effect that the PQ relationship has on the purchase of products/services, it seems only rational to examine how CHE is also affected. The PQ relationship theory has been studied in the marketing field but not for CHE. Simply explained, the higher the cost of the product, the higher the perceived quality. Consumers use price to predict quality and make purchasing decisions based on it even though it is not a reliable predictor of quality. While much has been done to research the PQ relationship, little has been done regarding the PQ relationship and its effects on higher education, and even less on CHE.

CHAPTER THREE: METHODOLOGY

Research Design and Rationale

The chapter is used to describe the methodology involved in testing the research problems. First, the participants were identified, then the research variables were identified and validated. Second, the procedure for data collection from the archival databases was interpreted. Third, a discussion regarding the statistical tests was presented. The current research was conducted using a quantitative analysis of archival databases that are updated yearly.

The current study was used to examine the relationship between the trends in pricing and the perceived quality of CHE institutions. More specifically, the current study was used to examine eight CCCU schools ranked in the Regional Universities South category of USNWRCR, shown in Table 3 with their geographic location included. The method of sampling involved schools of similar Carnegie categorical meanings in 2015.

Table 3

Eight CCCU Schools Represented in the Data Source

School	Location	Overall USNWRCR Rank
Belhaven University	Jackson, MS	58
Campbellsville University	Campbellsville, KY	84
King University	Bristol, TN	71
Lee University	Cleveland, TN	46
Lipscomb University	Nashville, TN	18
Mississippi College	Clinton, MS	32
Palm Beach Atlantic University	West Palm Beach, FL	46
Union University	Jackson, TN	14

Archival data for the current study was made available to the public by the Integrated Postsecondary Education Data System (IPEDS) data collection system, *U.S. News and World Report* College Rankings (USNWRCR), and the Council for Christian Colleges and Universities (CCCU) member list. IPEDS is the data collection system for the National Center for Education Statistics (NCES). The data can be accessed at http://nces.ed.gov/ipeds. IPEDS contains data from more than 6,500 higher education institutions that receive student aid funding through the Title IV program. Higher education institutions, as defined by NCES, provide postsecondary education as its sole purpose or primary mission (Knapp et al., 2011). The IPEDS data were used to establish historical tuition levels and first-time freshmen enrollments; the USNWRCR data provided quality measures that are indicators of perceived quality, as well as a list of ranked schools; and the CCCU member list provided a list of institutions for the current study.

In the next section of the methodologies for the current study, the data collection and the weights given to the data for the USNWRCR are examined to establish trustworthiness for the archival data used. The collection of the data began with the assignment of the colleges and universities into their respective categories. USNWRCR uses the Carnegie Foundation for the Advancement of Teaching's Basic Classification to categorize the schools as regional colleges or universities or as national universities. The Carnegie Foundation for the Advancement of Teaching's Basic Classification was first created for research in 1970. Since then it has gone through seven updates, with the last in 2010.

Measures

The ranking system for USNWRCR involves a yearly common data set survey completed by administrators in each college. The common data set has three publishers: (1) the College Board, (2) Peterson's, and (3) *U.S. News & World Report.* The information from the form is taken and weighted to form the overall ranking. If the information provided calculates to the same rank, then more than one school may have the same rank. For the current study, Lee and Palm Beach Atlantic Universities had the same rank of 46. USNWRCR representatives do not make the assertion that the data provide the complete picture, but rather a starting point with indicator that helps the perception of quality level. According to Morse and Flanigan (2012):

> The rankings allow you to compare at a glance the relative quality of institutions based on such widely accepted indicators of excellence as freshman retention, graduation rates, and the strength of the faculty. … Many factors other than those

spotlighted in the rankings will figure in your decision, including location and the feel of campus life; the range of academic offerings, activities, and sports; and cost and the availability of financial aid. (p. 1)

The data is given weights according to the methodology shown in Table 4, which also provides a visual representation of the variables used in the current study.

Table 4

Variables used in the present study

Ranking Category	Category Weight		Subfactor	Subfactor Weight	
	National Universities and National Liberal Arts Colleges	Regional Universities and Regional Colleges		National Universities and National Liberal Arts Colleges	Regional Universities and Regional Colleges
Undergraduate academic reputation	22.5%	25%	Peer assessment survey	66.7%	100%
			High school counselors' ratings	33.3%	0%
Student selectivity for fall 2011 entering class	15%	15%	Acceptance rate	10%	10%
			High school class standing in top 10%	40%	0%
			High school class standing in top 25%	0%	40%
			Critical Reading and Math portions of the SAT and the composite ACT scores	50%	50%
Faculty resources for 2011-2012 academic year	20%	20%	Faculty compensation	35%	35%
			Percent faculty with top terminal degree in their field	15%	15%
			Percent faculty that is full time	5%	5%
			Student/faculty ratio	5%	5%
			Class size, 1-19 students	30%	30%
			Class size, 50+ students	10%	10%
Graduation and retention rates	20%	25%	Average graduation rate	80%	80%
			Average freshman retention rate	20%	20%
Financial resources	10%	10%	Financial resources per student	100%	100%
Alumni giving	5%	5%	Average alumni giving rate	100%	100%
Graduation rate performance	7.5%	0%	Graduation rate performance	100%	0%
Total	100%	100%	—	100%	100%

Note. Adapted from data contained in Methodology: Undergraduate Ranking Criteria and Weights," by R. Morse, *U.S. News and World Report,* 2012.

Beyond the overall ranking for each college, other dependent variables included:

1. % of classes with 50+ students
2. % of classes with under 20 students
3. % of full-time faculty
4. % of incoming class in top 25%
5. % of faculty with terminal degrees
6. 6-year graduation rate
7. acceptance rate
8. average ACT of entering class
9. % of alumni giving
10. $ amount of average financial aid
11. freshmen retention rate
12. faculty compensation rank
13. peer score
14. student- to-faculty ratio
15. overall USNWR rank
16. change in overall USNWR rank.
17. first-time freshmen (FTF)
18. change in FTF
19. full-time enrollment
20. change in full-time enrollment

Independent variables were (a) tuition and fees combined, and (b) % change in full-time enrollment. Additionally, Figure 2 shows the differences in weighting for

regional university and college rankings and the national university rankings. It was assumed that guidance counselors are much more informed about the national level institutions, while peer assessment was best for regional university and college rankings. Ten years' worth of data (2005–2015) was collected from USNWRCR and the IPEDS database for research.

Procedure of Data Collection

Approval from the Institutional Review Board (IRB) of George Fox University was not necessarily given the use of archival information. The 20 dependent variables for each of the 8 colleges were retrieved directly from *U.S. News and World Report.* A .csv file was provided covering a period of 10 years, 2005–2015. The procedure was used to eliminate any human error from inputting the data from hard copy versions of the data. For the tuition and fees independent variable, each college was explored in IPEDS, and each price was recorded in an Excel® spreadsheet that was later copied to SPSS®.

