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Key Performance indicators of health CTE students at for-profit colleges and public community colleges

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KEY PERFORMANCE INDICATORS OF HEALTH CTE STUDENTS AT FOR-PROFIT
COLLEGES AND PUBLIC COMMUNITY COLLEGES

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KEY PERFORMANCE INDICATORS OF HEALTH CTE STUDENTS AT FOR-PROFIT
COLLEGES AND PUBLIC COMMUNITY COLLEGES

by

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DISSERTATION

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Abstract

The advent of for-profit colleges to the higher education scene in the U.S. has challenged public community colleges on all levels; financial, academic, and consumerism. Research has shown that key performance indicators are more favorable at public community colleges than at for-profit colleges. Determining size and type of colleges, ethnicity and gender differences that contribute to total graduation rate of health Career and Technical Education (CTE) students will add to the limited research on the relationship between these constructs and provide information to prospective health CTE students about college enrollment.

The study aims to examine institutional performance variables to assist any student interested in enrolling in either For-Profit Colleges (FPC) or Public Community Colleges (PCC). Institutional performance indicators included graduation and debt rate differences between these two types of colleges and across their different sizes. Tuition books and costs are considered as covariate for the study. Additionally, gender and ethnic graduation rates are also measured across types and size of the colleges. In this context, total graduation rate is measured as the overall health CTE completion of students within 150% of the published time for the program. Based on key performance indicators of 58 community and for-profit colleges in the state of Texas, findings from between- and within-subject designs multivariate statistical analyses indicated statistical difference on graduation rates and level of indebtedness between type and size of institutions including male and female graduation rates being statistically significant for same grouping variables. In addition, there were also ethnic graduation completion mean differences between and among several pairwise comparison groups. Recommendations for practical applications of this study and for future research will be discussed.

Keywords: total graduation rate, level of indebtedness, ethnicity, gender, size and types of colleges, for-profit colleges, public community colleges, student services, tutoring, mentoring, advising, key performance indicators, CTE health

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Chapter 1: Introduction

Background of the Problem

Colleges, overall, have been the educational vehicle to acquire a lucrative and secure job. They are quite equipped to teach and train vocational and career and technical education (CTE) students through two –year programs that are post-high school and pre-bachelor’s degree (Center on Education & Workforce, n.d). Many of the career and technical education programs center on the healthcare industry. Healthcare is a wide field where life-saving procedures and treatment are conducted by highly skilled, sometimes highly technical, meticulously specific providers, technicians, and/or simply assistants, such as radiation therapists, sonographers, respiratory care technologists, and/or medical assistants. Health CTE started mainly at the different public community colleges in the nation as a way to address the need to upgrade skills of employees or interested students in health to receive a credential whereby they can fill these occupations and save a life in the process. However, almost all health CTE graduates need to pass a licensure test, awarded by the state and/or the program’s national accrediting agency, to start employment at any of the hospitals or clinical affiliates; otherwise, they are not able to work or be hired by any employer (THECB, 2020). Additionally, these credentials are required to be kept up by continually acquiring continuing education credits by the program’s accrediting agency to stay successfully employable. Generally, the public community colleges have been relatively successful at producing skilled and knowledgeable healthcare professionals (THECB, 2020).

Since the mid-1970s, the surge of for-profit colleges (FPCs) has been documented and their booming presence has been quite visible. However instead of catering to the government and its stakeholders, regulatory agencies, and accreditation bodies like the public community colleges (PCCs), the FPCs have focused mostly on the stockholders and for the most part

overlooked accountability and measures of student success (EPEC, 2020). These effects are as a result of an exponential increase in enrollment in FPCs, but when reviewing the retention, completion, and graduation outcomes of their health CTE students, data show that these numbers largely are lower and their respective health affiliates do not hire them because their health program accreditation is not accepted by their administration (El Paso Educators Council, EPEC, 2020). There is a scarcity of literature identifying academic outcomes and employment as being the advantageous variables to selecting public over for-profit colleges (Deming, Goldin, & Katz, 2012); others have highlighted marketing image, facilitating finances, or other variables for selecting private over public colleges (Cottom, 2017). As such, there is not enough literature that identifies the most predictive variables to selecting PCCs over FPCs.

The current study aims to identify variables to health CTE students' selection of institution. This selection is paramount in guiding students' decisions towards their future career and lucrative employment (El Paso Educators' Council, EPEC, 2020). It is really wasteful for a health CTE student to enroll in a FPC, complete the program, but fail to pass the licensure test; hence, not being able to work at any of the health affiliates, also because the health affiliates do not accept the FPCs accreditation agencies as a vehicle for licensure's acquisition (EPEC, 2020). It is catastrophic for the student to have incurred a tremendous debt to pay for tuition at FPC and then be eventually ineligible for employment and/or licensure passing (EPEC, 2020). To mitigate the issue of selecting FPC over PCC to make an educated college choice, this study proposes to examine institutional performance variables to assist any student interested in enrolling in either FPCs or PCCs, and to measure the completion rates of health CTE students. Of special interest to the researcher, is assisting future students to enroll in a health-related field in such two-year institution.

For-Profit v. Public Community Colleges

Even in the midst of an economic boom, approximately 27 million adults in the United States remain unemployed or stuck in low-wage jobs (Center on Education and Workforce, n.d.). At the same time, nearly 2 in 5 U.S. employers report difficulty filling jobs. They struggle to find educated, qualified workers even in the fields that offer strong wages (Center on Education and Workforce, n.d.). Very often, the missing criterion is a college education. More than ever, college is a prerequisite for economic mobility and financial stability. In the U.S., people with a four-year degree earn 44 percent more over their working years than those with only a high school diploma, and approximately 15.7 million or 24 percent of the nation's well-paying jobs require more than a high school diploma but less than a bachelor's degree (Center on Education and Workforce, n.d.). Some two million Americans are enrolled in for-profit colleges, up from 400,000 in 2000. Those students, most of them working adults getting short-term certificates, are disproportionately nonwhite and female (Cottom, 2017). FPC's students graduate with an average school debt of \$26,898 whereas PCC's students graduate with an average debt of \$6,900 (NCES, 2020). More importantly, the former is likely to default on their loans (Cottom, 2017). Ninety-four percent of for-profit students pay tuition with federal student loans (Cottom, 2017).

Proprietary schools and colleges, also known as for-profits, have lately been presenting a major competition to public, not-for-profit community colleges. This competition is felt in recruiting, marketing, or financing in the sense of financial aid and loans easily awarded to students. Additionally, the proprietary schools are now successfully recruiting the same type of community college students, mainly those in Career and Technical Education (CTE), with special focus on health careers such as Nursing, Surgical Technology, Diagnostic Medical

Sonography, Medical Assisting, Clinical Lab Sciences, and Physical Therapist assistant specialties, among others.

These proprietary, for-profit colleges have been very successful in attracting Students of Color, mainly Hispanics and Blacks (Wood & Vasquez-Urias, 2012), and those from a very depressed social and economic background. In essence, they are competing for the same type of students as the public community colleges. Per Cottom (2017), students of minority backgrounds veering towards FPCs are mainly driven by shrewd marketing tactics, lack of academic admissions pre-requisites, and assistance with tuition payments; basically, Students of Color are more accepted in for-profit colleges and their process of admission is easier because of their lack of academic preparedness and financial accountability (Cellin, 2020).

Perhaps these FPCs excel more than PCCs in recruiting and marketing because of their flexible schedules, online teaching, financial incentives, and materialistic attractions such as free i-Pads, etc. However, according to Long (2018), these institutions are failing in offering of academic rigor, successful licensure passing rates, and work placement upon completion (Long, 2018). As a result, FPC students end up with financial and academic hardships because many do not pass licensures, are not employed, and end up with high levels of debt (Dewd & Coury, 2006; Long, 2018). On the other hand, public, and not-for-profit community colleges tend to fare better in academic outcomes, licensure passing rates, and work placement upon graduation (Cellin, 2020; EPEC, 2020).

In the advent of for-profit colleges and universities to the higher education scene, the US government started facilitating their presence through financial aid awards to students and offering the same technical programs as the public community colleges. The competition between FPCs and PCCs is visible in the marketing and recruitment of the same types of students

and the offering similar technical programs. Yet, FPCs do not require a college entrance test for admission. Tests such as Texas Success Initiative (TSI), typically used by PCCs, measure whether the students' English reading and writing, and math skills are sufficient to deem them college ready. Specialized admissions requirements are a set of indicators that prospective students need to meet in order to be admitted into any of the competitive health programs at PCCs. These requirements are science and math GPA, ranking courses such as Anatomy and Physiology, Speech and Medical Terminology, and mandatory courses such as specialty and Biology level courses. In contrast, FPCs expedite students' acceptance and admission by accommodating them geographically, completing their own admissions application, and facilitating their educational loan applications (Cellin, 2020). Since PCCs promote and encourage transfer of these students into four-year universities, pre-requisites and academic rigor are required and expected to guarantee students success and transfer to a four-year institution, if desired. More importantly, refining admissions into health CTE programs and guaranteeing completion of the student is one of the accountability measures set by the State and the Federal governments for continued financial assistance of students; a requirement that is not required of FPCs. Additionally, FPCs are not required to report on academic outcomes such as licensure, employment, and graduation.

The Obama administration worked doggedly to regulate this sector under the Higher Education Act set forth in 2009 (NAICU, 2020). Its "Gainful Employment" rule, drafted and challenged in court by the FPCs and career schools, led to the collapse of hundreds of for-profit colleges whose graduates performed poorly in schools and in the job market (NAICU, 2020). In response, the industry complained that it was being punished for attempting to educate so-called low-status students: single mothers on welfare, high school dropouts with GEDs, and graduates

of underperforming public schools who lack basic math and reading skills (Tight, 2012). During four years of Trump's presidency, for-profit colleges found an ally in President Donald Trump, founder of Trump University through the appointment of Ms. Betsy DeVos as Secretary of Education, to basically validate charter schools, private schools, and for-profit higher education institutions. The Department of Education, under DeVos, overturned Obama's regulations regarding gainful employment (Kreighbaum, 2019). The Higher Education Act (HEA), enacted during the Obama Administration, required that all career education programs receiving federal student aid "prepare students for gainful employment in a recognized occupation" (Fountain, 2019). The HEA did not define "gainful employment," but in 2014 the Education Department adopted the gainful employment rule providing a definition of how career training programs could demonstrate they met this requirement. Although the rule worked to improve quality, lower cost and save taxpayer money, on July 1, 2019 the Trump Administration rescinded it and immediately allowed schools to stop complying (Fountain, 2019, Kreighbaum, 2019). As a result, FPCs stopped reporting outcomes and showing any accountability to the Department of Education, taxpayers, and consumers, mainly students.

The competition experienced between the two types of colleges magnifies the importance of gender enrollment, ethnicity, SES, accountability, debt and cost of tuition as variables in assessing selection of each of the systems vis-à-vis students' outcomes, namely completion, graduation, licensure measures, and job placement. These types of outcome variables are the basis for this research study.

This proposed study investigated the extent to which PCCs compared to FPCs in academic results in technical programs, specifically in those that are health oriented. These academic results are translated in better licensure outcomes documented by the Texas State's

Higher Education Coordinating Board (THECB), the State's single repository of data for public higher institutions. In addition, the study provided information about each of the institution's common metrics for students to make the best selection and subsequent enrollment.

Statement of the Problem

Private, not-for profit, and public community colleges have been experiencing high enrollment of adult students in health Career and Technical Education (CTE) students since the early 2000's (The Condition of Education, 2019). According to the National Center of Educational Statistics (2020), community colleges and for-profit institutions of higher education are preferred because they are conveniently located and specifically cater for the needs of health CTE students, compared to four-year universities. These students pursue education, geared for a health occupation, at a variety of settings; they seek the best fit with support services that will assist in degree attainment (Soliz, 2018). This support may directly affect how health CTE students transition into and matriculate from higher education.

Limited research exists on two main issues: 1) what do students select as the type of institution to attend and enroll initially, when their desired major is a health CTE major, and 2) what are the criteria for that selection at either of FPCs or PCCs. Research is inconclusive about the reasons behind such selection, whether the enrolled student knows or does not, the academic outcomes of each entity, employment post academic training, and financial debt post matriculation.

This study aimed to examine variables that could influence the decision-making process of health CTE students regarding type of college choice made and to examine the success of entities, vis-à-vis students' outcomes, delineated by degree completion, graduation, and overall level of students' indebtedness. Of particular interest, the study will focus on health occupations

and academic health programs, in particular, because health emanates from its importance in boosting the economy, and keeping Americans healthy. It sounds very simplistic but crucially vital to the viability of the states, their health, and economic status, including Texas. Almost all health graduates of any two-year associate degree start working at an average of \$28/hr. (Bureau of Labor Statistics, BLS, 2020). To put it into context, all health graduates will always work in their field, and meet health community needs, especially in a county that is designated as a “Health Professional Shortage Area” and a “Medically-Underserved area” like El Paso County (HRSA, 2020).

Purpose of the Study

The advent and fame of for-profit, proprietary colleges, formerly supported by President Trump’s administration, presents a serious competition to the public, not-for-profit community colleges, which are taxpayer funded and regulated by state government. This competition threatens the viability and sustainability of the latter. The creeping of the proprietary/for-profit colleges into the public college sector presents a problem to the community colleges and certainly an advantage and a benefit to the for-profit sector. Although competition is welcomed, there is no real set of reasons as to the divergence of funds even to unproven new entities attempting to provide similar educational opportunities to students.

The purpose of this study is to compare academic outcomes of health programs students in both types of colleges, FPCs and PCCs. These academic results are translated in graduation outcomes documented by the Texas State’s Higher Education Coordinating Board (THECB), the State’s single repository of data of higher institutions for public colleges and career schools. Therefore, the study identified relationships of variables, such as college type, tuition and fees, gender, ethnicity, or size of the college with academic performance using degree completion

rates and level of indebtedness at each educational institution. Targeting these important variables, as reported in the THECB's annual data bases, included the following study research questions.

Research Questions

The research questions for this study aimed to increase understanding of the experiences of health CTE students regarding type of college selection, and ultimately academic outcomes and employability of graduates in both FPCs and PCCs.

The research questions were the following:

1. Were there graduation completion and indebtedness rates differences between public and for-profit colleges and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs, in Texas for the 2018-2019 academic year?
2. Were there male and female student graduation completion rate differences between public and for-profit colleges and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs, in Texas in 2018-2019?
3. Were there ethnic groups graduation completion rate differences between public and for-profit colleges and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs, in Texas in 2018-2019?

Significance of the Study

This study adds more information about student-consumerism and the marketization of higher education by studying the factors leading to students' outcomes in both for-profit and public colleges. Examining variables that inform students about their selection of either public or private colleges might assist college leaders in implementing programs and policies to assist

with recruitment, enrollment, retention, graduation, licensure rates, and successful employment. These identified factors may also aid college personnel in meeting the needs of the generic health CTE student and subsequently the health care professional. As such, the college personnel will be informed of the comparative outcomes between the two types of institutions and then can work towards improving recruitment, marketing, and retention of students in health CTE majors. In addition, there is the policy component that state legislators may need to consider when debating funding formulas for these institutions. Finally, it may also inform directors and deans from these particular colleges and schools as to how they compare with these similar institutions where their ultimate goal is student success.

Assumptions

This study used a 2018-2019 secondary data, collected in the fall of 2020, about for-profit and public community colleges in the state of Texas by the researcher of the study. For this study, only the state of Texas colleges were chosen for two reasons: 1) the state is quite large and encompasses all types of colleges found in the nation, and 2) the researcher is a resident of one of the Texas counties, employed at one of the higher education institutions, and relatively familiar with the public college system.

The proposed study was driven by the following assumptions: 1) concentration on only two-year associate degree and/or one year certificate colleges was adequate; 2) data reported by Texas Higher Education Coordinating Board (THECB), National Council for Education Statistics (NCES), and Texas Workforce Commission (TWC) were deemed reliable and valid; and 3) though the state is vast, only fifty community colleges are available and reportable.

Limitations

The limitations of the study are those characteristics of design or methodology that impact or influence the application or interpretation of results of the study employing secondary data (Theofanidis & Fountouki, 2018). Since the study focused on only two-year colleges and not on any 4-year colleges or universities, results were not generalized to those institutions and the observed results could not be assumed that they would be applicable to all institutions of higher education. Additionally, the study sample was limited to only students who belonged to CTE health programs in both entities, proprietary and community colleges, and did not represent all college students of any two-year and/or one-year certificate programs. The colleges studied are also geographically located in the state of Texas and may not be representative of colleges in other states where state government regulations might be completely different, and state financial reimbursements and calculations might have been weighed heavier than that of the state of Texas. Furthermore, the data used for this study was secondary data retrieved from a state's reporting website, THECB, where a repository of graduation, licensure data, and job placement are delineated by higher education entities. This data was only limited to the public community colleges of the state. Accuracy and fidelity of data was limited since each individual community college self-reported these performance measures and might be based on an honor code; however, state financial allocation of funds was dependent on these performance measures, so accuracy of numbers was highly likely and usable. Lastly, FPCs data were extracted from either their own website, personal communication, NCES, or Texas Workforce Commission; therefore, data were relied on these sources, and might not have been 100% accurate.

Definition of Terms

These following terms are used throughout the study. To ensure clarity and understanding, these terms are defined as follows:

Public, Community College: A regionally accredited institution of Higher Education offering programs leading to an Associate degree (AA or AAS), or a vocational certificate, allowing transfer to 4-year university to complete a Baccalaureate level degree (Burnett, 2010). Public Community College is not-for-profit institution and is mainly funded by tax-payers money.

For-profit, private or proprietary college: An institution of Higher Education that earns a profit for its stakeholders/owners. It offers 2-year associate degrees, certificates, and/or 4-year Baccalaureate or graduate level degrees (Bognato, 2005).

CTE-Career and Technical Education, adopted by the THECB, aka vocational or trade programs.

Health CTE- Health CTE programs (academic and vocational training) for this proposed study include Surgical Technology, Physical Therapist Assistant, Diagnostic Medical Sonography, Dental Hygiene and Assisting, Nursing, Pharmacy Technology, Medical Lab Technology, Medical Assisting, Health Information Management, Echocardiography, Respiratory Care Technology, Radiologic Technology/Medical Imaging, Nursing, and Emergency Medical Services programs.

THECB-Texas Higher Education Coordinating Board overseeing all Texas colleges.

SACS-Southern Association of Colleges and Schools-Regional accrediting body for public colleges.

Graduation- It is the percentage of a school's first-time, first year undergraduate students who complete their program within 150% of the published time for the program. For example, it is three years for an associate degree completion at a two-year college (FAFSA, 2021).

*KPI- Key performance indicators-*A type of performance measure that helps assess how your organization is performing in these following categories: academia, finances, curriculum, faculty, facility, technology, transportation, and housing (Jackson, 2020).

Organization of the Dissertation

This document consists of five chapters. In this first chapter, a background of the issue was provided, outlining the research problem, research purpose, significance, and research questions. The second chapter provides a review of the literature, which analyzes a plethora of studies addressing different variables affecting students' choice to enroll in either for-profit colleges or public community colleges. The third chapter presents the methodology. The fourth chapter describes the findings derived from the data. The fifth chapter examines the findings and provided recommendations for future research and suggestions for the public community college system to increase enrollment in health CTE while maintaining the integrity of academia and job placement criteria for all health CTE students.

Chapter 2: Literature Review

The following chapter is an extensive review of the literature regarding two-year colleges. The first section delineated a historical overview of two-year colleges including the origin and causes of community college's presence, and the subsequent advent of for-profit colleges on the educational scene. In its first sub-section, FPCs and PCCs are compared in few key performance indicators, namely admissions data (enrollment patterns), academic outcomes, financial debt, faculty credentialing, health accrediting bodies and regional and state regulatory bodies and requirements. Following this subsection was a discussion of health majors by providing important statistics related to health majors, health occupations, salaries per hour, and differences among these occupations. The second section explained the theory used for this proposed study. The third section provided the college choice variables of the study and other additional key indicators that might have influenced college choice of students' enrollment in these institutions. Last section provided a conclusion of this chapter, summarizing it and assessing the current state of both types of institutions.

Historical timeline of two-year colleges

In response to the development of technology, mainly in the 20th century, American businesses started to compete on innovation in the new global economy even though the need was first identified locally. This competition was based on how well they could recruit, develop, and utilize the best talent in the world to develop new and improved business models, products, services, as well as the need to push forward scientific and technologic advances (Schray & Sheets, 2018). This resulted in ever-changing employer skills requirements and growing skills gaps at the levels of the workforce (Schray & Sheets, 2018). As employers and their talented partners (vocational and trade schools) responded to the evolving economy, the debate grew on

how federal higher education and workforce policies could have best supported their innovative approaches to closing the skills gaps. However, this was especially difficult on federal government making policies driven mainly on creating silos between private and public sectors in higher education, career and technical education, and workforce development (Jacobs & Worth, 2019). Postsecondary workforce development became one of the major innovations of the modern community college. In a workforce approach, curriculum became driven by local industry, and course delivery systems offered flexibility to meet the diverse needs and industry. Students started to experience a mixture of work-based and classroom learning. In response to the local needs, community colleges were created to respond to the economy, to enhance a national workforce agenda, and reach out to the global economy and eventually compete in its realm (Jacobs & Worth, 2019).

Early history of the community college concept

The two-year college concept came about as a relief to the four-year research concept. Instead of overwhelming the university with freshman and sophomore students who focused on career, these colleges were created to address their particular needs (Cohen & Brawer, 1996). Early federal policy, created to address the talent needs of the new industrial economy, promoted separate tracks for college and vocational education and training namely legislation establishing the Land Grant University (Morrill Act, 1862) and Smith Hughes Act of 1917 (Schraw & Sheets, 2018). These acts defined the role of vocational education and made it a separate track. The American Association of Junior Colleges took on a leadership role in the movement on terminal education and created a commission on junior colleges terminal occupations in 1939 to advocate for the employment-procurement mission of these institutions on a national level (Cohen & Brawer, 1996, p.215). After the Second World War, the

occupational mission of the community colleges was solidified on the national level through the GI Bill, which funded college education for many veterans. With President Truman came the formation of more community colleges. He supported the need for industry focused skills and promoted the need for health and medical professions through them. Below is a quote of his work skills' focus (Grubb & Lazerson, 2004, p.87):

To meet the needs our schools must train many more young people for employment as medical secretaries, recreational leaders, hotel and restaurant managers, aviators, salesmen in fields like insurance and real estate, photographers, automotive and electrical, technical and.....medical technicians, dental hygienists, nurses, nurses 'aides, and laboratory technicians

The Truman commission created the first associate degree program in nursing in 1951. The rationale for establishing an associate degree came about from the importance of acquiring a credential higher than a high school diploma but lower than four-year degree. Community colleges were the main vehicle for this associate degree (Jacobs & Worth, 2019). The growth of all of these occupations in the American economy brought community colleges to the forefront of federal policy. Between 1950 and 1975, the nation experienced a large expansion of community colleges, and its number grew more than 150% (Cohen, 1998, p. 187). By 1975, there were over 1000 community colleges enrolling five million students (Jacobs & Worth, 2019). This explosion in enrollment was attributed to the modern technologies of the time and investments from business organizations in workforce development. Then in 1982, partnerships between colleges and employers were forged to enhance talent and emulate skills to train students in the field of automotive like Ford, technology such as GE, and hospitals (Jacobs & Worth, 2019). Job Training initiatives such as Federal Comprehensive Employment and

Training Act (CETA), morphed into Job and Training Partnership Act to train workers dislocated by the economic recession (Jacobs & Worth, 2019). Carl Perkins Vocational and Applied Technology Education Act of 1990 separated academic and vocational preparation in high schools and defined vocational education as the preparation for employment in an occupation or a career requiring less than a four-year college degree. The separation between programs that prepared individuals for college and those that prepared them for careers was reinforced in the landmark legislation of the 1960's and 1970's (Schray & Sheets, 2018).

Following the Carl D. Perkins Act of 1990, the act was able to integrate academic to vocational education after initial intentions of keeping them separate. In 1994, the school-to-work initiative also attempted to improve and integrate academic and career preparation. This one worked on establishing strong partnerships, between secondary and post-secondary education, and creating portable credentials (school-to-work of 1994). In addition, federal workforce policy put a stronger emphasis on managing the transitions and retraining workers dislocated by industry restructuring and global competition. In year 1994, the goals 2000, known by Educate America Act, created the National Skills Standards Board (Schray & Sheets, 2018). These industry and occupational standards focused on front-line skilled occupations not requiring four-year college degrees (Schray & Sheets, 2018). Successive federal legislations leading to the current Workforce Innovation and Opportunity Act of 2014 (WIOA), focused on improving accountability through performance management systems (Schray & Sheets, 2018). As the nation moved further into the 21st century, the American economy continued to undergo a major restructuring from an industrial economy to an innovative-based economy in which employers increasingly competed primarily based on innovation.

Throughout history, colleges were placed mid-way between high schools and universities (Levin, 2002). Community colleges, according to Labaree (1997), are primarily an educational institution, and secondly a part of a stratified system. This stratification is subject to considerable influence from external pressures and societal conditions, including governments and economies (Levin, 2002).

The number of public community colleges has declined tremendously from 2001 to 2017 by 18 percent, whereas the number of private, for-profit two-year institutions have increased by 23 percent during the same years (The Condition of Education, 2019). During that time, the rise of for-profit colleges, where financial accountability, access to counseling and advising, and competitive faculty salaries were lacking, was exponentially growing (Jacobs & Worth, 2019). Nonetheless, their advent onto the national scene was driven by the consumers push to improve their income and secure employability (Jacobs & Worth, 2019).

Public and For-Profit Colleges ‘Overview’

The overall two-year college enrollment rate for young adults increased from 35 percent in 2000 to 40 percent in 2017. The private sector, colleges and universities now holds a third (32.9%) of the world’s total higher education enrollment (The Condition of Education, 2019). Ethnicity wise, in 2017, the overall college enrollment rate was higher for Asian (65%) young adults than for White (41%), Black (36%), and Hispanic (36%) young adults. By 2028, total undergraduate enrollment is projected to increase to 17.2 million students. In academic year 2017-2018, over two-thirds of the 1.0 million associate degrees conferred by postsecondary institutions were concentrated in three main fields of study: General studies and humanities, health professions and related programs, and business (The Condition of Education, 2019).

Enrollment Patterns. In fall 2017, the percentage of full-time undergraduate students who were under the age of 25 had dramatically increased at public two-year institutions (79%) than at private for-profit (45%) two-year institutions (The Condition of Education, 2019). At public two-year institutions, the percentage of part-time undergraduate students who were under 25 (61%) in fall 2017 was higher than at private, for-profit (37%) two-year institutions. The percentage of part-time undergraduate students who were ages 25 to 34 was lower at public institutions (22%) than at private institutions (34%). Similarly, the percentage of part-time undergraduate students who were ages 35 and over was lower at public institutions (17%) than at any private institutions (28 % each). The overall instructional mission of two-year institutions generally focuses on providing a range of career-oriented programs at the certificate and associate degree levels and preparing most of its students to transfer to four-year institutions (The Condition of Education, 2019).

Cost and Admission Comparisons. Comparing the cost of tuition between FPCs and PCCs, the public community colleges are more affordable (TWC, 2020). The average tuition and books cost of a two-year AAS at FCCs is almost \$65,000 whereas its counterpart at PPCs stands at \$29,000 (TWC, 2020). Though public community colleges most commonly have open admissions, generally, they set more restrictive/specialized admissions criteria for entry into health CTE programs. For example, admission into a health-related area would typically require ranking courses, pre-requisites, and high TSI (Texas Success Initiative) scores to allow for the identification of “the crème de la crème” in students to enroll (THECB, 2020). More importantly, students accepted into health CTE programs usually spend a year or so in developmental education courses, especially in math and reading (THECB, 2020). Eighty percent of students at public colleges take at least one developmental course as opposed to for-

profit colleges that usually circumvent these requirements (THECB, 2020). This factor delays completion of these programs in community colleges as opposed to for-profit. Public community college students tend to transfer to four-year universities at a higher rate than their for-profit counterparts do (NCES, 2018-2019). PCC students transfer at 30% whereas their counterparts at FPC's do so at only 13% (NCES, 2018-2019).

Most public community colleges are stringent in their health CTE admissions of students, because the number of clinical assignments and their corresponding accrediting bodies bind each of these programs, so admission into these programs is highly competitive (THECB, 2020). However, for-profit colleges tend not to have any specialized admissions requirements. More importantly, these institutions tend to accept interested students into the aforementioned programs without checking for students' academic aptitude, especially in math and reading, and without successful completion of any of the pre-requisites such as medical terminology, Anatomy and Physiology (NCES & THECB, 2020).

Retention and completion rates. At two-year degree granting institutions, the overall retention rate for first time, full-time degree seeking students who enrolled in fall 2017 was 62 percent. The retention rate for public two-year institutions (62%) was lower than the retention rates for private, two-year institutions (72%) for the first year of academic training (NCES, 2020) but graduation and employment at FPCs are less by a minimum of 20 percentage points than PCCs (NCES, 2018-2019).

Public community colleges offer a variety of services, including academic and career counseling, tutoring, and development education, as part as their effort to respond to a wide range of students' levels of readiness mainly defined by the state supported TSI, Texas Success Initiative (THECB, 2020). For-profit educational institutions offer the same health programs and

cater for almost the same type of students, such as females, older, single parent, and employed (NCES, 2018-2019). However, these same institutions do not generally offer any extensive student services that help with retention and completion (NCES, 2018-2019).

Faculty Credentialing. Not only do FPCs and PCCs differ in academic performance measures but also in faculty credentialing, student to faculty ratio, total number of students admitted into the health program, just to name a few. As reported by THECB and other state and national sites about the different key performance indicators in colleges, CTE faculty hired by PCCs are required to have licensure in the field they are teaching, renewable on a yearly basis, three years of paid field work, and teaching experience whereas FPCs health CTE faculty may not have a current licensure or any paid work-related experience (EPEC, 2020).

Health Accreditation Boards. Health accreditations of the health CTE programs at PCCs limit their admitted students' cohort for mainly two reasons: clinical instruction needs to be at the most eight students to one faculty in only one health program whereas the remaining health programs are bound by two students to one faculty so students receive the best clinical instruction and experience with their corresponding preceptor at the different health facilities. On the other hand, the FPCs, since they are not accredited by these stringent accrediting bodies, can admit large numbers of students into any of the health programs, but eventually fail to guarantee rigorous clinical experience for these large groups of students (EPEC, 2020). Accreditation requirements at FPCs are different and less demanding than those at PCCs, so when there is a shortage in healthcare professions, FPCs are quick to address it because they are less bureaucratic and do not have to respond to several regulatory agencies such as those for the PCCs (Deming et al., 2012). Thus, enrollment figures in health programs at FPCs have doubled in the last decade (Deming et al., 2012).

Curriculum and State and Regional Accreditations. FPCs do not usually have to meet the Workforce Education Course Manual (WECM) or other THECB and SACS requirements in the state (NCES, 2020). Additionally, the accrediting bodies used to allow these health educational programs to exist are completely different from the ones overseeing programs in public colleges in the state of Texas. FPCs health programs are mainly accredited by the Accrediting Bureau of Health Education Schools (ABHES); whereas PCCs health programs are accredited, each by their individual health-accrediting agency respectively (NCES, 2020). Both FPCs and PCCs recognized the importance of health profession and its occupations; as such, they both created and designed curricula to address this need.

The next few paragraphs presented the importance of health and health professionals in the nation and impact of any health professionals ‘shortage on the community, state, and nation’s levels.

Need for Health Professionals and Medical Personnel

Healthcare is the third economic driving force and is a fast-growing occupation (Bureau of Labor Statistics News Release, 2020), especially right now in the times of the Corona virus pandemic. It has been reported that most new jobs with the fastest job growth will occur in healthcare practitioners, technical occupations, and healthcare support occupations (BLS News Release, 2020).

As population ages, projected changes in current demographics will drive the expected growth in the healthcare occupational job group fields. U.S. employment is projected to increase 6.5% during the 2014-2024 decade, from 10.5 million jobs in 2014 to 160.3 million jobs in 2024. Healthcare support occupations, healthcare practitioners, and technical occupations are projected

to be the two fastest growing occupational groups, adding a combined 2.3 million jobs, about 1 in 4 new jobs in this decade (Bureau of Labor Statistics, BLS, 2020).

For instance, healthcare support occupations such as Medical Assisting (MA) and Physical Therapist Assistant (PTA) and technical occupations such as Sonography technician, and X-Ray technician, are projected to add the newest jobs and be the fastest growing occupational groups (BLS, 2020). Healthcare practitioners, such as nursing, are the only occupational group projected to add more than one million jobs in this decade. All of these cited programs are taught at the different Texas Public community colleges and at major for-profit educational institutions in the state. In addition to adding the most jobs in all major groups, the healthcare practitioners and technical occupations group had a median annual wage of \$61,750 in May 2014 (Bureau of Labor Statistics, 2020), which is much higher than the median wage for all occupations of \$35,540. Higher wages for healthcare practitioners and technical occupations reflect the higher levels of education and training typically needed to work in those occupations, compared with healthcare support occupations. Table 1 depicts current numbers of employed workers, mean hourly and mean annual wages for healthcare practitioners and technical occupation workers for the country, state and region, reported by the Bureau of Labor Statistics (2019).