Data Analysis

The purpose of the current study was to begin exploring the relationship between trends in pricing (tuition and fees) and the perception of quality for CHE. The current study will be used to add to the body of knowledge regarding the relationship between price and quality perception, as well as provide a way to evaluate the way price correlates with quality perception indicators in CHE. A quantitative exploration was employed using the archival data in USNWRCR (for ranking factors) and IPEDS (for tuition levels) for eight institutions. The analysis began with running descriptive statistics on the

variables to provide a better understanding of the variables. The analysis continued with a correlation study to measure the strength of the linear relationships between the independent variable (tuition and fees) and each of the 20 dependent variables. A correlation test examined the relationships between the variables. Additionally, the correlation also showed the differences in the variables' relationship strength to the independent variable.

Archival data was utilized; therefore, historical trends were evaluated using multiple linear regressions, removing variables showing multicollinearity, to see predictability possibilities. The historical trends provided valuable information to researchers and practitioners, who can use the information in decision-making efforts. The *r* coefficient value strengths, through the Pearson Correlation tests, are shown in Table 5, as represented in work from Zou, Tuncali, and Silverman (2003).

Table 5

CCCU Study Schools Statistic Ranges

Correlation Coefficient Value	Direction and Strength of Correlation
-1.0	Perfectly negative
-0.8	Strongly negative
-0.5	Moderately negative
-0.2	Weakly negative
0.0	No association
+0.2	Weakly positive
+0.5	Moderately positive
+0.8	Strongly positive
+1.0	Perfectly positive

Note: The sign of the correlation coefficient (i.e., positive or negative) defines the direction of the relationship. The absolute value indicates the strength of the correlation. Adapted from a table contained in "Correlation and Simple Regression," by K. H. Zou, K. Tuncali, and S. G. Silverman, Radiology, 2003.

In addition to the direction and strength of the correlations, the effect size of the Pearson correlation (r^2) is explained by Cohen (1988) as small ($r^2 = 0.10$), medium ($r^2 = 0.30$), and large ($r^2 = 0.50$). A small effect size suggests that it is happening in the world but it would take careful study to see it. By contrast, a large effect size was used to suggest that it is obvious and can easily be seen by the naked eye.

CHAPTER FOUR: RESULTS

Introduction

The current study was used to examine the effects of changing pricing levels within CHE in an attempt to answer the research questions:

RQ_1. Does the price (tuition and fees) of Christian higher education affect the perception of the quality of those institutions, with quality perception represented by 20 dependent variables related to higher education?

RQ_2. How do tuition and fee increases correlate with the perception of schools as indicated in the USNWR rankings?

RQ_3. Do enrollment figures, including the number of first-time freshmen and full-time undergraduate students that serve as indicators of perceived quality, change with the trends in pricing?

RQ_4. Does analyzing the historical trends provide ways to predict how the variables will change as price increases?

Chapter Four is organized around the four research questions. First, findings are reported in terms of pricing's effect on the quality perception of eight institutions. For the current study, findings were considered significant at $p < .05$.

The study included eight CCCU schools ranked in the Regional Universities South category of USNWRCR, shown in Table 3 with their geographic location. The method of sampling was done to have schools of similar Carnegie categorical meanings and similar missional approaches to higher education. Ten years' worth of data from

2005–2015 were collected from USNWRCR and the IPEDS database for research. Table 4 shows a summary of the variables (dependent and independent) used in the current study. Table 5 shows a summary of the institutions ranges in the study. Table 6 includes additional ranges of the variables needed to conduct specific analytic tests.

Table 6

Eight CCCU Member Schools with Variables and Variable Ranges

Schools from 2005–2015	Variables	Variable Ranges
Belhaven University	% of classes with 50+ students	0-8.8
Campbellsville University	% of classes with under 20 students	45.8-81.2%
King University	% of full-time faculty	49.6-99.59%
Lee University	% of incoming class in top 25%	26-67%
Lipscomb University	% of faculty with terminal degrees	52.3-89.7%
Mississippi College	6 year graduation rate	36.8-65.8%
Palm Beach Atlantic University	Acceptance rate	44.1-95.87%
Union University	Average ACT of entering class	21-26
	% of alumni giving	4-31.3%
	$ amount of average financial aid	$7,157-$21,921
	Freshmen retention rate	62.75-91.75%
	Faculty compensation rank	15-214
	Peer score	1.8-3.4
	Student to faculty ratio	9:1 – 21:1
	Tuition and fees combined	$9,710-$29,190
	% change in tuition and fees	1.68-11.77%
	Overall US News ranking	11-177
	Change in overall US News rank	-157-46
	First-time freshmen (FTF)	98-875
	Change in FTF	-226-189
	Full-time undergraduate enrollment	583-3834
	Change in full-time undergraduate enrollment	-973-360

Note: Eight CCCU member schools that are ranked in the Regional Universities South category of US News and World Report College Rankings listed with variables used in the study.

Using the variables, basic descriptive statistics are presented for each in Tables 7–11. The tables were used to establish an understanding of the variables and how they were used to inform the current study, while Table 5 shows the scale scores from each

variable. The variables and their descriptive statistics are broken out to categories to provide clarity to the results. The categories included:

- Financial variables
    - $ amount of average financial aid
    - Tuition and fees combined
    - % change in tuition and fees
- Enrollment variables
    - 6-year graduation rate
    - Acceptance rate
    - Freshmen retention rate
    - First-time freshmen (FTF)
    - Change in FTF
    - Full-time enrollment
    - Change in full-time enrollment
- Faculty variables
    - % of full-time faculty
    - % of faculty with terminal degrees
    - Faculty compensation rank
    - Student to faculty ratio
- Student variables
    - % of classes with 50+ students
    - % of classes with under 20 students

    - Average ACT of entering class
    - % of incoming class in top 25%
    - % of alumni giving
- Ranking variables
    - Peer score
    - Overall USNWR ranking
    - Change in overall USNWR ranking

The variables in Table 7 show the financial information for the institutions that were included in the current study. The information shows the pricing and discounting associated with the attendance at the institutions. The mean tuition and fees combined for the years studied was just over $19,000, with a mean discount of just over $14,500.

Table 7

Decriptive Statistics for Financial Variables

	N	Minimum	Maximum	Mean	Std. Deviation
$ amount of average financial aid	88	$7,157	$21,921	$14,663.61	$3,412.04
Tuition and fees combined	88	$9,710	$29,190	$19,141.86	$4,966.81
% change in tuition and fees	88	1.68	11.77	4.9194	1.91802

The variables in Table 8 show the enrollment information contained within the study. The variables include enrollment counts, changes over time, graduation rates, retention rates, and acceptance rates into the institutions. Within the institutions wide ranges of graduation rates, acceptance rates, retention rates, and enrollment figures existed.