Table 2.1

Healthcare Practitioners and Technical Occupations

Geographical Dist.	Employment	Mean Hr. Wage	Mean Annual Wage
National	8,673,140	\$40.21	\$83,640
Texas	676,860	\$37.73	\$78,470
El Paso	18,910	\$33.90	\$70,510

Overall, it can be observed that mean hourly wage for the region continues to be depressed against other geographical sectors. Though the state of Texas fared better than El Paso in mean wages, both the state and the county experience shortage of healthcare professionals compared to the nation, overall. There is less than a part-timer in healthcare per 1000 El Pasoans, compared to almost 9 per 1000 Texans and 103 Americans nationally.

If we were to focus on those healthcare occupations that play even a “support” role, the wages across the country, state, and region would still be above the minimum wage rates, while a substantial portion of workers in the region would surpass the 20K mark. Table 2 (BLS, 2019) below denotes these numbers.

Table 2.2

Healthcare Support Occupations

Geographical Dist.	Employment	Mean Hr. Wage	Mean Annual Wage
National	6,521,790	\$14.91	\$31,010
Texas	543,430	\$12.85	\$26,730
El Paso	18,910	\$33.90	\$70,510

Support occupations such as medical assisting, physical therapist assisting, and nursing assisting tend to be required to do more and work harder for a fraction of the pay in relation to those from the-technical and practitioner’s occupations. Nationally, their mean hourly pay is \$14.91, whereas the state’s is at \$12.85, but El Paso registers the pay at \$10.88 per hour, far less than the acceptable livable wage of \$12/hour, set forth by the County’s economic entity, Bordepex (Table 2.2). It is worth noting that practitioners and technical occupations do earn almost 62.9% more than any support type occupation in healthcare on the national level. Delving locally, El Paso’s wages are dismal compared to the national and even state levels; nonetheless,

practitioners in El Paso are adequately paid for a two-year degree in the technical field, compared to a degree in support occupation in healthcare, comparing support to technical occupations in El Paso to state and national numbers.

Demographics, specifically rapid population growth and aging, continue to be the primary drivers of increasing demand from 2018 to 2033 (New AAMC Report, 2020).

According to Texas Health and Human Services (2019), the state of Texas has been identified as reporting severe shortages in the primary care, dental health, and mental health fronts.

Recognizing the need of the community and the labor shortages, the FPC's have targeted health occupations and expanded their academic services to offer these health curricula.

Previous studies have attempted to understand this phenomenon by investigating some of the reasons for this explosion in numbers from these proprietary colleges (Cellin, 2020). Few research studies have discussed factors such as geography and closeness of these colleges to most minority and disadvantaged students' residence (Soliz, 2018). Other research studies have explained it through easy access to financial aid and loan awards to pay for tuition for potentially enrolling students (Baum, et al., 2013; Cottom, 2017; Iloh & Tierney, 2013; Looney & Yannelis, 2015). Furthermore, other studies attributed the ascent of FPCs to support service offerings designed to help students with their academics (Deming et al., 2012; Fountain, 2019; Schneider, 2015). However, none of these studies delineated all of these factors combined, whether causally or associatively; most importantly, none had linked them to students' choice into either FPCs or PCCs institution.

Theoretical Framework

Overview of the Theory

The Institutional Theory of Organizations (ITO) is a prominent perspective in modern organizational research. It embodies a diverse group of theoretical and empirical work focusing primarily on cultural understandings and shared expectations (David, Tolbert, & Boghossian, 2019). ITO, accompanied by Resource Dependence as a sub-theory, guided this study because it was able to identify and examine variables, otherwise named internal and external factors, and their relationships in identifying key performance indicators in both institutions, FPCs and PCCs. Institutional theory, overall, is limited to higher education when it is presented by itself (Cai & Mehari, 2015), but ITO is better understood within higher education when the theory is expanded by other sub-theories within it, such as resource dependence, ethnic and gender diversity, institutional logics, institutional entrepreneurship, among others (Cai & Mehari, 2015).

Institutional Theory in higher education is dominated by the new institutionalism of the 1970s and 1980s. DiMaggio and Powell (1983) explained that the new institutionalism within the theory focused on institutional change and the relationship between organizations—in this case, FPCs or PCCs, and their internal and external factors—especially when they are competing for resources and students in a response to consumerism and marketization. Some of these internal and external factors include the following: “key suppliers, resource and product consumers, regulatory agencies, policy and management issues, learning-centered assessment, student experiences, and other organizations in the field” (DiMaggio & Powell, 1983, p.148). In addition, these researchers addressed these external and internal factors while paying attention to “the roles of actors or the students as the primary consumers of these institutions” (DiMaggio & Powell, 1983, p.148). Another researcher used different aspects of Institutional Theory such as

combination of old and new institutionalism, institutional entrepreneurship, and institutional logics to understand issues raised within higher education institutions (Tight, 2013). The studies applying new institutionalism, as in Webber (2012), did corroborate the position that organizations are embedded in highly institutionalized environments dominated by social rules, and” taken-for granted assumptions” (Cai & Mehari, 2015, p. 10).

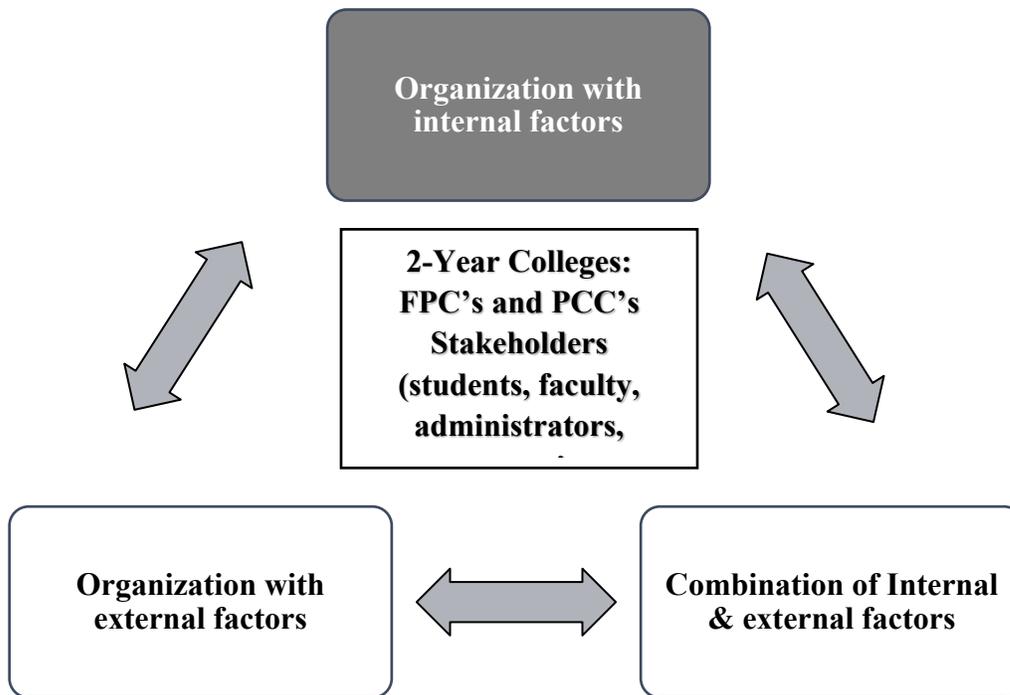
Theory Used in the Study

This theoretical framework, guided by Institutional Theory of Organizations, mainly new institutionalism, and accompanied by Resource Dependence Theory (Tolbert, 1985 & Townley, 1997), dealt with three aspects in this study: 1) how to conceptualize the environment of higher education institutions, FPCs and PCCs, 2) how to react to these internal and external factors, and 3) how these institutions were capable of responding to these factors. Internal factors are translated into these variables dealing with support services, admission practices, size of the college, gender of enrollees, programs of study, credentialing of faculty and accreditation agencies, among others. The external factors are mainly regulatory agencies, accrediting bodies, industries, government funding, and marketing. Then, a combination of both types of factors, intertwined at the institutional level, is likely to influence these two institutions and their stakeholders, namely students to select either institution. All three aforementioned are intertwined and mutually inclusive. The consumer, being the student or the learner, was and is the most influential player in this study framework. The learner’s relationship to the institution is dependent on tuition cost, size of the college, level of financial access and awards, academic preparation, retention, and academic completion or graduation. The learner is also influenced by the external factors that drive these educational institutions, mainly government funding, accreditations, and regulatory agencies. The learner’s enrollment choice to either institution is

dependent upon these factors and their interactions together on the personal, institutional, and regulatory levels. Figure 2.1 provides the dynamics of these interrelationships.

Figure 2.1

Theoretical Framework of the study



The figure depicts the relationship of two-year colleges to internal, external, and combined factors *vis-à-vis* students and their informed choice in selecting either institution for their health CTE major. Though the main focus of this theory is the higher education institution, three levels will have to interplay simultaneously to impact the institution. First, the requestor (the student) focuses on the time of the award, complexity of his goal; he/she will also have to pay for the service, training usually without knowing the quality of the educational program, hence picks up on external signs of quality such as advertisements, price, reputation, hearsay, marketing, and convenience (Reale & Seeber, 2010) to enroll. Secondly, at the organizational

level, skills, competencies, training, and tools in management are assessed and its internal governance is examined for any type of problems or flags. Thirdly, various interactions between organizational and resource implications and external pressures are measured. Disciplines such as health CTE have a great influence on the organization's response because they affect many aspects of the institution and resource contexts (Reale & Seeber, 2010). By offering health CTE majors, institutions cater for the consumer and respond to the market economy at the college level. As such, the instructional delivery then is shifted (Webber, 2012) from a classical instruction to non-traditional learning where students construct knowledge for themselves (e.g., attending clinical and completing labs). Measurements of this learning-centered assessment include retention, completion, and subsequent job placement. ITO in this study is felt and experienced at every level by influencing the student to select according to either internal, external, or combination factors or variables.

Survival of an organization, be it for-or non-profit, depends on its responsiveness to external factors and its responses to students' needs. When organizations do not respond to the consumer's demand and its market, isomorphism sets in. The latter is defined as the process that compels organizations to copy others that are in the same conditions. Competitive isomorphism of both entities generated by market competition was key to the performance variables to be studied (Hemsley-Brown & Oplatka, 2010; Reale & Seeber, 2010) through marketization and consumerism of the higher education institutions, and all of their external and internal factors.

Using ITO as a theoretical perspective would allow me to examine the degree of fit between institution (higher education, in this case) and the students' needs, the adaptation of marketization and globalization of the economy to the local students' needs, and the efficiency and the academic rigor and quality of the programs and their outcomes. As explained by Scott

(2001), an “Institution is composed of cultural, cognitive, normative, and regulative elements that together, with associated activities and resources, provide stability and meaning to social life” (Scott, 2001, p.48). For the purpose of this study, organizations are synonymous to institutions.

Theory’s Impact on Colleges

In higher education, ITO may explain how colleges and universities come to resemble each other in terms of types of institutional goals, ethnic backgrounds of students, SES of students, even when organizations under comparison differ in funding opportunities, governance, bureaucracy, open vs. closed systems, and governance among other factors. Existing studies using this theoretical framework in higher education have focused on the chronological adaptation of ITO in developing four-year universities (Meyer & Scott, 1983). Reale and Seeber (2010) focused on case studies to describe the impact of ITO in its rigidity on institutions but all focused on four-year higher education institutions. This research study examined health CTE students’ academic performance measures for both FPCs and PCCs and compared them in relation to gender, ethnicity, size of the college, cost, and level of indebtedness as the driving variables to the ultimate selection of one college type over another; and as such, described the influence of ITO’s internal and external factors at two-year colleges on students’ enrollment and completion.

College Choice by Students

Multiple variables influence student’s choices in enrolling in either public community colleges or for-profit colleges. These are driven by external and internal factors of the higher education institutions delineated by ITO. These decisions define students’ navigational processes in post-secondary institutions (Wickersham, 2020) and are driven by the following variables:

admissions' practices, payoff and debt, college's fit and admission practices, transferability, geography, flexibility, student services, student engagement, marketization, and college size. However, this section only focused on the most influential factors to these students' college choice that ultimately drive these academic and employment outcomes (completion rates and lower levels of indebtedness). In response to both community colleges and for-profit colleges' implicit competition, and in reviewing logistical and programmatic criteria in CTE health programs overall, seven factors for college choice and selection have been identified and common to institutions:

- 1) Admission Practices: Students' population including minority, gender, military, older vs. younger (open admission vs. specialized admissions in health CTE programs, Admission's test such as TSI or Accuplacer)
- 2) Financial aid provided by the federal government,
- 3) Retention, completion, and graduation
- 4) College size
- 5) Admission criteria to include academic pre-requisites, decentralization of services such as support services (Cabrera & LaNasa, 2000)
- 6) Student engagement
- 7) Student-consumerism and marketization aspect of Higher Education (Eisenberg, 1997)

The first four factors, (1-4), were targeted within this study and the other three factors provided additional input to the study. Nonetheless, all drove students' college choice in either institution. Both types of two-year colleges focused on career and vocational programs that require a one-year certificate or two-year associate degree in CTE, mainly health. Health majors in colleges addressed the consumer's need for secure employment, lucrative career and the

employers' staffing of skilled and qualified technicians, assistants, and medical personnel. More importantly, health is targeted because it ensures general health of the community and promotes learning and education in otherwise disadvantaged populations and counties in the state and across the country.

Admissions Practices including Gender and Ethnicity

Of late, a greater number of low-income Students of Color enrolled at for-profit institutions and in the process are placed at a considerable risk of debt (Iloh & Tierney, 2013). Is it possible that these for-profit institutions may have tricked novice students into buying a poor product? Unfortunately, there is an overall scarcity of research literature on FPCs. The influence and ethics of FPCs have been debated anecdotally but empirical research is scarce. As such, this study hoped to understand students FPCs choices by examining the outcomes of completers of FPC's enrollees in comparison with their PCC's counterparts. Comparing admissions practices of for-profit and community colleges admissions practices, Iloh and Tierney (2013) aimed at understanding the college choice of prospective students and presenting both commonalities and differences in both PCCs and FPCs.

While searching for the best college fit, students tended to look at cost, academic quality, post-graduation career prospects and opportunities, and quality of student life (Cottom, 2017; Iloh & Tierney, 2013). Students' search phase was largely dependent or driven by socio-economic factors. Compared to their less affluent peers, more affluent students usually relied on private counseling, college experience being a match to their life goals, without worrying much about geographical location of the educational institution (Iloh & Tierney, 2013). The less affluent students usually did not get properly advised to make the best decisions for college's

enrollment. The majority did not have the luxury of a car to move from one side of the county to another to select the better choice of college, rather the nearer to their home.

Both FPCs and PCCs do enroll more women than men, generally, and women complete their associate degree, on the average, within three years. For every 12 males enrolled, there are 18 females at the two-year colleges (NCES, 2019). Though both PCCs and FPCs tend to attract the same type of students; non-traditional, single-parents, older than 24 years old, with no access to transportation, who look for convenience and affordability, a few characteristics of FPCs appeal to these non-traditional students, namely loans offering to pay tuition, and flexibility of class schedule. They tend to be absent more often than the PCCs students, and be very mobile, stop out and then re-enroll, with no sanctions or restrictions in FPCs.

Nearly all students at FPCs can be classified as non-traditional. A disproportionate number of students are above the age of 24 (The Condition of Education, 2019). Only 75% of undergraduate students at FPCs have high school diploma compared to 85% of community college students (The Condition of Education, 2019). With respect to Latino males, high school achievement and family income are highly significant to college persistence levels. In addition, factors such as being away from home, low crime rate, and job placement were less likely to facilitate persistence when selecting college as studied by Wood and Urias (2015). Furthermore, if Latino students obtained a GED diploma rather than a high school diploma, then their college persistence was also very low (Wood & Urias, 2015).

Soliz (2018) reviewed the geographical location and the timing of newly opened for-profit, proprietary colleges on students' enrollment and outcomes at community colleges, and whether timing of opening impacted enrollment and outcomes. In addition, Soliz (2018) explored whether having a new for-profit college open up nearby affected community colleges'

enrollments as well as programs' awards in computers, service, education, health and business-related fields. Findings of the study showed 1) no effect on total community college enrollment for Black and Latino students or for any other sub-group of students, and 2) no effect on completion of an associate degree or certificates in all majors cited except those from health-related fields.