Table 8

Descriptive Statistics for Enrollment Variables

	N	Minimum	Maximum	Mean	Std. Deviation
6 year graduation rate	88	36.8	65.8	51.09	7.87
Acceptance rate	88	44.10	95.87	68.56	13.49
Freshmen retention rate	88	62.75	91.75	72.20	6.20
First-time freshmen (FTF)	88	98	875	460.94	192.40
Change in FTF	88	-226	189	12.3068	57.87648
Full-time enrollment	88	583	3834	2146.24	681.75
Change in full-time enrollment	88	-973	360	50.01	145.502

The variables in Table 9 show the information related to the faculty members at the institutions. Full-time data, terminal degrees, the institutions' rank for compensation of faculty, and the institutions' attention to class ratios were included. The data shows a wide variety throughout the variables for each measure.

Table 9

Descriptive Statistics for Faculty Variables

	N	Minimum	Maximum	Mean	Std. Deviation
% of full-time faculty	88	49.60	99.59	72.13	10.75
% of faculty with terminal degrees	88	52.3	89.7	75.31	7.90
Faculty compensation rank	88	15	214	74.13	40.15
Student to faculty ratio	88	9	21	13.95	2.43

The student variables in Table 10 are ones that informed the study regarding measures specific to describing the students at the institutions, and included data from

entering the institution (% of incoming class in top 25%), to after they have graduated (% of alumni giving).

Table 10

Descriptive Statistics for Student Variables

	N	Minimum	Maximum	Mean	Std. Deviation
% of classes with 50+ students	88	.0	8.8	2.20	2.48
% of classes with under 20 students	88	45.8	81.2	62.39	9.26
% of incoming class in top 25%	88	26	67	48.22	9.19
Average ACT of entering class	88	21	26	23.25	1.36
% of alumni giving	88	4	31.3	12.14	5.51

The ranking variables in Table 11 relate to the information directly from USNWRCR and include peer score, overall USNWR ranking, and the change in the institutions' overall USNWR rank. Wide ranges existed in the USNWR ranking variable and the magnitude of the changes over time, from –157 to 46.

Table 11

Descriptive Statistics for Ranking Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Peer score	88	1.8	3.4	2.75	.27
Overall U.S. News ranking	88	11	177	46.03	32.44
Change in overall U.S. News rank	88	-157	46	-.8864	20.83897

Prices' Effect on Quality Perception

The first research question was designed to address the issue of whether the listed price of a college, represented by tuition and fees reported in IPEDS, has an effect on the quality perception of its consumers. Quality perception is represented by the publically available indicators within the USNWRCR, as conducted by Gilmore (1990), who used NCES and Barron's Profile of American Colleges, and Astin (1970), who used public consumer price and student outcomes data. The variables showed rankings, faculty training and compensation levels, financial aid indicators, student success indicators, alumni support, and enrollment figures. To answer the first research question, "Does the price (tuition and fees) of Christian higher education affect the perception of the quality of those institutions, with quality perception represented by 20 dependent variables related to higher education?" analyses were performed to explore existing relationships and their nature. The analyses began with a correlation study between price and each of the indicators of quality.

Correlations between price, represented as tuition and fees from IPEDS, and the quality perception variables were analyzed first in the current study. From viewing the correlation results in the following tables, price was positively correlated with half of the variables of quality perception. The positive correlations ranged from .790 with the dollar amount of average financial aid to .007 with change in full-time undergraduate enrollment. The negative correlations ranged from –0.534 with student-to-faculty ratio to –0.001 with change in overall rank. To show the data clearly, the variables were broken into their respective categories, including financial, enrollment, faculty, student, and ranking categories.

Table 12 shows that the dollar amount of the average financial aid had a strong positive correlation, with a large effect size, and has strong significance, beyond the $p <$ .01 level, with the amount of tuition and fees combined at the institutions. The higher the tuition and fees combined, the higher the dollar amount of financial aid. In addition, and not surprisingly, the percent change in tuition and fees also correlated. While correlation existed, it was a weak positive relationship, with a medium effect size, but, it was significant beyond the $p < .01$ level, with the amount of tuition of fees combined.

Table 12

Tuition and Fees Combined with Financial Variables

		Tuition & Fees Combined	$ amount of average financial aid	% change in tuition & fees
Tuition & Fees combined	Pearson Correlation	1	.790**	.310**
	Sig. (2-tailed)		.000	.003
	N	88	88	88

**Correlation is significant at the 0.01 level (2-tailed).

Regarding the enrollment variables in Table 13, while some of the correlations were not as strong as the relationship with the dollar amount of financial aid given, some correlations still existed and were significant. Six-year graduation rate and the freshmen retention rate each showed a weak positive correlation, with a small effect size, at .213 and .284, respectively. The six-year graduation rate was significant at the $p < .05$ level, while the freshmen retention rate was significant beyond the $p < .01$ level. Conversely, first-time freshmen (FTF), and full-time enrollment negatively correlated to tuition and

fees combined. FTF was weakly correlated, with a small effect size, with an $r = –0.245$, and full-time enrollment was weakly correlated, with a medium effect size, with an $r = –0.364$. In addition, FTF was significant at the $p < .05$ level, and full-time enrollment was significant beyond the $p < .01$ level. The variables of acceptance rate, change in FTF, and the change in full-time enrollment showed no significant correlation with the tuition and fees combined of the represented institutions.

Table 13

Tuition and Fees Combined with Enrollment Variables

		6-year graduation rate	Acceptance rate	Freshmen Retention Rate	First-time Freshmen (FTF)	Change in FTF	Full-time enrollment	Change in full-time enrollment
Tuition & Fees combined	Pearson Correlation	.213*	.167	.284**	.245*	-.025	-.364**	.007
	Sig. (2-tailed)	.046	.119	.007	.021	.819	.000	.951
	N	88	88	88	88	88	88	88

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

In Table 14, the results of a correlation with tuition and fees combined and the faculty variables were examined. The only significant variable within the faculty variables was related to the student-to-faculty ratio at the institutions. While not significant, the percent of terminal degrees and the compensation rank were negatively correlated to tuition levels. The student-to-faculty ratio showed a moderate negative correlation and medium effect size at $r = –0.534$, with a significance beyond the $p < .01$ level.

Table 14

Tuition and Fees Combined with Faculty Variables

		% of full-time faculty	% of faculty with terminal degrees	Faculty compensation rank	Student to Faculty ratio
Tuition & Fees combined	Pearson Correlation	.117	–.088	–.053	-.534**
	Sig. (2-tailed)	.099	.414	.621	.000
	N	88	88	88	88

**Correlation is significant at the 0.01 level (2-tailed).

Table 15 shows the correlations between tuition and fees combined with the variables associated with the student. Additionally, Table 15 shows the percent of classes with 50+ students, the percent of classes with under 20 students, and the percent of alumni giving, all significantly correlated with the level of tuition and fees combined. The percent of classes with 50+ students ($r = –0.289$) and the percent of alumni giving ($r = –0.221$) were weakly negatively correlated, and had a small effect size, with tuition and fees combined. The percent of alumni giving was significant at the $p < .05$ level, and the percent of classes with 50+ students was significant beyond the $p < .01$ level. The percent of classes with under 20 students was moderately positive, with a medium effect size ($r = 0.426$) and was significant beyond the $p < .01$ level.