In summary, students at FPCs tend to a) be minorities, b) have a weak academic background, c) come from a low income household, d) be older than 21, e) be financially self-sufficient, f) be first-generation college students, g) demonstrate low civic engagement, g) be female, and h) be less politically involved (Schilling, 2013).

Financial Aid

The second influencing variable to college choice is financial aid. For-profit colleges generate more loans (Baum, et al., 2013). Apparently, FPCs appear to be costlier for taxpayers and students alike. Although they account for 10% of undergraduate enrollments, the FPCs students receive 20% of Pell Grant and 42% of GI Bill funding (Baum, Jennifer, Pender, Matea, Bell, & D'Wayne, 2013). More importantly and alarmingly, FPCs generate almost \$43,383 in federal student loan debt for every credential awarded, compared to \$16,247 at PCCs (Cannon, 2016). Nearly 16% of FPCs student borrowers' default on their loans within three years, compared to roughly 12% of borrowers at public PCCs (Baum, et al., 2013). Given that the significant cost in a for-profit institution's educational preparation for one of their students, it is not surprising that the outcomes of FPCs are often framed against a backdrop of student debt, and unlikely repayment of debt. On average, students of FPCs are more likely to take out Title IV loans, have higher levels of indebtedness, and lower repayment rates than their PCCs counterparts (Looney & Yannelis, 2015).

Outcomes of debt and repayment are closely connected to completion rates, noted below as the third influencing factor to college choice by students. Students who default on their loans do not complete their associate degree (Deming, Goldin, & Katz, 2012). Even if students complete their degree program, the ability to gain employment is crucial to repayment (Deming, Golding, & Katz, 2012).

Retention, Graduation, and Employment

The third influencing variable is retention, graduation, and subsequent employment. The concept of “Education pays” is really telling. According to National Center for Education Statistics (2015), the median annual earnings of young adults, ages 25 to 34, with less than a high school degree was \$23,200, and the unemployment rates of young adults for the same age group was 51.1% and 7.4% for associate degree completers (Caruth, 2018). The retention rate for two-year completers is around 29%, clearly retention rates are not the best means for assessing college or student success (Caruth, 2018). Graduation rates in two-year public institutions showed an increase whereas in for-profit two-year institutions reported reduced graduation rates (Caruth, 2018).

Though FPC’s retain students in their first year of their associate degree, they tend to drop out and not complete their degree. Based on empirical research (Deming et al., 2012), FPCs perform worse than PCCs on every one of these measures. Performing badly on each of these measures increases the drop-out rates and the default rates at the FPCs (Deming et al., 2012). Proponents of FPCs, however, hail them as being the innovative, one stop-shop educational entity for under-represented students, in regard to their socio-economic status (SES), ethnicity, and gender. They are even considered the enablers of meeting these students’ needs in terms of employment and job placement. These proponents of FPCs are usually powerful political

lobbyists and stockholders, but research, overall, is still scarce about students' outcomes at FPCs compared to those in PCCs.

Focusing on gender, women had higher completion rates across all types of institutions than men did in 2016 (Long, 2019). More importantly, 43.2% of men completed within six years of enrollment in their higher education institution compared to 47.5% of women; even income is stratified between genders when it is related to college completion. Earned income is inequitable between men and women. Although male students do not graduate at the same rates as female students, males tend to earn more than women, almost \$8,000 more per year (Long, 2019).

The notion that “what a student studies for” is more important than “where a student studies” especially when seeking a certificate or an associate degree is difficult to account for. This notion, at best, lacks all of the pre-requisites of key academic outcomes such as credentialed faculty, curricula, academic rigor, and accreditation (Schneider, 2015). In addition, this variable is closely associated with the growth and student characteristics of FPCs and PCCs. The count for degree-seeking undergraduate students attending FPCs increased more than ten-fold, from roughly 150,000 to over 1.5 million between the 1970's to the 2000's, as did the enrollment including part-time, and non-degree enrollment from 250,000 to almost 4 million (Baum, et al., 2013). Associate degrees awarded by FPCs increased at a rate six times that of community colleges, and the percentage overall (Baum et al., 2013). There are specific differences between proprietary, for-profit colleges and PCC's when students make their choice to enroll in either. Aside from the support services available at PCCs such as tutoring, mentoring, academic counseling and advising for these specific health CTE programs, there is stringent academic preparedness for the health CTE courses, in particular at PCCs, whereas this variable is completely bypassed at FPC's. Applying intrusive advising and strong tutoring leads to increased

academic outcomes in remedial courses towards students 'preparation in PCCs. Tutoring and remediation is not provided at FPCs. These student support interventions are by-passed at for-profits (Thomas, 2017). Other differences that are spearheaded by PCCs as opposed to FPCs are health career orientation and specialized admissions already listed above (Harvard, 201; THECB, 2020).

College Size

The fourth influencing variable about an organization is college size. The size of the campus can definitely affect a student's college experience. A large college of 30,000 students may overwhelm or excite students. On the other hand, a small college of 200 students may feel friendly and less isolating (College Data, 2021). According to College Data (2021), there are three definite size categories. Small colleges are those with fewer than 5,000 students. Private colleges of two and four years are part of this category. Many FPCs and PCCs fall into the medium size category, between 5,000 to 15,000 students. Large colleges have more than 15,000 students such as the large district community colleges of the metropolitan areas of the state. Institutional size is independent of class size. Student to faculty ratio denotes the average number of students present in the classroom with one faculty during instructional delivery. It is reported that a 32% reduction in class size increases student achievement and success but that does not mean that small colleges necessarily have smaller size classes compared to large colleges (College Data, 2021). Surprisingly, socialization at the college is the selector of which college type the student enrolls into and not the actual size of enrollees at their selected college (College Data, 2021). Data by Aiken, Hjorth-Jensen, and Caballero (2020) showed that students who integrated in their social and academic communities regardless of their college size did eventually graduate. In another study, Gramling (2013) identified five characteristics that

predicted for-profit university graduation odds at a mid-size higher education institution. Size of institution was not one of the five characteristics. However, by enlarge, PCCs are larger in number of enrollees than FPCs. The former tends to belong to the large and medium size categories whereas FPCs belong to the small size category. Comparing performance measures of these two types of colleges in relation to size is planned for the present study.

Recruiting and Marketing

The fifth and most powerful influence for any organization or institution are their recruitment and marketing techniques. FPCs have been accused of deceptive marketing and retention-centered practices (Hodgman, 2016). Their recruiters usually were encouraged to misrepresent teacher qualifications (for example, faculty lacking licensure in a field they are teaching) and job placement statistics (very difficult to find these data at the FPCs, especially after the Trump Administration reversed Obama's Gainful Employment accountability requirements). These same recruiters provided misleading or exaggerated potential hiring salaries upon graduation (FPCs' graduates are seldom selected for hire over PCCs' graduates) (Cellin, 2020), as well as misleading transferability of credit hours to four-year universities. FPCs credits are not accepted for academic transfer to four year-universities, if they are not part of the core courses (THECB, 2020). For-profit colleges target low-income areas and Latino students and communities who suffer the impacts of systemic racial, gender, and capitalist oppression (Bernal, 1998). Latina student college choice is driven by proximity to their home. Female students are most represented in the FPCs than in PCCs (Cottom, 2017). Recruitment of Latin students into FPCs starts at the high school level and leads them to believe that certificates and vocational programs usually have greater values than other degrees. More importantly, Latin populations are more vulnerable to the misinformation and marketing strategies that drive for-

profit recruitment (Dache-Gerbino et al., 2018).

Incentivizing FPCs' employees to enroll students in FPCs not only creates a boost to enrollment but also a deceitful marketing strategy to inflate the students' enrollment under false pretenses (Deming, et.al, 2013). The more an employee enrolls students in FPCs, the higher their monetary commission (financial incentives) will be (Cellin, 2020). FPCs have invested heavily in marketing materials, many of which are strong on flash but low on substance (Cellin, 2020). Not only that, they spend large amounts on online advertising and sponsorships. In contrast, community colleges usually rely on lengthier data-driven marketing resources that usually inform and educate students about their options; therefore, PCCs are more forthcoming when it comes to advertisement and marketing of their programs. Historically, FPCs relied on online education offered to entice the student to enroll in programs amenable to their work, residence, and flexibility (Deming et.al, 2013). Almost 80% of FPCs students enroll in an online program, this is key to increasing enrollment especially in a public health crisis such as COVID-19.

Engagement, Retention, and Motivation

The sixth influence is student engagement, retention, and motivation. Student engagement is fundamental for student success in college (Caruth, 2018). There are five yardsticks for predicting student satisfaction and academic success, which are the 1) degree of success demands, 2) depth of student-faculty relationships, 3) level of inspirational scholastic experiences, 4) quality of a helpful atmosphere, and 5) intensity of a caring college environment. According to Caruth (2018), the more students are integrated within a college, the higher is the degree of student satisfaction and academic success. Therefore, student success is linked to student engagement (Caruth, 2018). Student engagement is linked to self-regulating behaviors, mindfulness, and faculty-student interaction. Based on data, retention numbers and rates do not

provide incentive for graduation though these are usually considered the measure for college success (Caruth, 2018). Generally, students stop out for financial or childcare reasons; not to mention weak academic preparation. College student success also involves self and course assessments, mindfulness, study skills, and faculty preparation. For-profit students have a higher probability of staying with a program through its first year (Deming et al., 2012). Early persistence translates into a higher probability of obtaining a degree or certificate in a one or two-year program. Certificate seekers starting at FPCs are almost 9 percentage points more likely to gain a certificate than at PCCs (Deming et al., 2012); however, students at PCCs tend to graduate at a higher rate than at FPCs. Additionally, students at FPCs do not transfer to four-year universities as the 80% of PCC students do (EPCC Dashboard, 2020).

The learner as a consumer and consumerism

The seventh influence is the consumerism of the student and the response of higher education institution to the economy and its market. Typically, health CTE students are driven by the knowledge that the consumerism aspect of the higher education institution and its response to industries are the driving force to their enrollments and subsequent acquisition of a licensure and employment.

Student-consumerism drastically affects classroom expectations, behaviors, and outcomes for students and educators alike (Eisenberg, 1997). The burgeoning concept of student-consumerism is supported by the marketization of higher education, where the political and social environment in which higher education is embedded has tended to emphasize the virtues of the markets, competition, and private initiative, vis-à-vis, the public intervention in higher education (Teixeira & Dill, 2011). Health CTE is highly embedded in the economic need, as healthcare is the third leading industry in the US.

The reliance on marketization of higher education and its focus on consumerism picked up by the students have limited them pedagogically which have also led to low students' outcomes (Molesworth & Nixon, 2009). Those outcomes or performance measures are translated into completion, graduation, and licensure passing rates (Molesworth & Nixon, 2009). The marketization of higher education as a business and the definition of the student as a consumer diminish the quality in their college experiences (Harrison & Risler, 2015). If institutions of higher education act like corporations, their students are positioned to be consumers of a private commodity that exists to facilitate their personal economic advantage and gain, then, consumerism tends to become a main player to diminished learning of students at colleges (Harrison & Risler, 2015).

The decision to pursue higher education and the decision of the prospective students to enroll in either private, for-profit, or public community colleges stems from institutional fit and support services provided to the students. Institutional fit is translated perhaps as flexibility of schedules of classes and/or labs, weekend vs. weekday classes, online vs. face-to-face instruction, geographical proximity of the institution to their house, etc. Support services include tutoring, assistance in registration and admissions, IT and technological help, financial aid assistance, and degree plan pre-requisites. Institutional fit and support services play critical roles in college selection and may impact student success (Cox, 2005).

With the advent of biomedical technology and workforce needs to adapt to this marketization, community colleges started thinking globally about the need to produce high technologies targeting economic demands by supplying the most adequate and equipped workforce, especially in the health field; hence, the need by the colleges to market their curricula and address consumerism personified by the college student as the ultimate consumer. As a

result, education was directed to the marketplace, and the needs of business and industry kept receiving high priority in educational programming (Levin, 2002). This educational programming centered mainly on customized curricula, vocation, and career and technology (Levin, 2002).

The private, for-profit, colleges picked up on this consumerism and capitalized on it by meeting their needs (Callender & Daugherty, 2018). The bottom line is that both types of colleges are grounded on economic values, justified as efficient and productive (Levin, 2002). Both restructured and targeted labor, outcome measures, technology, and marketization. Therefore, colleges offer what is marketable. The student-consumer is really a mobile learner. They have jobs, move, and then get another job so they get trained, they attend night classes, and the majority have children (Levin, 2002). To respond to the market and to the student's consumerism, both FPCs and PCCs needed to become learner-centered, practical, and at the same time, address the needs of the employers. Education has now become a business and ever evolving into the marketplace.

The argument for greater student choice in a more marketed higher education system holds that if students are converted into empowered and self-interested consumers, they will be able to make choices that better match their interests and those of the society because, then, they have a direct interest in the outcomes and the power to get higher education institutions to address students' demands (Callender & Dougherty, 2018). However, this factor is not always translated unto the business sector. In a recent study, employers were provided with lists of schools in their immediate geographic area grouped by type and were asked to describe how familiar they were with them. Roughly, 76% of employers reported that they do not know much about FPC's as opposed to 41% of PCC's (Hagelskamp et al., 2013).

Liu and Belfield (2019) studied the labor market gains for students who enrolled at FPC's after beginning their postsecondary education at PCC's. They found out that students in FPC's do have lower opportunity costs in terms of foregone earnings while enrolled in college. Similarly, they tended to also have lower earnings growth after college. In addition to their higher tuition and fees, students graduating from FPC's experienced lower academic and wage gains.

Two-year college students carefully assessed and selected pathways in light of their complex lives and fluid educational goals. To complement students 'strategic decision making and help them overcome possible challenges associated with any given pathway, institutions were able to offer a clear and holistic approach to empower and inform students to progress toward the endpoint they desire (Wickersham, 2020).

Current State of U.S. Colleges and Students

The years 2020 and 2021 have been challenging in so many ways but particularly in healthcare and education. The COVID-19 pandemic has crippled the world and affected its global economy, health of the masses, and identified all of the vulnerabilities of all countries and their governmental sectors. The U.S. has and is carrying a major brunt of these vulnerabilities and seriously weaknesses. It is hard to imagine that the U.S, the most powerful country in the world, has been grappling to find enough surgical masks to fight the corona virus transmission. It has showed that socio-economic inequities kill minorities mainly African American and Latin groups at a higher rate than whites when it comes to COVID-19 (CDC, 2020). It also is killing males at a higher rate than females (CDC, 2020). This viral infection, corona, makes the government and population of the U.S realize, though we pride ourselves to be highly technological, that the U.S. government was and still is not able to sustain WIFI capabilities for

educational institutions and businesses as corona virus forced almost all educational institutions to pivot to online instruction, supported via online networks. The government still needs to respond to these inefficiencies in a fast and strategic manner. Worst of all, it made us realize that our healthcare system does not have the adequate personnel to treat and manage sick people with COVID-19; the U.S. has had a shortage of respiratory care therapists (two-year AAS prepared graduates) and nurses (two-year AAS or one -year certificate prepared); both occupations are needed to combat COVID-19. Visualizing this dismal image of our country during the time of the pandemic naturally affects the educational sector as well, in its two statuses, the for-profit and the public. Therefore, differences between the two entities become more pronounced now more than ever, and while presently FPCs seem to be experiencing high enrollment of students, the PCCs are seeing dwindling enrollment numbers. The reasons are basically attributed to the variables listed in this chapter; the pre-existing online learning in FPCs, deregulation of the federal government and lack of accountability by the DOE of the Trump administration add on to the mix. For example, advertising budget during the pandemic is not affected in FPCs as opposed to PCCs (Cellin, 2020). However, high enrollment is yet to be translated into high earning gains and graduation rates of FPCs students as documented above in the literature. It will be worth studying the completion and graduation outcomes of these students post the pandemic as well.

Regardless of the pandemic and its impacts, studying and comparing proprietary colleges' influence on enrollment and completion of health CTE students places the importance on competition in perspective. Ultimately, the country and the state need skilled healthcare workers, and enrolled health CTE students need to know that they will eventually receive the proper academic preparation in order to successfully complete licensure and subsequently be employed. Currently, community colleges are not meeting the needs of these consumer students,

whether this need is flexibility of course offerings, scheduling, geographical location, or catering for a specific type of students (adult, non-traditional). If the community colleges want to compete and maintain their high enrollment of students and academic rigor criteria to graduation, then they will have to understand and meet the needs of these students. These students need to experience a degree of fit with the institution (Claybrooks & Taylor, 2016).

A college degree is one of the few paths available for low-income students to achieve economic viability (Yuen, 2019). Leaders in government and higher education need to reinvest in the future of Pell Grant recipients, or they risk subjecting many of these students to lives of financial instability (Yuen, 2019).