Table 15

Tuition and Fees Combined with Student Variables

		% of classes with 50+ students	% of classes with under 20 students	% of incoming class in top 25%	Average ACT of entering class	% of alumni giving
Tuition & Fees combined	Pearson Correlation	–.289**	.426**	.166	.147	-.221*
	Sig. (2-tailed)	.006	.000	.122	.172	.038
	N	88	88	88	88	88

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed)

Ranking variables in Table 16 showed no statistically significant correlations existed between tuition and fees combined with the actual rankings in USNWRCR or the peer score. While not statistically significant, the direction of the correlation coefficients indicated a lower overall ranking with higher tuition, but with a lower peer score.

Table 16

Tuition and Fees Combined with Ranking Variables

		Peer Score	Overall US News ranking	Change in overall US News ranking
Tuition & Fees combined	Pearson Correlation	–.108	–.038	-.001
	Sig. (2-tailed)	.318	.726	.990
	N	88	88	88

Price Increases and Rankings

The research next analyzed variables associated with the second research question, “How do tuition and fee increases correlate with the perception of schools as indicated in the USNWR rankings?” The question was asked to determine if the increases in tuition and fees had any bearings on the overall rank and peer score

associated with the USNWRCR. The rankings are often used to determine the quality of a college or university without delving deeper into other variables of quality. The actual percent change for the eight institutions in the current study ranged from 1.68% (King University) to 11.77% (Campbellsville University) with a mean of 4.91%, and standard deviation of 1.918.

The percent change in tuition and fees combined was negatively correlated to both overall USNWR ranking and to the change in the USNWR ranking while being positively correlated to the peer score. None of the correlations were significant even at the .05 probability level. The results are shown in Table 17. When running the correlation, peer score was negatively correlated to overall ranking and overall change in rank due to its contribution to the direct calculation of that score. As the peer score increased, the overall rank of the institution decreased.

Table 17

Correlation with % Change in Tuition and Ranking Variables

		Percent change in tuition	Peer score	Overall US News ranking	Change in overall ranking
Percent change in tuition	Pearson Correlation	1	0.052	–0.062	–0.082
	Sig. (2-tailed)		0.633	0.565	0.45

	N	88	88	88	88
Peer score	Pearson Correlation	0.052	1	-0.694**	-.216*
	Sig. (2-tailed)	0.633		0.000	0.043
	N	88	88	88	88
Overall USNWR ranking	Pearson Correlation	-0.062	-0.694**	1	0.201
	Sig. (2-tailed)	0.565	0.000		0.061
	N	88	88	88	88
Change in Overall rank	Pearson Correlation	-0.082	-.216*	0.201	1
	Sig. (2-tailed)	0.45	0.043	0.061	
	N	88	88	88	88

** Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

Enrollment's Change with Pricing Trends

To address the third research question, "Do enrollment figures, including the number of first-time freshmen and full-time undergraduate students, serve as an indicator of perceived quality, and change with the trends in pricing?" the data was analyzed with a bivariate Pearson correlation. As shown in Table 18, the change in first-time freshmen enrollment ($r = –0.154$) and the change in full-time undergraduate enrollment ($r = –0.011$) were negatively correlated and had small effect sizes with the percent change in tuition. However, neither variable significantly correlated with the percent change in tuition.

Table 18

Correlation with % Change in Tuition and Enrollment Counts

		Percent change in tuition	Change in first-time freshmen enrollment	Change in full-time undergraduate enrollment
Percent change in tuition	Pearson Correlation	1	–.154	–.011
	Sig. (2-tailed)		.151	.921

	N	88	88	88
Change in first-time freshmen enrollment	Pearson Correlation	–.154	1	–.143
	Sig. (2-tailed)	.151		.184
	N	88	88	88
Change in full-time undergraduate enrollment	Pearson Correlation	–.011	–.143	1
	Sig. (2-tailed)	.921	.184	
	N	88	88	88

Predictability Measures Within the Data

The fourth research question within the current study used the historical archival data to see if predictability measures regarding tuition increases and quality perception variables were available. First, the current study was used to explore the question, Do increased tuition levels provide an increase in quality perception variables? If increased tuition levels did increase quality perception variables, which ones? To analyze the variables, a linear regression was first run on the data through SPSS®, using tuition and fees as the dependent variable, which produced 11 variables that had a variance inflation factor (VIF), when testing for multicollinearity, greater than 4 (VIF > = 4). The variables included:

- % of classes with 50+ students
- % of classes with under 20 students
- % of full-time faculty
- % of incoming class in top 25%
- 6-year graduation rate
- average ACT of entering class
- freshmen retention rate

- faculty compensation rank
- peer score
- first-time freshmen
- full-time undergraduate enrollment

The 11 variables were removed from further tests based on the high VIF results. The variables and the others with lower VIFs are shown in Table 19. Moderate to high VIF results indicated variables that could adversely affect the results of multiple regression tests.

Table 19

Initial Linear Regression Results for Multicollinearity

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6658.194	13303.648		-.500	.618		
	Pecent change in tuition	421.412	173.459	.163	2.429	.018	.725	1.379
	% of classes with 50+ students	320.237	289.413	.160	1.107	.273	.155	6.458
	% of classes with under 20 students	127.429	75.654	.238	1.684	.097	.163	6.118
	% of full-time faculty	-28.868	57.512	-.062	-.502	.617	.210	4.762
	% of incoming class in top 25%	-27.414	76.026	-.051	-.361	.720	.164	6.091
	% of faculty with terminal degrees	-31.817	64.731	-.051	-.492	.625	.306	3.265
	6 year graduation rate	-142.389	95.765	-.226	-1.487	.142	.141	7.086
	Acceptance rate	66.031	31.382	.179	2.104	.039	.448	2.234
	Average ACT of entering class	672.842	581.251	.185	1.158	.251	.127	7.860
	% of alumni giving	51.330	97.753	.057	.525	.601	.277	3.612
	$ amount of average financial aid	1.220	.159	.838	7.686	.000	.274	3.650
	Freshmen retention rate	51.118	148.350	.064	.345	.732	.095	10.543
	Faculty compensation rank	-15.732	19.763	-.127	-.796	.429	.128	7.842
	Peer score	-4520.081	2459.385	-.244	-1.838	.071	.185	5.420
	Student to faculty ratio	-69.782	196.887	-.034	-.354	.724	.352	2.842
	Overall US News ranking	-18.594	15.721	-.121	-1.183	.241	.309	3.239
	Change in Overall rank	-2.928	16.037	-.012	-.183	.856	.719	1.391
	First time freshmen	-7.064	4.248	-.274	-1.663	.101	.120	8.320
	Change in first time freshmen enrollment	8.029	6.053	.094	1.326	.189	.654	1.529
	Full-time undergraduate enrollment	2.060	1.173	.283	1.757	.084	.126	7.962
	Change in full-time undergraduate enrollment	-.935	2.258	-.027	-.414	.680	.744	1.344

a. Dependent Variable: Tuition and fees combined

In addition to testing for multicollinearity, Figure 2 shows a plot of the regression standardized residuals for the dependent variable of tuition and fees combined. Figure 2 clearly shows that the linear regression tests are appropriate for the data as they are not scattered randomly around the horizontal line.