Although PCCs may provide better education at lower cost, the demand for higher education is likely to outpace state funding, regulation, and accountability. Many students who attend for-profit colleges are not academically strong to attend a selective institution; thus, this relevant comparison of costs and benefits for individuals who attend FPCs will often not be a licensure as an outcome. The student who graduates from a high tuition FPCs with substantial debt, and who does not have a steady employment will quickly encounter financial problems. Additionally, the relative performance in terms of completion rates, default rates, and labor outcomes data of those having attended FPCs is troubling at best. This study will help shed light on these issues and assist students with their college selection and subsequent success in any health CTE program chosen. More importantly, data from this study will help inform college administration about how to circumvent original low enrollment, upkeep licensure outcomes, and reverse decreased state funding by facilitating student access, admission, and duration of program completion so for-profit colleges cease to become a premier choice of these students to enrolling into higher education.

Summary

Supported by the ITO's theoretical framework and the college's institutional responses to both internal factors such as curriculum, faculty credentialing, academic rigor, student services and external factors such as regulatory bodies, government's financial aid to colleges, rules and policies, and driven by marketization and its interactions at the institutional level, institutions of higher education literature support that borrowing for school to pay for tuition and bypassing academic rigor are the most influencing factors to students' selection and enrollment at FPCs over PCCs. Selecting one type of college over another should not be driven by fluff and flashy marketing campaign, rather by academic outcomes of the completers and their rate of indebtedness. This will be investigated through a causal-comparative study via a factorial multivariate analysis of covariance, explained in the following chapter.

Chapter 3: Methodology

The research study addressed the most frequent, relevant, and predictive variables in selecting two-year colleges in the state of Texas, especially for health CTE students. For this study, the phenomenon of interest was the selection of college type for health CTE students. A causal comparative design was employed to explore relationships between and among selected variables and this design is used when data are gathered from groups and the independent variables are not manipulated as in an experimental study (Gall, Gall, & Borg, 1996). The study made use of quantitative-based secondary data annually gathered across the state by the Texas Higher Education Coordinator Board (THECB). It intended to measure the institutional and academic outcomes of health CTE students enrolled at both FPCs and PCCs. Additionally, it did compare public community colleges outcomes for graduation, indebtedness and ethnic and gender distribution to those for private, proprietary colleges offering health CTE programs in the state of Texas.

Research Questions

The research questions for this study aimed to ultimately compare academic outcomes of these graduates in both FPCs and PCCs. The research was guided by the following questions:

1. Were there graduation completion and indebtedness rates differences between public and for-profit colleges and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs, in Texas for the 2018-2019 academic year?
2. Were there gender graduation completion rate differences between public and for-profit colleges and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs, in Texas for 2018-2019 academic year?

3. Were there ethnic graduation completion rates differences between public and for-profit colleges and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs, in Texas for 2018-2019 academic year?

The following Null hypotheses were tested to examine this study research questions:

- a) There were no statistically significant differences between public and for-profit colleges for health CTE students in relation to their graduation rates and level of indebtedness as controlled by cost as the covariate variable (Two-way factorial main effect MANCOVA).
- b) There were no statistically significant differences among size of institution (i.e., small, medium and large) in relation to graduation rates and level of indebtedness as controlled by cost as the covariate variable. (Main effect two-way MANCOVA).
- c) There was no interaction between type of institution (i.e., public and for-profit colleges) and size of institution (i.e., small, medium, and large) for health CTE students in relation to their graduation rates and level of indebtedness as controlled by cost as the covariate variable. (Two-way factorial interaction MANCOVA).
- d) There were no statistically significant differences between public and for-profit colleges for health CTE students in relation to their male and female graduation rates as controlled by cost as the covariate variable. (Two-way factorial main effect repeated measures MANCOVA).
- e) There were no significant differences among size of the institution (i.e., small, medium, and large) in relation to their male and female graduation rates as controlled by cost as the covariate variable. (Two-way factorial main effect repeated measures MANCOVA).
- f) There was no statistically significant interaction between type of institution (i.e., public and for-profit colleges) and size of institution (i.e., small, medium, and large) for health

CTE students in relation to male and female graduation rates as controlled by cost as the variable. (Two-way factorial interaction effect repeated measures MANCOVA).

- g) There were no statistically significant differences between public and for-profit colleges for health CTE students in relation to their ethnic groups' graduation rates as controlled by cost as the covariate variable. (Two-way factorial main effect repeated measures MANCOVA).
- h) There were no statistically significant differences among size of institution (i.e., small, medium, and large) in relation to their ethnic groups graduation rates as controlled by cost as the covariate variable. (Two-way factorial main effect repeated measures MANCOVA).
- i) There was no statistically significant interaction between type of institution (i.e., public and for-profit colleges) and size of institution (i.e., small, medium, and large) for health CTE students in relation to their ethnic groups graduation rates as controlled by cost as the covariate variable. (Two-way factorial interaction effect repeated measures MANCOVA).

Research Design

A causal-comparative study included a number of dependent variables in the case of the present study if these variables were examined to determine main and interaction effects between graduation outcomes, and indebtedness as dependent variables and private vs. public two-year colleges, size of the college, ethnic and gender distribution of health CTE students, as independent variables.

A causal-comparative design is a research design that seeks to find relationships between independent variables (IV): college types and size of the college, gender and ethnic distribution

of CTE health students, and dependent variables (DV): graduation outcomes and level of indebtedness at these selected colleges in the state of Texas, after an event, education in this case, has already occurred. The researcher's goal was to determine whether the independent variables affected the dependent variables by comparing two or more groups and the degree of association that these study variables may have had with each other. It is also called "ex-post facto" (after the fact) (Fraenkel, 2006; Gall, Gall, & Borg, 1996). Therefore, this design aimed to determine differences that already existed between or among groups. Ultimately, it needed to show the IV's influenced the DV's in these groups.

Causal comparative design is different from correlational research in four ways: 1) Causal comparative design deals with two or more groups whereas correlational research deals with only one group. 2) Causal comparative design shows a cause and effect relationship (though it is not an experimental study, it will still show an association between variables) whereas correlational research identifies a relationship within the group. 3) Correlational research only deals with continuous variables whereas causal comparative design may have at a minimum one categorical variable. 4) Causal comparative design is inferential, or might lead to causes and/or inferences, but not correlational design. However, both types of design examine relationships between variables (Fraenkel, 2006).

The strengths of this research design are the following: 1) identification of relationship between IV's and DV's; 2) partial randomization of samples, especially when using secondary data that we already acquired from the different data sites out of the sample; 3) retrospective study; i.e., the event has already occurred like in this study; and 4) no manipulation of IV's such as in gender and types of colleges. The weaknesses are few but important to mention: 1) lack of randomization (in the state of Texas, there are only 50 public community colleges, and many

more for-profit colleges, but the selection of the two-year college was dependent on the following criteria: colleges offering health majors, difficulty in identifying causal relationship, and lack of manipulation of variables.

Participants and Sample of the Study

The state of Texas, according to THECB, has a total of 50, two-year, public community colleges. Data on demographics, CTE and academic majors, accreditation, completion and persistence rates, and employment are provided through this THECB repository site. Out of the 50 community colleges listed, thirty-five colleges were randomly selected. After researching the many sites for profit colleges in the state of Texas, and evaluating them, a total of only 23 for-profit colleges, out of 110, was chosen because they met the research criteria, namely teaching a one-year certificate or two-year AAS, offering health majors, and reporting tuition, gender, indebtedness, and academic outcomes data such as graduation and retention.

A total of thirty-five Texas, two-year public community colleges throughout the state, and a total of 23 proprietary, for-profit, two-year colleges were then selected for this study. Both samples were deemed comparable. Only Texas colleges were selected for the purpose of this research, since the interest originated from El Paso, a county of Texas. The thirty-five public community colleges were randomly selected from the list of 50 public community colleges provided by the State's repository, THECB. Data on these public community colleges (PCC's), including costs of tuition and books, indebtedness, graduation, gender and ethnic distribution, and college size of these health CTE students, were mainly retrieved from this site and the National Center for Education Statistics, NCES. These data are available and found on these public sites as secondary data. Size of the college is defined as the enrollment of students in each of the colleges. Three colleges are located along the border of the state with Mexico.

Data for the proprietary, two-year for-profit colleges (FPCs) were harder to find and identify, so randomization of this selection was not achieved. Therefore, the sample was conveniently selected. An extensive search of almost 110 Texas for-profit higher education institutions was performed, focusing only on two-year for-profit colleges and those offering health programs such as medical assisting, billing and coding, pharmacy technology, nursing and more. As a result, a total of 23 two-year, for-profit colleges was identified as meeting the selection criteria above, and data about graduation, tuition and costs, indebtedness, gender distribution, and college size were retrieved, mainly from Texas Workforce Commission, NCES college finder and data center links. Additionally, the majority of these for-profit colleges were relatively small, in number of enrollees, compared to the public community colleges. Their enrollment ranged from 25 to 1500 students, at the most; whereas PCC's enrollment ranged from 3,000 to 30,000. Furthermore, the data retrieved from selected institutions were protected and reviewed by the UTEP IRB office. All colleges were given an ID identifier, so anonymity and confidentiality of the data were assured.

Key Variables

The independent variables (IV's) were basically four. The first was college type; divided into private, for-profit, proprietary colleges, (N=23), and thirty-five public community colleges. For-profit college means that they are profit making, not tax-exempt, and answer to stockholders. Examples of for-profit, private colleges (FPCs) are Pima Medical Institute, Vista College, Western Tech, and Southwest University (SWU). They are present all over the state of Texas. The second IV was gender, categorized by male or female, as reported by the data sources; the third IV was ethnicity. Nine ethnic categories were reported. However, only four ethnic groups were studied. They included Black/African American (Eth_3), white (Eth_4), two or more races

(Eth_5), and Latinx (Eth_9). The fourth IV was college's size based on students' enrollment. Sources for these variables data were retrieved from the following repository data sites, THECB, NCES College Finder and Data Center, and Texas Workforce Commission.

The dependent variables included graduation rates and numbers, and rate and amount of indebtedness. Graduation rates (in %) are all students that successfully completed their health certificate (1-year) and/or associate degree (2-year degree). Graduation data for both certificates and AAS are combined as one total graduation rate. Tuition and books were considered a covariate. They all were reported for year 2018-2019; the latest year for this data. The amount and percentage of indebtedness were reported as debt rate per each college entity for the same reportable year.

Instrument and Data Collection

The data retrieved from THECB mainly represented the reports submitted by each public community college in the state of Texas. Each is obligated to report on their program's outcomes in response to THECB request. This process is usually done on a yearly basis as an exercise in compliance to THECB and as a measure of effective programming and curriculum delivery, conditionally set for appropriate state funding. Good and passing numbers on academic performance measures and employment are a condition to a proper accreditation standing and an adequate funding for the community college. THECB data included the following reports on graduation per program, demographics including gender and ethnicity, licensure reports, and employment. For each of the 35 colleges, the researcher conducted an interactive search for each of the study variables. The latest reportable outcome variables were reported in 2018-2019 academic year; therefore, this was the selected reporting year for all data of both entities for this study. It is important to note that THECB receives the reported data from each two-year public

college and it relies on the accurate and honest reporting of the college entity. Justifiably for this study, there was no way to ascertain the overall fidelity of the reported data but trust that if THECB makes it public, then the reported and presented data is viable for examination.

THECB already categorized colleges as large, medium, and small based on the number of enrollees. The THECB almanac provides tuition and books costs as well. To retrieve the same data for the variables studied of FPCs, the researcher accessed NCES of the department of education to collect graduation rates, gender of graduates in percentages, costs of tuition and books, and level of indebtedness. To confirm the data, we compared it with Texas Workforce Commission website.

To identify the key performance indicators at either FPCs or PCCs, data from FPCs and PCCs dashboards and analytics from NCES and TWC were extrapolated. Length of program, costs, job outlook, graduation rates, accreditation, academic pre-requisites, and their geographic location in the county were retrieved and documented for the analysis as well.

Health CTE majors, such as Medical Assisting (MA), Billing and Coding, Pharmacy Technology, Medical Lab Technology, Respiratory care Technology, Sonography, Nursing, X-Ray Technology, Surgical Technology, EMT and Paramedic, Dental Hygiene and Dental Assisting, Physical Therapist Assisting were all reported for the sake of this study. The health programs taught most in both FPCs and PCCs were MA and Billing and Coding. All collected data were documented on an SPSS software package, originally reported in Excel.

Statistical Analysis Procedure

The study employed a 2x3 factorial multivariate analysis of covariance (MANCOVA) statistical procedure to determine the relationship that the selected factors (groups) had on the simultaneous analysis of the selected outcome variables (Tabachnick & Fidell, 2013). The researcher utilized the analysis of MANCOVA because it is used to determine whether groups differ on more than one dependent variable controlling or statistically adjusting for other related variables (Fraenkel, 2006). In this case, the MANCOVA determined both the main effect and any interactions between college types and college sizes while observing individual institutions' graduation completion rate outcomes, and indebtedness as outcome variables and controlling for college's tuition and books costs. The results from the study were presented in tables and graphs reporting the statistics such as means and totals. In the event that graduation and/ or indebtedness was not reported, or data did not exist, those colleges' data were considered as missing and were not factored in the calculations.

With the use of MANCOVA, we were able to compare two or more continuous dependent variables (graduation and level of indebtedness) by two or more independent variables (types of colleges and college size). Six basic assumptions drive MANCOVA: 1) independent random sampling, 2) level and measurement of the variables, 3) linearity of the dependent variables (correlation through Pearson's r), 4) multivariate normality (all dependent variables are normally distributed tested through Kurtosis and Skewness), 5) multivariate homogeneity of variance within groups and between groups through Levene's test (multivariate homogeneity of covariance between groups will be done through Box M), and 6) homogeneity of regression slopes. All assumptions related to the proper use of this statistical technique were reviewed (i.e., independence of observations, multivariate normality, linearity, homogeneity of variance-

covariance matrices, covariates and DV's are continuous, IV's are categorical, absence of multicollinearity, and regression of slopes) (Tabachnick & Fidell, 2013, p.263-264).

The analysis protocol for conducting MANCOVA was done through SPSS version 25. It included descriptive statistics for normality checking. It also examined the data level and assumptions. MANCOVA test followed, then post hoc analysis if needed. If significance is found, then evaluation of the effect size and power is done. The MANCOVA procedure was used for deciding the effect of various grouping variables by examining graduation rates, and indebtedness of health CTE students in both colleges' types. If any of these main effect and interaction factors were deemed significant, these initial results were followed by univariate F-tests. The adjusted mean differences between the groups were evaluated with respect to each dependent variable. MANCOVA facilitated the data analysis by the interrelation of the dependent and covariate variables and identified variables in the study (IVs) differed from each other. Prior to examining these effects, the various assumptions for using this statistical procedure were checked.

To address the various research null hypotheses, a 2x3 factorial design Multivariate analysis of covariate (MANCOVA) will be employed to examine the first three hypotheses listed above noted as a through c to examine MANCOVA between subjects design. This will be followed by examination of the remaining hypotheses (d-i) utilizing a 2x3 within subject multivariate analysis of covariance due to the fact that group variables (gender and ethnicity at graduation) are treated as new outcomes regarding completion rates. The factorial repeated measures within subject design focuses on type of institution and size of institution by examining gender and ethnic groups as completion rates outcomes. For the repeated measures MANCOVA, a new additional assumption, Mauchly's Test of Sphericity, is assessed under a between and

within subject scenarios. This last assumption is likened to the homogeneity of variances in between-subjects ANOVA. This important assumption is a condition where the variances of the differences between all possible pairwise comparisons of the within-subjects design are assumed to be equal or equivalent. The use of MANOVA rather than ANOVA procedure is preferred in the event that the data does not meet this assumption (Fields, 2018).

Position of the Researcher

As a dean of Health Career and Technical Education division of a two-year public community college, I had a monumental task to identify the variables or factors that lead students ‘college choice knowing full well the consequences of enrolling in one college over another. Students are currently being placed in financial debt while enrolled in private colleges’ health programs, spending more than two years to complete a health program to finally find out that they are unable to pass their licensure test. This state or a nationally-required test is a pre-requisite for employment in the field. I have currently in my division more than seventeen different health programs. Many of them are being offered at the different private, for-profit colleges in town and around the state, and pull more than one-third of our potential student population, so it behooves the local public college administration to understand these variables influencing students’ uneducated decisions vis-à-vis college choice. Therefore, my goal in studying this population was to learn more about the health CTE students’ selection, specifically the factors that influence college choice. The decision-making process of students is an emerging topic. Findings from this study could provide invaluable insight about this population, and how can colleges tailor services to help students succeed. It is my hope that the results from this study will directly benefit our college, division, and students in terms of targeting health CTE students to assist them academically and personally in a timely manner, and revamp our college services

and staff to aid in these students' retention and completion, while simultaneously regain contact hours, state funding, and enrollment.