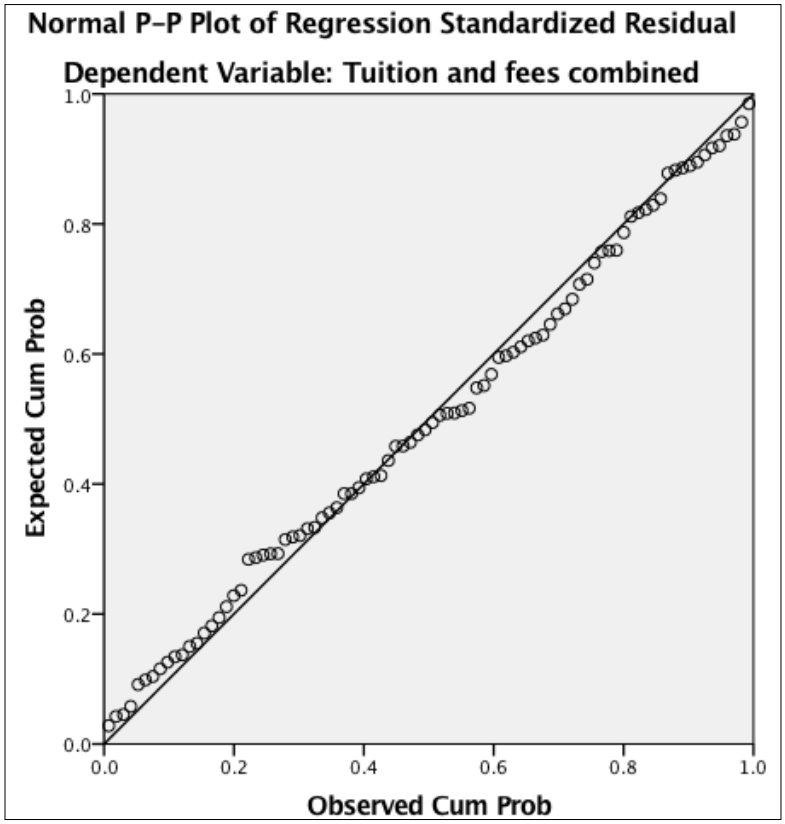

Figure 2. Plot showing that the linear regression model is appropriate.

The next several steps involved running multicollinearity tests on the remaining variables, while moving each variable to be the dependent variable in each test, which ensured that all variables with multicollinearity levels over 4.0 were removed. Table 20

shows the results using only the variables with a VIF < 4, with tuition and fees as the dependent variable in the linear regression test.

Table 20

Final Linear Regression Results for Remaining Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3621.504	4778.860		.758	.451		
	Acceptance rate	53.169	25.605	.144	2.076	.041	.914	1.094
	% of alumni giving	24.785	65.083	.027	.381	.704	.849	1.177
	$ amount of average financial aid	1.089	.128	.748	8.508	.000	.572	1.748
	Student to faculty ratio	-142.661	181.337	-.070	-.787	.434	.564	1.773
	Change in first time freshmen enrollment	.689	5.816	.008	.118	.906	.963	1.038
	Change in full-time undergraduate enrollment	.024	2.348	.001	.010	.992	.935	1.069
	% of faculty with terminal degrees	-32.089	44.833	-.051	-.716	.476	.868	1.152
	Change in Overall rank	1.706	16.428	.007	.104	.918	.931	1.074

a. Dependent Variable: Tuition and fees combined

By reading the coefficients illustrated in Table 20 through a linear regression, it is clear that acceptance rate, % of alumni giving, dollar amount of average financial aid, change in first-time freshmen, change in full time undergraduate enrollment, and change in overall rank all increased when tuition and fees increased. At the same time, student-to-faculty ratio and the % of faculty with terminal degrees decreased.

CHAPTER FIVE: DISCUSSION

Introduction

Chapter involves a discussion and summary of the current study and is used to provide conclusions from the research presented in Chapter 4. It will include an exploration of any implications for action in the enrollment profession and recommendations for further research in academia. The order of the chapter begins with a summary of the study problem, the research questions, the methodology, and the major findings, followed by an explanation of how the findings relate to the literature, surprises from the findings, and, finally, the implications for action and recommendations for further research. The concluding remarks will include a summary of the entire study, its findings, and final thoughts.

Summary of the Study

Currently, in the United States few topics are found that capture people's focus and passion like the rising cost of collegiate study. The average debt for students taking loans to cover college costs is more than $35,000 in federal and private loans combined. Figure 3 shows the increase in the average loan debt over time. The increase in college debt has been focused on by members of the media discussing the horror stories of college graduates buried under significant debt. Understanding what drives costs up was

important, but so was understanding how the increased costs influence the perceptions of quality for the institutions students choose to attend.

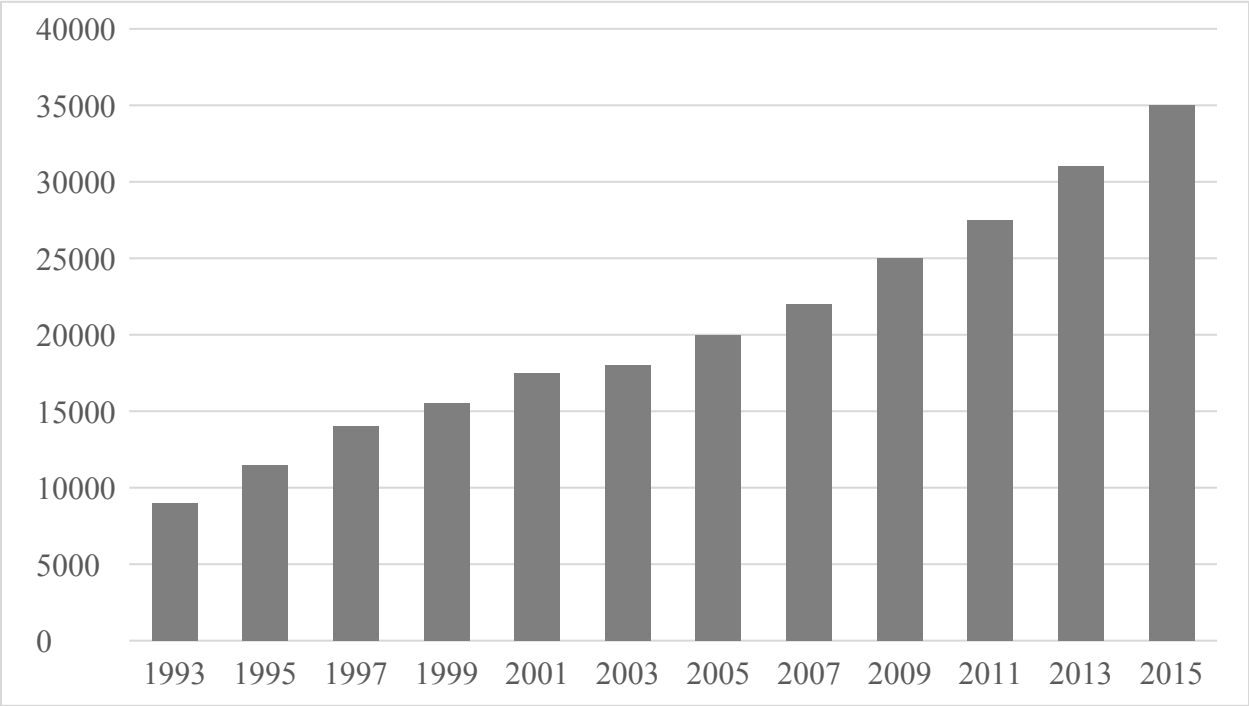

Figure 3. Increase in student loan debt over time.
Adapted from a table contained in "Congratulations, Class of 2015. You're the Most Indebted Ever (For Now)," by J. Sparshott, *Wall Street Journal*, 2015.

Van Der Werf and Sabatier (2009) said, "No problem is more vexing than the reality that college is increasingly unaffordable for most people" (p. 23), and "Public anxiety over the cost of college is at its highest level ever" (p. 25). The increase in debt (see Figure 3), the increase in price, and the attention from the public causes practitioners and researchers to need a better understanding of the variables involved in the perception of universities by their constituents.

The purpose of the current study was to begin measuring the relationship between pricing (tuition and fees) and the perception of quality for Christian higher education (CHE). While the findings within the current study may not be generalizable, some findings can be used to help better understand the relationships. Significant relationships were shown between price and the dependent variables. The research questions for the current study were:

RQ_1. Does the price (tuition and fees) of Christian higher education affect the perception of the quality of those institutions, with quality perception represented by 20 dependent variables related to higher education?

RQ_2. How do tuition and fee increases correlate with the perception of schools as indicated in the U.S. News and World Report (USNWR)rankings?

RQ_3. Do enrollment figures, including the number of first-time freshmen and full-time undergraduate students that serve as indicators of perceived quality, change with the trends in pricing?

RQ_4. Does analyzing the historical trends provide ways to predict how the variables will change as price increases?

To explore the questions, a quantitative analysis involving a select group of institutions was undertaken. The current study was used to examine eight colleges that, at the time of the study, were all classified in the same Carnegie category for the period of time studied (2005–2015). From that group, data were collected from archival databases (USNWRCR and IPEDS). Each database is updated yearly by *U.S. News and World Report* and the federal government. Each of the eight institutions, for the duration

of the current research, was ranked in the Regional Universities South category and were members of CCCU. The schools are listed in Table 21.

Table 21

Eight CCCU Member Schools Represented in the Data Source

School	Location	Overall USNWRCR Rank
Belhaven University	Jackson, MS	58
Campbellsville University	Campbellsville, KY	84
King University	Bristol, TN	71
Lee University	Cleveland, TN	46
Lipscomb University	Nashville, TN	18
Mississippi College	Clinton, MS	32
Palm Beach Atlantic University	West Palm Beach, FL	46
Union University	Jackson, TN	14

Dependent and Independent Variables

The dependent and independent variables used in the current study to explore the relationship between pricing in CHE and perceived quality are listed below. For each variable, 10 years' worth of data was gathered for research. The dependent variables used were:

1. % of classes with 50+ students
2. % of classes with under 20 students
3. % of full-time faculty
4. % of incoming class in top 25%
5. % of faculty with terminal degrees
6. 6-year graduation rate
7. acceptance rate

8. average ACT of entering class
9. % of alumni giving
10. $ amount of average financial aid
11. freshmen retention rate
12. faculty compensation rank
13. peer score
14. student-to-faculty ratio
15. overall USNWR ranking
16. change in overall USNWR rank
17. first-time freshmen (FTF)
18. change in FTF
19. full-time enrollment
20. change in full-time enrollment

The 2 independent variables were (a) tuition and fees combined, and (b) % change in tuition and fees. The variables were used to represent the institutions across student populations, faculty member characteristics, retention efforts, alumni behaviors, peer analysis, and financial strategies. The variables were used to provide an overview of the institution to see perceived quality and pricing relationship implications for a university campus. Many students and parents use the variables as ways to formulate their value of the institution, which is partly based on the availability of this information through publically available Internet sites.

Major Findings

To discuss the findings of the study, the variables are shown the same way they were in shown in Chapter 4. The data were broken into financial variables, enrollment variables, faculty variables, student variables (including alumni), and ranking variables. The first research question asked, "Does the price (tuition and fees) of Christian higher education affect the perception of the quality of those institutions, with quality perception represented by 20 dependent variables related to higher education?" Correlations with the financial variables showed that when tuition and fees increased, the dollar amount of average financial aid given to students was strongly correlated, with a large effect size, at $r = 0.790$ and was significant at the $p < .01$ level. While this may seem obvious, it indicates one of the major problems facing many CHEs and other institutions. How does an institution find a sustainable model for pricing in higher education that does not involve rising prices and rising discounts? Increased financial aid is provided to attract students, compete with other institutions, and recruit the top level students, who then show up in the USNWRCR data. The concept will be discussed further as a recommendation for further research. Not surprisingly, the percentage change in tuition and fees also significantly correlated and had a medium effect size ($r = 0.310$, $p < .01$) with tuition and fees, suggesting that the prices were moving in the same direction.

The enrollment variables showed some interesting results when correlated with tuition and fees. Student persistence variables were significantly positively correlated with increases in tuition and fees. Both the 6-year graduation rate, with a small effect size ($r = 0.213$, $p < .05$), and the freshmen retention rate, with a small effect size ($r = 0.284$, $p < .05$) showed that even as price increased, students stayed with the university through graduation, which could be because the students believed they have invested

significant resources and did not wish to leave after the investment was made. Specific reasons for the interaction are another area for additional research that is outside the scope of this current study. First-time freshmen ($r = –0.245$, $p < .01$) and full-time enrollment ($r = –0.364$, $p < .01$) showed a significant negative correlation, with a small and medium effect size respectively, to increasing tuition and fees. The specific finding will be discussed.