Summary

This chapter provided an overview of the study's methodology. It is a comparative design study of two types of college institutions where the dependent variables were the academic performance measures and the level of indebtedness of health CTE students, and the independent variables were four: college types, gender, ethnicity, and college size. Cost of tuition and books was considered the covariate. A sample of 35 PCC's and 23 FPC's, for a total of 58 Texas colleges was the unit of study. Data collection were retrieved as secondary data from these following sites, TWC and NCES. Data was considered trustworthy, reliable and valid. To analyze data and address specific hypotheses, a between-subjects and within-subjects MANCOVAs were conducted. A significance of a relationship between academic outcomes and level of indebtedness with college types and size of colleges was sought.

Chapter 4: Results

This research study compared identified key performance indicators in both types of colleges, for-profit and public. Many studies documented specific key indicators such as graduation rate and costs of tuition and books but did so separately (Baum et al., 2013; Caruth, 2018; & Soliz, 2018). As such, they offered the benefits of enrolling in one or the other college. However, none studied all key performance indicators (graduation and debt rates with cost as a covariate) in relation to type of institution, size of the institution, gender and ethnicity at graduation, like this research study did. In order to address these questions, a secondary set of colleges' key performance indicators data including Pell grant amount, loan, debt rate, costs of tuition and books, total graduate rate of health CTE, gender and ethnic rates at graduation, student to faculty ratio, and college size was analyzed using a quantitative research methodology. The researcher utilized analysis of MANCOVA (Gall et al., 1996). In MANCOVA, to assess for statistical differences on multiple continuous dependent variables by independent variables, while controlling for the effects of a covariate variable. This is important because the analysis considers the covariates' effect on the relationship between the independent grouping variable and the set of continuous dependent variables to make statistical adjustments or control.

Initially, the collected data was screened for any inaccuracies in the data file including missing data, detection of outliers, distributional assumptions (e.g., univariate and multivariate normality, linearity, homoscedasticity, and equality of variance-covariance matrix, and equality of slopes).

These results were presented in tables reporting the descriptive statistics such as means, standard deviations, and percentages.

In order to address the major research questions that helped drive this study, the research null hypotheses allowed us to address each component of these questions. The results of the study were dependent on addressing each of the following research null hypotheses:

- a) There were no statistically significant differences between public and for-profit colleges for health CTE students in relation to their graduation rates and level of indebtedness as controlled by cost as the covariate variable.
- b) There were no statistically significant differences among size of institution (i.e., small, medium and large) in relation to graduation rates and level of indebtedness as controlled by cost as the covariate variable.
- c) There was no interaction between type of institution (i.e., public and for-profit colleges) and size of institution (i.e., small, medium, and large) for health CTE students in relation to their graduation rates and level of indebtedness as controlled by cost as the covariate variable.
- d) There were no statistically significant differences between public and for-profit colleges for health CTE students in relation to their male and female graduation rates as controlled by cost as the covariate variable.
- e) There were no significant differences among size of the institution (i.e., small, medium, and large) in relation to their male and female graduation rates as controlled by cost as the covariate variable.
- f) There was no statistically significant interaction between type of institution (i.e., public and for-profit colleges) and size of institution (i.e., small, medium, and large) for health CTE students in relation to male and female graduation rates as controlled by cost as the variable.

- g) There were no statistically significant differences between public and for-profit colleges for health CTE students in relation to their ethnic groups' graduation rates as controlled by cost as the covariate variable.
- h) There were no statistically significant differences among size of institution (i.e., small, medium, and large) in relation to their ethnic groups graduation rates as controlled by cost as the covariate variable.
- i) There was no statistically significant interaction between type of institution (i.e., public and for-profit colleges) and size of institution (i.e., small, medium, and large) for health CTE students in relation to their ethnic groups graduation rates as controlled by cost as the covariate variable.

To effectively answer these questions, a quantitative research methodology was employed in the study to identify and measure relationships between variables.

This chapter is organized into the following sections. The first describes the samples of the study, $N=35$ for public colleges and $N=23$ for for-profit colleges, and the data screening process. The second section involved a complete rundown of descriptive analysis of all variables, dependent and independent. The third section is a statistical analysis of the research questions. A multivariate analysis of covariance and a repeated measure analysis of the ethnic and gender at graduation are performed and analyzed. The chapter closes with a summary of results.

Data Sampling and Screening

Two samples of both types of colleges, for-profit and public, were the unit measure of the study. Thirty-five of fifty community colleges were randomly selected from the THECB Almanac repository site. These community colleges are Texas colleges, dispersed all over the state. Each is a two-year college that offers different health programs. Out of 110 for-profit

colleges in the state, only 23 offer health programs via either a one-year certificate or two-year associate degree. Demographics and key performance indicators were extracted from national center of education statistics website and verified by Texas workforce commission website. Key performance indicators data were retrieved for 2018-2019 academic year.

Examination of Missing Data

The total number of colleges was 58. None had any missing responses to any of the variables.

Detection of Outliers

As part of the data screening process, analysis outliers were examined with the 58 colleges' sample. At the univariate level, the criteria for detecting if a response is considered an outlier of lying outside the range of 8.32 for public and 17.371 for private in total graduation reporting using the SPSS procedure. Only one public community college, ID=16, registered an outlier of total graduation rate (TGRAD) at 47.1; therefore, it was deleted from the set. As a result, the total N sample was reduced to 57.

A causal-comparative research design was used to determine main and interaction effects between gender, ethnicity, size of college, and type of college in relation with graduation and level of indebtedness rates while controlling of the covariate, cost. The causal-comparative study approach attempted to examine relationships among study variables with an attempt to determine consequences of differences that may already exist between or among groups of colleges. Although, we were studying these associations, the design differs from the correlational approach since we are examining two or more groups and their main and interaction effects. The dependent variables (DV) used for the study were the total graduation rate of CTE health in both types of institutions, the rate of indebtedness (Debt_R) Gender graduation rate

(GGR) and ethnicity graduation rate (Eth_R). The independent variables (IV) for this study were: size and types of colleges. These variables were part of the demographics section of the study.

STATISTICAL ANALYSES

After the collected data was screened for any inaccuracies and outliers' detection, distributional assumptions such as univariate and multivariate normality, linearity, homoscedasticity, and equality of variance-covariance matrix, and equality of slopes were conducted.

These results were presented in tables reporting the descriptive statistics such as means, standard deviations, and percentages. All distributional assumptions related to the proper use of this statistical technique were examined and reported below.

Statistical Assumptions

Independent Random Sampling. The statistical procedure used for this study MANCOVA, assumes that the observations are independent of one another, there is no specific pattern for the sample selection, and that the sample is completely random. Although the study did not employ a random process of selection for both samples, the data collection procedures involved a process of selection that may be considered more as a sampling of convenience and may shadow the veracity of meeting this assumption for the for-profit colleges' sample. However, the collected data of 58 colleges, based on secondary sources, may minimize potential deleterious effects due to the meeting of this assumption and may justify the appropriateness of this statistical procedure.

Level and Measurement of the Variables. MANCOVA assumes that the independent variables are categorical, and the dependent variables are continuous or scale variables. Covariates for the most part are continuous or interval level scales. For the

independent variables, this assumption is clearly met since gender, ethnicity, size and type of colleges were collected in a priori format as groups or categories while the dependent variables derived from the THECB and NCES are considered continuous variables.

Absence of multicollinearity. The dependent variables cannot be too correlated to each other. Table 4.1 presents the intercorrelations among the study dependent variables including the total graduation rate. The values for all the DVs and the covariate are below $r = .90$, indicating that there is no strong correlation across these study variables (Tabachnick & Fidell, 2013)

Table 4.1

Intercorrelations among the dependent variables and the covariate

	TGRAD	Debt Rate	TBCosts
TGRAD	1		
Debt Rate	-.47	1	
TBCosts	-.57	.60	1
Mean	81.40	44.12	10,887
Standard Deviation	15.62	25.80	8,023

$N = 57, p < .001$

Multivariate Normality. The normality assumption was analyzed at the univariate and multivariate level. Due to the sample size of 58 colleges, the formal tests of normality the Shapiro-Wilk's W and the Kolmogorov-Smirnov Test for univariate normality were employed. Because these procedures tend to be highly sensitive to issues of sample size, the assumption was

not met at the univariate level. This SPSS macro gave partial confirmation of normal distributional patterns at the univariate level, as shown in the following results by the examination of the dependent variables skewness and kurtosis results in Table 4.2 below:

Table 4.2

Measures and Tests of Skewness & Kurtosis across college types and size for total graduation

DV		Skewness		Kurtosis	
		Z1	p-value	Z2	p-value
TGRAD	Public	-.043	0.200	-.811	.645
	For-Profit	-.248	0.200	-.082	.850
TGRAD	Large	-.102	.200	-.933	
	Medium	-.1.032	.002*	-.121	
	Small	-1.245	.011	1.67	

N=57; Z1 = z-score value for skewness; Z2 = z-score value for kurtosis

The normality assumption appears to have been met at the univariate level for the Total graduation rate across type of college by the examination of the kurtosis results as is shown in table 2. Additionally, total graduation rate (TGRAD) across size of the college met the assumption of normality across large and small sized colleges, and did not across medium size. However, P-P plots seem to indicate a slight departure for fully meeting this assumption, see figures below.

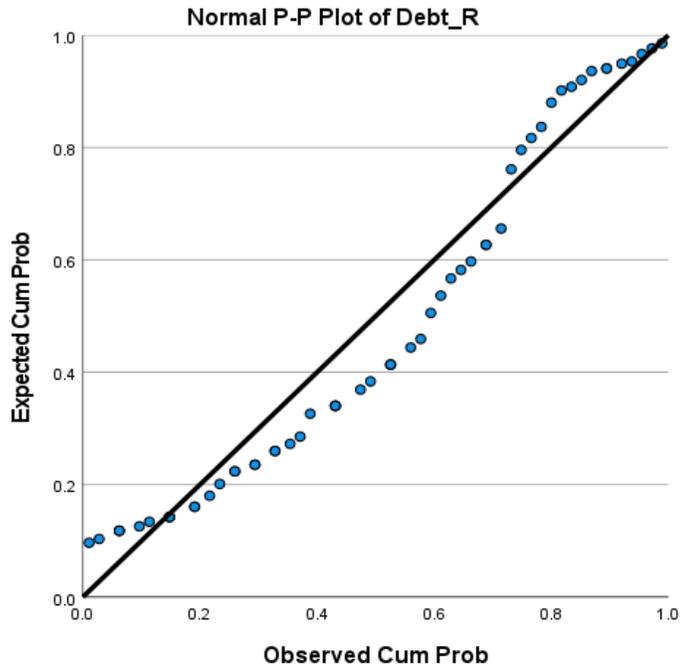


Figure 4.1 P-P plot for examining multivariate normality on indebtedness variable

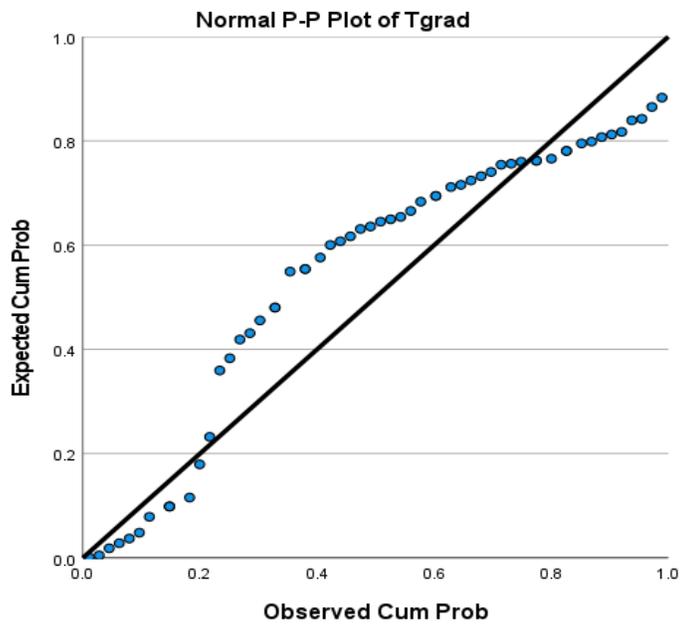


Figure 4.2 P-P plot for examining multivariate normality total graduation rates variable

Homogeneity of Variance–Covariance Matrix: The variance of dependent variables scores. For this MANCOVA, the Box’s M value of 71.71 was associated with a p -value of less than 0.001, which was significant. Thus, the covariance matrices between the groups were assumed to be equal for the purposes of the MANCOVA. With regard to total graduation rate by gender across size and type of colleges, the assumption of equality of covariance matrices, Box’s $M=96.38$, $F=7.00$ presented with a p -value of 0.001 so this assumption was not met. It demonstrated that these covariate matrices, male and female graduation rates (GGR_M and GGR_F) for these two types of colleges and the three different sizes were not equal. Box’s test of equality of variance matrices tests the null hypothesis that the observed covariance matrices of the dependent variable, ethnic graduation rate (Ethnic_Grate), are equal across groups. However, this assumption, Box’s $M=203.35$, $F(30, 4257.87) = 5.67$, and $p < 0.01$ is not met, hence they are not equal.

Moreover, the Levene’s test of equality of error variances provided one significant and another non-significant value at the multivariate level: TGRAD $F(4, 52) = 6.17$, $p < 0.001$, Debt_Rate $F(4, 52) = 3.02$, $p = 0.026$, Thus, indicating that the assumption was partially met, and the variance is equal across groups. Similarly, Levene’s test of gender at total graduation rate GGR_M $F(4, 52) = 10.97$ and GGR_F $F(4, 52) = 8.84$ presented with $p < 0.001$. Only ethnicity at total graduation at Eth_3 or African American/Black was insignificant at $p=0.226$. Furthermore, due to these observed results, investigations on this matter from authors such as Tabachnick & Fidell, (2013) indicate that the univariate F-tests are robust in relation to this assumption when the samples sizes are balanced. The only group which exhibited unbalanced sample sizes was gender at graduation and a non-parametric statistical procedure Kruskal-Wallis was used to corroborate this set of analyses on those dependent variables of concern.

Relationship between covariate(s) and dependent variables. In choosing what covariates to use, it is common practice to assess if a statistical relationship exists between the covariate(s) and the dependent variables; this can be done through correlation analyses. For the final data set (n = 57), the inter-correlation among the dependent variables and the covariate indicate a negative moderate correlation between them, refer to Table 4.1.

Linearity. Examination of the bivariate scatterplots for all the dependent variables indicated that there was a linear pattern on two of the bivariate variables except one, indebtedness with graduation completion rates. Thus, one can consider that this assumption is somewhat met due to the different metrics used on both and some caution is expected on the overall interpretation when these variables are considered in tandem. See figure 4.3 for scatterplots.

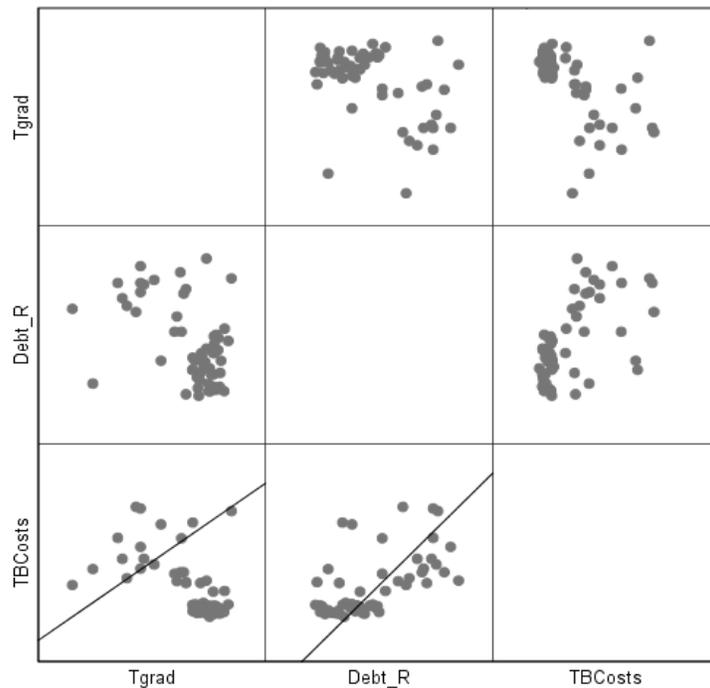


Figure 4.3 Scatterplots for examining linearity among the dependent and covariate variables

Sphericity assumption was tested for those particular hypotheses where the repeated measures were involved in the study's outcome variables. The Mauchly's test for sphericity was employed since the procedure is tested under the SPSS GLM procedure and its results were reported primarily with the ethnic groups since there were more than two groups. There was no need to test for the gender's graduation completion rates outcomes variable. Results from this test on the ethnic's graduation completion rates indicated that the assumption was not met, Mauchly's $W = .642$, approximate $\chi^2(5) = 22.05$, $p < .01$. However the use of a multivariate procedure and the Greenhouser-Geisser approach (Fields, 2018) reduces the impact on the results from this violation of the assumption. Thus, the results from the Greenhouser-Geisser procedure indicated significant results between and among the ethnic graduation completion rates, $F(2.47, 125,73) = 5.95$, $p < .002$, partial $\eta^2 = .10$.

Sample Description

Sample descriptors were collected from a total sample of 58 colleges in the fall of 2020, of available reportable data for academic year 2018-2019. One outlier of public college was removed for a total sample of 57. There were originally 35 public community colleges and 23 for-profit colleges. Both samples satisfied the pre-requisites of teaching either one-year certificate or two-year associate degree of health CTE majors. Type of colleges was divided into for-profit and public community colleges. Size of the colleges was categorized into three: large, medium, and small. A large college ranges from 3,000 to 30,000 students or more. A medium size college ranges from 500 to 2,999 students, and a small size college runs from 9 to 499 students. Gender is categorized into either male or female. No other gender identification is listed or reported. Ethnicity was reported into 9 categories. Eth_1 to Eth_4 represent Indian American,

Asian, African American/Black, and White respectively. Eth_5 to Eth_9 represent two or more races, unknown, resident alien, Native Hawaiian and Pacific Islanders, and finally Latinx race respectively. For the sake of this study, only Eth_3, Eth_4, Eth_5, and Eth_9 were selected for analysis as they were the most representative of the sample's cohort. Therefore, African American, White, two or more races, and Latinx are the ethnicity unit of analysis. Tuition and books costs (TBCOSTS) is the covariate, representing both tuition and books fees for that academic year.

The research questions for the total graduation rate (TGRAD), level of indebtedness (Debt_R), total graduation rate per gender (GGR_M and GGR_F) and ethnicity (ETH_3, ETH_4, ETH_5, and ETH_9) were answered by our MANCOVA statistical procedure' repeated measures.

Research Results

A between-subjects multivariate analysis of covariance (MANCOVA) was performed on two dependent variables associated with college types and college size, with tuition and books costs (TBCOSTS) as a covariate. For the sake of this study, TBCOSTS was considered the covariate. Independent variables were types of colleges and size of colleges.

IBM SPSS MANCOVA procedure under the general linear model tab was used for the analyses with the sequential adjustment for non-orthogonality. Order of entry of IVs was type of college and size of college. Total N= 58 was reduced to 57 by removal of one outlier of public community college. Results of their assumptions were mostly satisfactory as described above.

Descriptive Analyses

An extensive descriptive analysis was conducted for total graduation rate, debt rate, and costs (TGRAD, Debt_R, and TBCOSTS) across college types and sizes. Tables 4.3 and 4.4

display these findings. As noted, there were 13 large, 17 medium, and 4 small community colleges whereas there were no large for-profit colleges, but nine medium and 14 small. Both entities had more medium sized colleges than any other. The descriptive data showed that mean of total graduation rate across all college sizes for public community colleges was at least 20 % more than any of the two means of medium and small sizes for the for-profit colleges, as referred in table 4.3.

Table 4.3

Descriptive statistics for total graduation rates across type of institution and size of institution

Type/Size of Institution	M	SD	N
Public			
Large	88.78	3.40	13
Medium	91.58	4.16	17
Small	88.55	4.83	4
Profit			
Large	n/a	n/a	n/a
Medium	60.22	11.51	9
Small	68.43	17.37	14

More importantly, the total graduation mean for the public community colleges over total of sizes combined was 90.15 compared to that total mean of TGRAD of for-profit which stood at 68.43.

As levels of student indebtedness variable was examined across type and size of institution, table 4.4 showed that regardless of type or size of the public institutions, students were by far in less debt than their counterparts in private institutions with a little more than half of their overall indebtedness for similar health-related majors. In addition, there is a marked similarity across size of institutions for the public type. As observed from table 4.4, regardless of the size of the college, for-profit colleges generate twice as much debt rate mean ($M=66.48$) as the debt rate mean of public community colleges ($M=29.75$).

Given that there were no “large” private institutions, one can extrapolate that the level of indebtedness may be even higher than those institutions of medium size.

Table 4.4

Descriptive statistics for total debt rates across type of institution and size of institution.

Type/Size of Institution	M	SD	N
Public			
Large	30.38	10.72	13
Medium	27.76	13.47	17
Small	29.75	9.21	4
Profit			
Large	n/a	n/a	n/a
Medium	69.22	26.29	9
Small	64.71	24.46	14

In regards to costs derived from tuition and books, table 4.5 reported very stable total averages across size of public institutions. However, an examination of the private institutions across the two sizes indicated that there is close to \$5,000 dollar difference between the medium and small size institutions. Although, there is a large variability found within the public institutions, this discrepancy may be due to sample sizes within each type.

Table 4.5

Descriptive statistics for cost of tuition and books across type of institution and size of institution

Type/Size of Institution	M	SD	N
Public			
Large	6257.77	2369.19	13
Medium	5186.59	799.19	17
Small	4615.60	1043.01	5
Profit			
Large	n/a	n/a	n/a
Medium	21859.67	7321.99	9
Small	16827.36	6394.56	14

As expected, for-profit colleges cost almost three times as much as public community colleges (Mean of for-profit institutions is \$18,796.52 compared to \$5,502.89 for public community colleges), shown in table above. In regards to examining not only the total graduation rates but also more specifically the total graduation rates across gender for these identified institutions, table 4.6 reported marked differences between male and female graduation rate within size and across type of institutions.

The total graduation rates for males and females (GGR_M and GGR_F) are also described across size and types of colleges in the following table 4.6. Though total graduation of health CTE in public colleges is almost at 90% compared to that of for-profit at 68%, the individual gender categories, male and female, fare better separately in for-profit colleges.

Table 4.6

Descriptive statistics for total gender graduation completion rate across type of institution and size of institution

Type/Size of Institution GGR_M	M	SD	N
Public			
Large	17.77	6.91	13
Medium	27.24	9.90	17
Small	28.80	10.59	5
Profit			
Large	n/a	n/a	n/a
Medium	52.11	16.66	9
Small	31.34	31.29	14
Type/Size of Institution GGR_F	M	SD	N
Public			
Large	21.23	5.38	13
Medium	27.59	7.21	17
Small	35.00	5.33	5
Profit			
Large	n/a	n/a	n/a

Medium	64.20	15.49	9
Small	78.80	19.59	14

One could extrapolate that gender graduation rate for both gender, male and female, (GGR_M and GGR_F) is falsely reported by for-profit, private colleges. However, both types of colleges graduate more females than males. This confirmed the literature on gender graduation at two-year colleges. Females graduate at a higher rate than males. One could also contribute this difference in gender graduation to the type of majors enrolled by females more so than males. Health occupations, such as nursing, medical assisting, dental hygienist, etc., are historically more prevalent in females than in males. This was consistent in both types of colleges and across all sizes.

Table 4.7 presents the total graduation rate across selected ethnic groups typically served by these institutions. The last descriptive table details total graduation rates at all four ethnic categories, African-American, white, two or more races, and Latinx. Their mean, standard deviation across type and size of colleges are delineated below.

African Americans at for-profit colleges are almost double that at public colleges (38.13% to 22.63%); Whites are almost equally distributed in both types of colleges (26.94% and 31.47% respectively), two or more races were not any different than whites. Latinx total graduation mean rate at public community colleges was 27.1% whereas at for-profit colleges, it registered at 46.65%. More importantly, regardless of size, for-profit colleges graduate more African American students than public community colleges. Whites mean graduation rate is fairly the same in both types of colleges. However, there is a discrepancy between ethnic graduation rates means and total graduation rate means across types and sizes of

colleges. It could be attributed to misreporting of ethnic graduation data by private, for-profit colleges since they do self-report the data. Another explanation to the discrepancy between total graduation rate and ethnic graduation rate at both colleges is that FPCs target and assist their minority students to completion more efficiently than PCCs do.

Table 4.7

Descriptive statistics for total ethnic graduation rates across type of institution and size of institution

Type/Size of Institution	M	SD	N
ETH_3=African American			
Public			
Large	21.25	24.78	13
Medium	23.35	19.57	17
Small	24.00	9.56	5
Profit			
Large	n/a	n/a	n/a
Medium	46.56	19.79	9
Small	32.71	34.97	14
ETH_4=White			
Public			
Large	19.15	7.43	13
Medium	31.35	15.69	17
Small	32.20	7.56	5
Profit			
Large	n/a	n/a	n/a

Medium	46.67	28.60	9
Small	33.00	37.86	14

Table 4.7 Continued

Descriptive statistics for total ethnic graduation rates across type of institution and size of institution

Type/Size of Institution	M	SD	N
ETH_5=Two or more races			
Public			
Large	16.69	9.40	13
Medium	21.18	17.76	17
Small	11.40	10.57	5
Profit			
Large	n/a	n/a	n/a
Medium	52.44	40.30	9
Small	12	28.54	14
ETH_9=Latinx			
Public			
Large	19.31	7.29	13
Medium	31.41	18.20	17
Small	35.60	9.23	5
Profit			
Large	n/a	n/a	n/a
Medium	58.11	24.61	9

Small

39.29

38.42

14

Research Question 1: Were there graduation completion and indebtedness rate differences between public and for-profit colleges, and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs, in Texas for the 2018-2019 academic year?

This research question was addressed by the results obtained from examining the first three null hypotheses (a through c). As already stated above, the assumption of equality of covariance matrices, Box's $M = 71.73$, $F = 5.21$ demonstrated a p -value of < 0.01 , so the assumption was not met; therefore the covariance-variance matrices of total graduation rate and debt rate (TGRAD and Debt_R) for these two types of colleges and the three different sizes were not equivalent. Levene's test of equality of error variance tested each dependent variable separately (univariate test) and showed TGRAD (total graduation rate) at $p < 0.001$ but DEBT_R at $p = .026$. The assumption was partially satisfied at DEBT_R (debt rate).

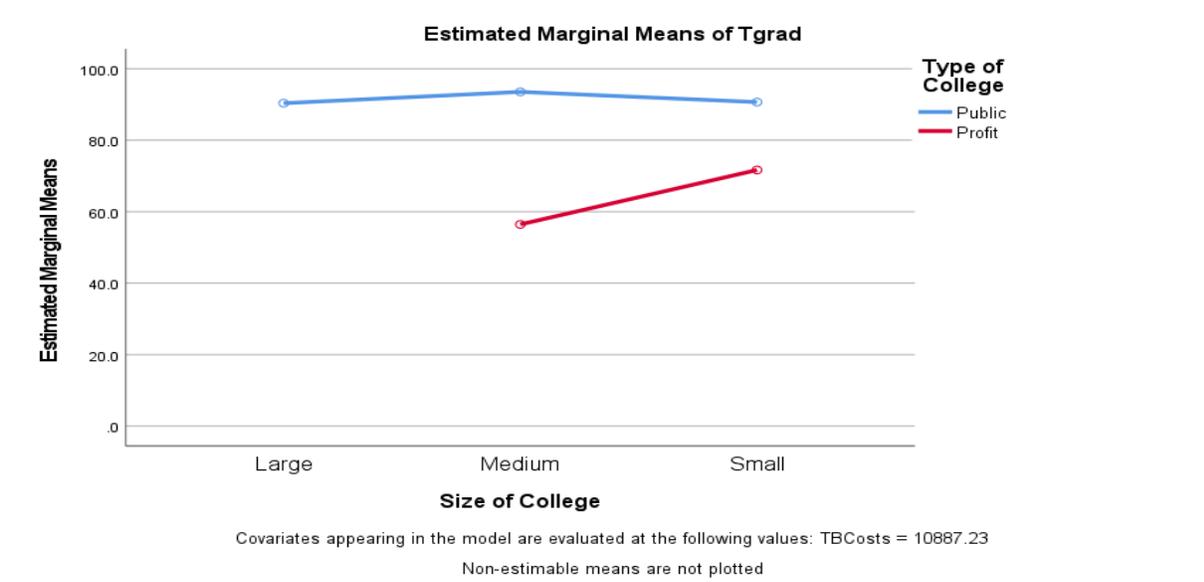
Upon examination of the multivariate covariance results, there was a significant difference between public and profit colleges when considered jointly, on the variables total graduation rate and debt rate, Wilk's $\lambda = .579$, $F(2, 50) = 18.21$, $p < 0.01$, and partial $\eta^2 = .42$. Main effect size of institution and interaction effect were not significant at this level. Given that the MANCOVA test indicated a significant difference between the outcome variables and the type of college main effect, a separate follow-up ANOVA test was conducted for each dependent variable evaluated at an alpha level of 0.05. There was a significant difference between types of

colleges on total graduation, $p < 0.01$, $F(1, 51) = 20.73$, partial $\eta^2 = .29$. Mean of PCCs total graduation rate is at 90.16 compared to that of FPCs which was at 68.43. Similarly, there was a significant difference between types of colleges on debt rate, $F(1,51) = 13.07$, $p < 0.01$, and partial $\eta^2 = .20$, mean of debt rate of FPCs was at 66.48 compared to its counterpart at PCCs which was = 29.00. The covariate, tuition and books cost, had no effect on the two outcomes across both types of colleges and size of colleges.

The figure below shows the estimated marginal means of total graduation rate (TGRAD) across types of colleges and sizes, with private colleges reporting no large colleges. Throughout the various sizes of colleges, PCCs exhibited a rather stable graduation completion rates across sizes of institutions, they did better on total graduation of health CTE than its for-profit counterpart.

Figure 4.4

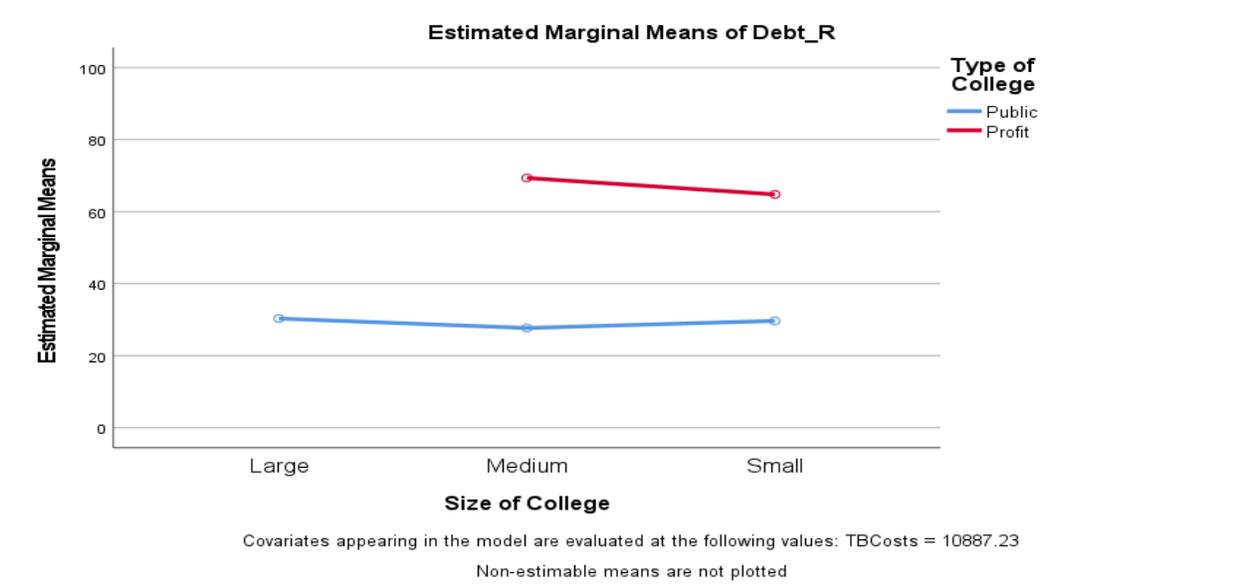
Estimated means of total graduation rate (TGRAD) across types and size of colleges



Similarly, below in figure 4.5, debt rate (Debt_R) was significant in for-profit colleges more so than in PCCs with rather high indices of student debt hovering around \$63,000 dollars versus \$35,000 dollars for the public institutions.