Faculty variables showed only one significant relationship, and it is one that parents and students look for when they are determining the value of the education being offered by an institution. Student-to-faculty ratio showed a significant moderate negative correlation and a large effect size ($r = –0.534$, $p < .01$) with rising tuition and fees, which indicated that as the price increased, institution leaders created more significant opportunities for faculty and students to know one another. This was not class size, but was related to the faculty's overall ratio.

Closely related were the student variables, which showed three significant relationships. Tied closely with student-to-faculty ratio was class size. The percentage of classes with 50 or more students, with a small effect size ($r = –0.289$, $p < .01$), and the percentage of classes with under 20 students, with a medium effect size ($r = 0.426$, $p < .01$), showed how as price increased, classes became smaller. The academic environment provided more scenarios where students and faculty members got to know one another, had beneficial learning relationships, and possibly better experiences overall. Notice that, in the current study, increased cost correlated with lower class sizes, lower student-to-faculty ratios, and an increase in retention and graduation rates, which appeared to indicate a consumer satisfaction level that helps the students stay through to graduation.

However, countering the idea of consumer satisfaction was that the percentage of alumni giving, with a small effect size ($r = –0.221$, $p < .05$), went down as price increased. Some of the relationship could be that alumni do not agree with the college administration's decision to increase fees as high as they have, or perhaps the alumni were paying for their children to go there and no longer had enough money to donate. Only speculation can be given for this relationship, but it serves as another avenue for further research.

Regarding overall rank and change in rank with USNWRCR, there were no significant correlations between those factors and price. While the correlations were all negative, they did not show as being significant. The negative correlation indicated that as institution leaders increase prices, the school's peer score ($r = –0.108$), its overall USNWR ranking ($r = –0.038$), and the change in overall USNWR ranking over time ($r = –0.001$) all become better. While the finding was not significant, it was interesting that all those factors pointed in the same direction.

The second research question of the current study was, "How do tuition and fee increases correlate with the perception of schools as indicated in the USNWR rankings?" The current study showed no significant correlation between price and ranking. A step-wise correlation was run using the variables percent change in tuition, peer score, overall USNWR ranking, and change in overall ranking. The approach showed no significant correlation with price, but it did with the peer score, which makes logical sense because the peer score is so heavily relied upon in calculating the overall score. While this examination did not create any new insight into perceived quality and price, it did show that the procedure itself is working by statistically validating some facts that may be

widely known within the profession. One example is showing the challenge facing CHE leaders over increased aid as tuition and fees rise.

The third research question was related to enrollment figures and price. "Do enrollment figures, including the number of first-time freshmen and full-time undergraduate students, that serve as indicators of perceived quality, change with the trends in pricing?" It was clear that as tuition and fees increased some of the enrollment variables were significantly correlated. Six-year graduation rates ($r = 0.213$, $p < .05$), freshmen retention rates ($r = 0.284$, $p < .01$), first-time freshmen ($r = –0.245$, $p < .05$), change in first-time freshmen ($r = –0.245$, $p < .05$) and full-time enrollment ($r = –0.364$, $p < .01$) were all significantly correlated. With the exception of full-time enrollment, which had a medium effect size, all had small effect sizes, which is important for institution presidents, chief financial officers, and chief enrollment officers to understand. Beyond that, any decision-makers at an institution who have pricing responsibilities should be aware of the implications of increasing price. Analyzing specific markets for specific programs at specific institutions will help identify how price elastic or nonelastic customers might be. The market analysis will be used to help administrators understand to what level a change in price might impact their enrollments and bottom lines.

It is important to note that while the level of price and the cost to the student is significant, the percentage of change involved was not significantly correlated. It was the overall price that mattered. Percent change in tuition and fees, while negatively correlated with change in first-time freshmen enrollment ($r = –0.154$) and the change in full-time undergraduate enrollment ($r = –0.011$), were not significant. The negative correlation suggests some of the same behaviors as the total tuition and fees' correlation

with the variables, because it suggests that enrollment figures decrease as price increases at these institutions.

Regarding the fourth research question, "Does analyzing the historical trends provide ways to predict how the variables will change as price increases?", some predictability measures were run to determine if the archival data of increases in tuition and fees could provide any patterns of behavior that would offer predictability in the variables. A linear regression was run to enable the researcher to pull out any variables with a VIF >4, when testing for multicollinearity. Additionally, the plot in Figure 2 showed that the linear regression test was appropriate given the data. Of the remaining independent variables, when run with tuition and fees as the dependent variable, the study showed that as acceptance rate and the average amount of aid increased, then so did tuition and fees. The opposite was also true. If an institution raised its costs, it could be assumed that the amount of aid given and the rate of acceptance would also increase.

Conclusions

The current study, which was not generalizable, showed significance as it related price to enrollment variables. First-time freshmen and overall full-time enrollment both decreased as tuition and fees increased, which should be no surprise and will provide some merit to the idea that as price increases, enrollment at CHEs decreases in many cases. The outcome happened while the average financial aid given to students increased as well. While the data may not be a surprise, it showed that institutional decisions regarding price have widespread implications and should be taken seriously. As follows, nine significant findings were indicated from the current study:

1. When tuition and fees increase, the dollar amount of average financial aid given to students is strongly correlated at $r = 0.790$ and is significant at the $p < .01$ level, which was important for those making decisions regarding revenue generation. According to the results, it will cost more per student, but could be beneficial if the volume of enrollment is available. However, increased enrollment is unlikely.
2. First-time freshmen ($r = –0.245$, $p < .01$) and full-time enrollment ($r = –0.364$, $p < .01$) showed a significant negative correlation to increasing tuition and fees. The finding was significant, because it showed that the volume of increased students needed to balance the revenue equation with the increased aid is not likely to become reality.
3. Both the 6-year graduation rate ($r = 0.213$, $p < .05$) and the freshmen retention rate ($r = 0.284$, $p < 0.05$) showed that as price increases, students seem to stick with the university through graduation even as prices go up, which could have been caused by holding on to an investment or that students who entered were not as sensitive to price. This is an area that could use further research beyond the scope of the current study.
4. While it may seem as if satisfaction is increased based on the retention correlation, alumni data showed the opposite. The percentage of alumni giving ($r = –0.221$, $p < .05$) went down as prices increased. A strong focus on students, while they are in college, and alumni development afterward, will be extremely important to avoid these results.
5. Student-to-faculty ratio showed a significant moderate negative correlation ($r = –0.534$,

$p < .01$) with rising tuition and fees. For parents and students, the ratio was seen as a value, which is a clear, understandable description of how much attention will be available throughout the learning process. For CHE administration staff, finding a balance in the student-to-faculty ratio is important for efficiency and effectiveness.

6. The percentage of classes with 50 or more students ($r = –0.289$, $p < .01$) and the percentage of classes with under 20 students ($r = 0.426$, $p < .01$) showed that as price increased, classes became smaller, which could be due to the correlation between increased price and enrollment. It could also be a function of the institution providing additional options for students as prices increased.
7. The current study showed no significant correlation between price and the ranking variables. The ranking variables consisted of peer review and overall ranking. It is assumed that the peer is unaware of the price, but simply the reputation. Given the weight of the peer score on the overall ranking, the results are understandable.
8. It is important to note that while the level of price and cost to the student is significant, the percentage change involved was not significantly correlated. The result showed that the consumer is not always aware of the change in price, or if he or she is, it does not really matter. What consumers are most concerned with is the overall price.
9. Regarding the predictability within the historical data, if institutional leaders raise the institution costs, it can be assumed that the amount of aid given and the rate of acceptance will also increase.

The current study will be used to add to the current body of knowledge, but a significant amount of study for researchers and practitioners to explore exists so that administrators can understand the minds of shifting generational behaviors. The topic is far too important to be ignored or taken for granted. If employees at CHEs feel the passion to work in institutions that have similar missions and values, then it becomes necessary to understand the customer better. All involved need to understand how their decisions concerning pricing affect the rest of the institution and its customers. It should be noted that the research shows other factors at play, with tuition and fees in the formulation of perceived quality, and that price alone is not the sole contributor to quality perception.

Implications for Theory

Little research has been done on the PQ relationship in higher education. A search of JSTOR and EBSCOhost databases showed only one study, completed by Gilmore (1990). Turley (1988) did a study in which he focused on the service sector of business and how the PQ relationship exists within it. His question was, "Is price used as a surrogate cue to service quality?" (Turley, 1988, p. 102). There was no definite answer determined from Turley's study. While some significance was found between price and specific variables, there appeared to be influence from other aspects of determining the overall quality of an institution (Gilmore, 1990). It is likely that, while not included in this study, a personal bent toward an institution by family, friends, athletics, and other avenues could also play into the formation of the perception of overall quality. In this study, one of the questions asked was, "Does price affect the perception of quality, as

determined by quality indicators?" The question itself showed new possibilities for the theory to be explored deeper in academe. The conclusion of this study was similar to Turley's:

> Regardless of the significance of the price-quality relationship, one study cannot be considered conclusive evidence. Several studies using different measures and different types of methodologies are needed to either confirm or dispute the findings of this research. (Turley, 1989 p. 103)

The current study will be used to add to the modern body of literature by providing another vantage point to Turley's earlier work and a new way of looking at the topic. In addition, the current study showed how some relationships exist between rising prices and the variables. As time continues, new pricing trends will emerge, as will new ways in which quality will be determined in higher education. In addition to new pricing trends, external influences are likely to enter the view of perceived quality. Members of the media regularly provide information on government pressures to offer free education through the public school systems. Additionally, election results in the U.S. federal government could shift the future of higher education and its norms. The changes will alter competitive landscapes and marketing strategies that include pricing.

Implications for the Profession

The current study served as another reminder that the sustainability of raising costs and raising aid is unlikely. Even with rising aid, enrollments are decreasing. As CHEs become more expensive, the environment around them is shifting. State officials continue to explore and implement free or reduced costs at their community and four-

year colleges, federal and state aid continues to be used as a tool for the government to implement policy at CHEs that do not always go hand-in-hand with the institutions' mission, and the media members continue to publicize the public schools as better options than private education. There are always exceptions to the rule within the CHEs. There are also many other inputs to consider.

The amount of marketing an institutional leader does to recruit students and promote the institution, the success of their athletic programs, the success of their alumni, the sponsorships of key events, etc., will all contribute to changing these variables as well. The current study showed issues that arise with the increase of tuition indicating frustrations felt by practitioners in enrollment in higher education. From the literature review, the idea of price in higher education is not a topic that is missed by the American public, media, or politics. It is a current topic that brings significant frustration, confrontation, and misunderstandings from every viewpoint.

The issue has caused some intuitions to formulate creative, out-of-the-box strategies for institutions of higher education. One example is Grace College's "A Measure of Grace" (http://www.grace.edu/gamechanger/). In the plan, students find free books, graduate in three years, and have the chance to add a master's degree—not only while seeing see tuition that doesn't change, but one that reduces while the student is enrolled. While the strategy may not work at other institutions, or for long at Grace College, it shows the creativity occurring regarding pricing of a college education. Until additional research is completed to know the full process of how quality is perceived in CHE, creative marketing efforts will continue to be utilized to keep costs and discounts under control. Many of the efforts are currently being categorized as innovation in higher

education. In the business world, it would be a process of looking for efficiencies, analyzing markets, knowing the competition, and executing strategies based on data and environmental influences.

Limitations

Limitations within the methodology and the variables used to study the PQ relationship in CHE would include the following:

1. The size of the sample: To broaden the sample size to include more institutions could provide further confirmation of the analysis contained within the current study or disprove some of its contents on a larger scale.
2. Separating the full-time and part-time students to see if part-time students are more vulnerable to increases in price due to the lack of financial aid, which could demonstrate stronger or weaker correlations.
3. The methodology used to select the variables could be broadened to include information specifically about gender, ethnicity, and other demographics. The inclusion of the variables could change the focus of the study, because they are not typically used to formulate value.
4. Studying the type of student, in regard to test scores, GPAs, and other measures of academic success to measure student sensitivity to price and its increases could provide further information to help practitioners target their markets more closely.

While the limitations exist within the study, they are also outside the scope of the research. They could be used as avenues for further research into developing a deeper understanding of PQ in CHE or other types of institutions.

Recommendations for Further Research

An increasing need exists to understand the pricing model held by many institutional leaders of higher education that entails the raising of costs and discounts simultaneously without regard, in some cases, to inflation, outside influences, market research, or professional opinion. Future researchers need to take a closer examination of the rising costs and rising aid phenomenon. Additionally, as the current study has shown, alumni giving is significantly negatively correlated to tuition and fees, which should be of concern to all institutions. Alumni support is important for the health of the fund-raising efforts of any institution. Additionally, some potential donors like to see how well the alumni back their alma mater before donating themselves. If the percentage is low, it could keep potential donors from turning over their funds or estates to the institution. Another aspect of perceived quality in CHE would be related to the percentage of operating budget spent toward strict marketing efforts of the institution and the strategic alignment of those efforts across the institution. How do strategic marketing efforts for institutions, which would include a pricing model, impact the variables? Is there a correlation between marketing dollars spent and the growth of enrollment or high quality students? Many avenues for additional research exist that are outside the scope of the current study, but that could hold great insight for CHEs across the country.

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