Figure 4.5

Debt rate (DEBT_R) means across type and size of colleges



Research Question 2: Were there male and female student graduation completion rates differences between public and for-profit colleges and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs for the 2018-2019 academic year?

Research question number two was addressed by the results obtained from examining the null hypotheses d, e, and f. A total of 34 PCCs and 23 FPCs and 13 large, 26 medium, and 18 small colleges encompass these descriptors. Overall, graduation rate for males (GGR_M) mean

for PCCs was 23.44 compared to graduation rate for males (GGR_M) mean for FPCs which stood at 39.47, excluding any large colleges registered for FPCs. Similarly, graduation rate for females (GGR_F) mean of FPCs was almost three times as much as that of PCC's (73 to 26). Both genders did better at FPC's graduation than at PCC's, when they enrolled in either medium and/or small sized college.

MANCOVA's tests within subjects effects showed significance of $p = 0.047$ for size of college and partial η^2 at .113 or 11.3% of the variance is detected. Its observed power registered at .595. TBCOSTS and type of colleges were not significant, recording p -values > 0.05 . Even the interaction of type, size, and GGR was not deemed significant at $p = 0.144$.

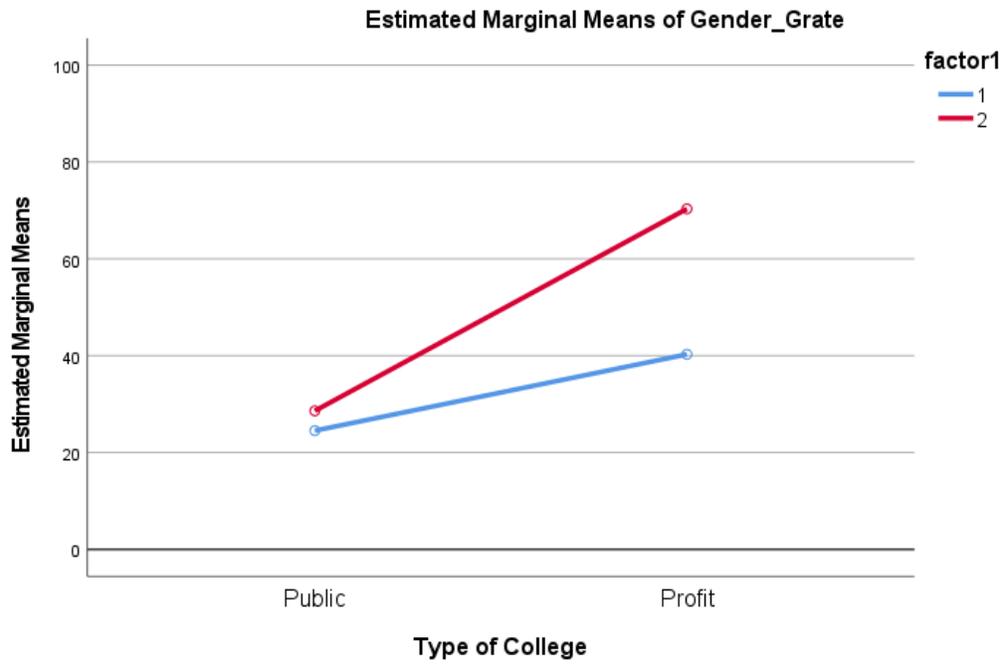
Levene's test of equality of error variances tested each dependent variable separately (univariate test) and showed graduation rate of males (GGR_M) and graduation rate of females (GGR_F) to be significant at $p < 0.001$. Clearly, this assumption was not satisfied.

There was a significant difference between size of colleges when considered jointly on the variables male and female graduation rates (GGR_M and GGR_F), Wilk's $\lambda = .887$, $F(2, 51) = 3.25$, and $p = 0.047$, partial $\eta^2 = .113$. None of the other variables showed any significance with gender graduation rate (GGR) with costs (TBCOSTS) and type of colleges. No interaction of gender graduation rate with either college or size was detected at $p = .144$. A separate ANOVA was conducted for each GGR (total gender graduation), with each ANOVA evaluated at an alpha level of 0.05. There was a significant difference between type of colleges on GGR, $p < 0.01$, $F(1, 51) = 21.86$, partial $\eta^2 = .30$. For-profit colleges fared better in both genders graduation rates than PCCs. Similarly, there was a significant difference among size of colleges on GGR, $p = 0.037$, $F(2, 51) = 3.52$, partial $\eta^2 = 0.595$. These are shown as significant by their respective means by size and type of colleges for the GGR variable, mentioned above. The interaction

effect of both college types and size was deemed insignificant, reading a p -value of .452. The figures, 4.6 and 4.7, below translate the gender graduation rate (GGR) mean in both types and sizes of colleges. Although, the test did not yield a significant difference, Figure 4.6 indicates that private colleges reported higher graduation completion rates for both male and female students than the public colleges. Similarly a no significant interaction between type and size of institution, Figure 4.7 indicates that across all sizes of institutions, the female graduation completion rates were better than males (only PCCs had large sized colleges). In both figures 4.6 and 4.7, the blue line represents male graduation rate. The red line represents female graduation rate.

Figure 4.6

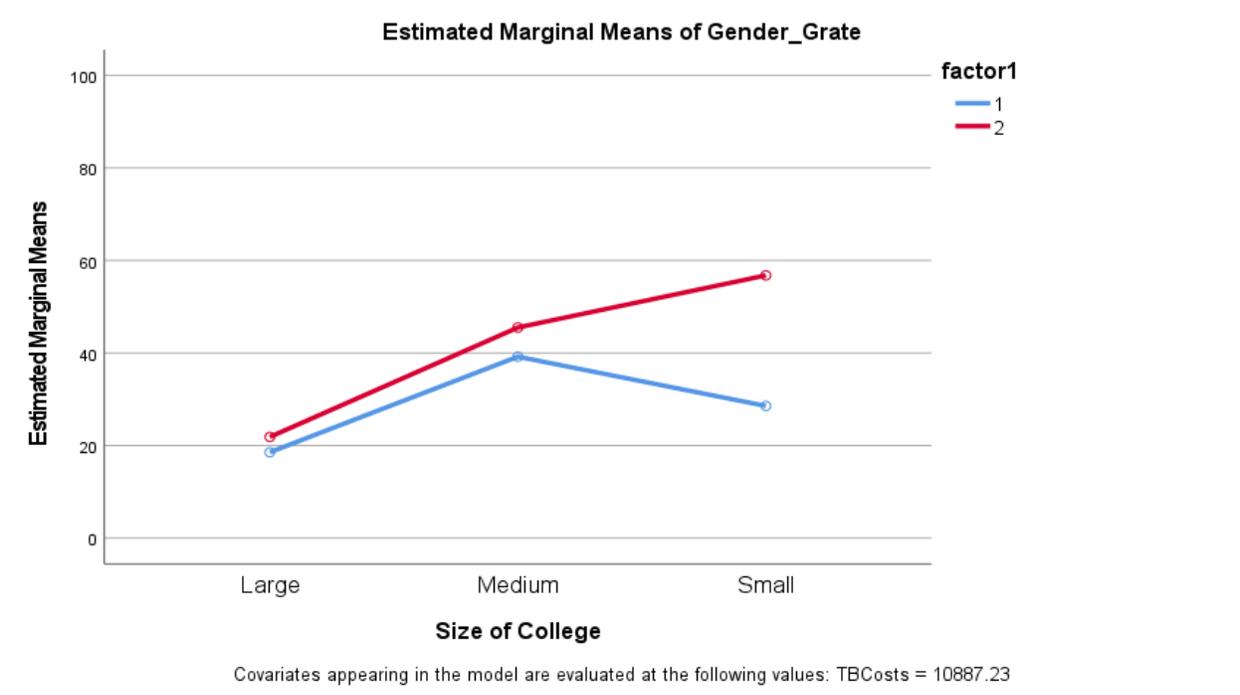
Gender graduation rate (GGR) means between types of colleges



Covariates appearing in the model are evaluated at the following values: TBCosts = 10887.23

Figure 4.7

Gender graduation rate (GGR) means across college sizes



Research Question 3: Were there ethnic groups graduation completion rates differences between public and for-profit colleges and size of institution (i.e., small, medium, and large) for health CTE students, as controlled by tuition and books costs, for the 2018-2019 academic year?

Research question number three was addressed by the results obtained from examining the last three hypotheses, g, h, and i. The results from MANCOVA showed significance of $p = 0.03$ for total ethnic graduation rate (Ethnic_Grate). Interaction of ethnic graduation rate and tuition and books costs, ethnic graduation rate and type of colleges, and ethnic graduation rate and size of colleges all showed significance at $p = 0.005$, 0.022 , and 0.03 respectively. However, the interaction effect of ethnic graduation rate, type of college, and size was not significant at $p = .279$.

Since this question is answered as an ANOVA with repeated measures for this variable, ethnic graduation rate, sphericity is measured. Sphericity is the condition where the variances of the differences between all combinations of related groups are equal (Tabachnick & Fidell, 2013). Mauchly's test of sphericity assumption is not met, $P < 0.01$, for Epsilon of Greenhouse-Geisser is equal to $.822$; though Epsilon is below one, it is not that low so we could not reject the null hypothesis and accept the alternative hypothesis that the variances of the differences are not equal; $\chi^2(5) = 22.05$, $p < 0.01$.

Levene's test of equality of error variances tested each dependent variable separately and showed that African American graduation rate is met at $F(4, 52) = 1.467$ and $p = .226$, whereas all other ethnic groups, white, two or more races, and Latinx were not met.

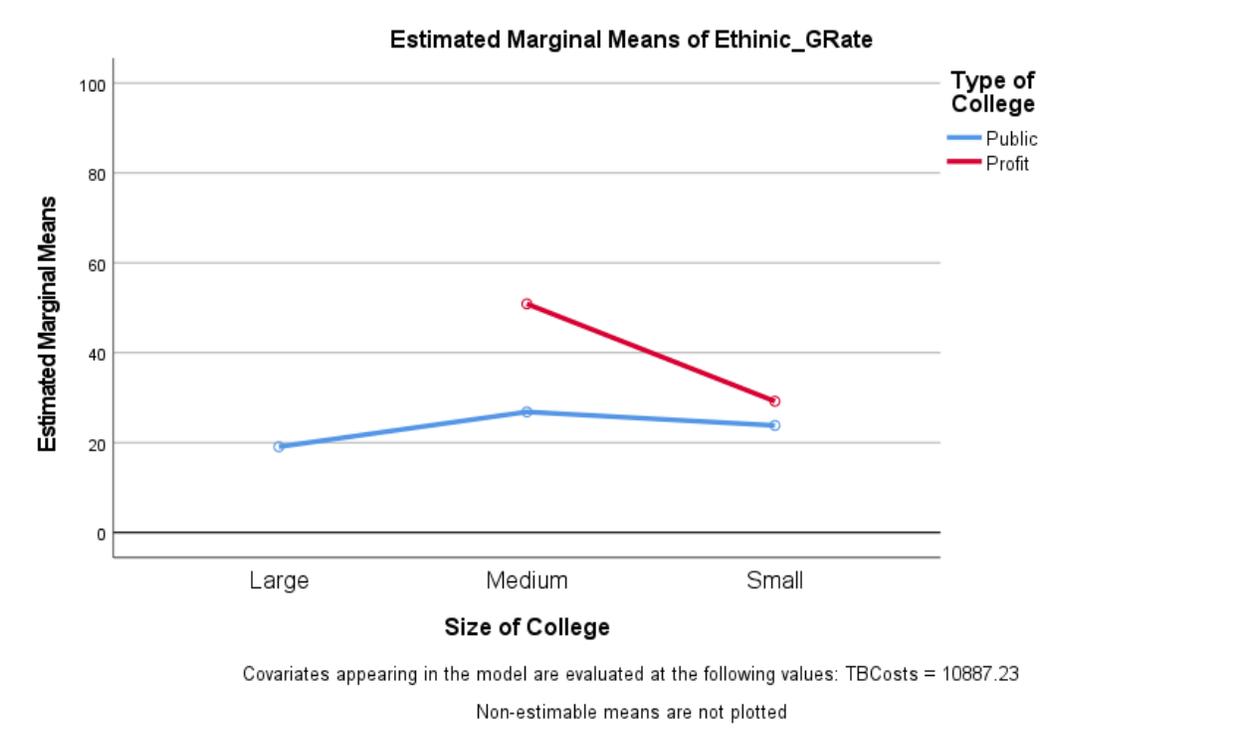
There was a significant difference of ethnic graduation rate across type of colleges, Wilk's $\lambda = .823$, $F(3, 49) = 3.50$, $p = 0.022$, and partial $\eta^2 = .177$. The same applies to ethnic

graduation rate across size of colleges, Wilk's $\lambda = .703$, $F(6, 98) = 3.14$, $p = 0.007$, and partial $\eta^2 = .161$. Even the ethnic graduation rate across costs was significant, Wilk's $\lambda = .774$, $F(3, 49) = 4.77$, $p = 0.05$, and partial $\eta^2 = .226$.

At $\alpha < 0.05$, size was almost significant for ANOVA to ethnic graduation rate at $p = 0.051$, $F(2, 51) = 3.150$, partial $\eta^2 = .110$. All of the other individual ANOVAs per type of colleges and size did not show any significance. Figure 4.8 displays the means of ethnic graduation rate across college sizes and shows the differences in the means.

Figure 4.8

Means of ethnic graduation rate (Ethnic_GRate) across sizes for both types of colleges



When comparing means of the pairs of ethnicity across types and sizes of colleges for each of the African American, white, two or more races, and Latinx; these ethnicity pairs with African American and two or more races showed statistical significance at $p < 0.046$ and $t=2.039$, and white and two or more races at $p=0.001$ and $t=3.363$, and two or more races and Latinx at $p<0.001$ and $t=-4.018$. Minorities, overall, showed higher total graduation rate in FPCs than at PCCs. Minorities, basically of two or more races, need to be paid attention to. Though we do not know what these "two or more races" are, obviously, their academic needs are not met at two-year colleges. African Americans did extremely well at medium size colleges ($M=31.38\%$) compared to at large colleges ($M=21.15$). Similarly, whites did poorly at large colleges ($M=19.15\%$) compared to medium ($M=36.65\%$) and small ($M=32.22\%$). Two or more races reported low mean rates in both large and small colleges, and almost as double at medium size colleges with a registered mean of 32%. Most Latinx students graduated at higher rate, with ($M=40.65\%$) in medium size colleges than in small colleges ($M=38.11\%$), while large colleges registered a low graduation mean rate at 19.31%.

Summary

This chapter investigated 57 colleges, distributed between for-profit and community colleges, in a causal-comparative research design used to determine main and interaction effects between gender, ethnicity, size and type of colleges along total graduation rate of health CTE majors, indebtedness rate, and tuition and books costs as a covariate. After careful examination of the statistical assumptions, a factorial between-subjects multivariate analysis of variance (MANCOVA) was performed to determine mean differences between and across various levels of the selected independent group variables. Evidence of these mean differences for various types and sizes was detected on the main effect factors but not for many of the interaction

effects. Chapter V will explain the findings, implications, recommendations, and conclusions of this study about key performance indicators of the two types of colleges.

Chapter 5: Discussion

The purpose of this study was to compare key performance indicators in both types of colleges, FPCs and PCCs. The study documented secondary data of Pell grants, loans, debt rate, cost of tuition and books, gender and ethnicity graduation rates, total graduation rate of health CTE, student to faculty ratio in classroom, and size of colleges according to general enrollment. This data was mainly retrieved from THECB and NCES websites for the academic year data of 2018-2019. This chapter begins with findings and interpretations followed by a summary. Moreover, a detailed discussion of the results aligned with the research questions will be presented. Limitations associated with the study are presented and general conclusions and implications for research and practice are made.

Main Findings and Interpretations

The final sample of PCCs was set at 35, randomized out of all 50 Texas public community colleges. The FPCs sample was conveniently selected and 23 was the final count, dispersed geographically all over the state of Texas. Selection of both samples was dependent on two criteria: 1) colleges were only one-year certificate or two-year AA degree grantors, and 2) they offer health CTE majors. FPCs were categorized into small or medium sized colleges. None was large. Generally, the sample of both types of colleges was not evenly balanced as PCCs sample had 13 large colleges whereas FPCs had none. Additionally, 35 PCCs and 23 FPCs made the sample uneven. The relationship among the dependent variables of interest, total graduation rate and debt rate (TGRAD and Debt_R) was inversely correlated while using cost of tuition and books (TBCosts) as a covariate. The mean total results across key grouping levels for the

independent variables reported very similar mean differences corroborating with existing literature about the two types of colleges.

Inferential statistics included the findings obtained from the examination of the multivariate analysis across the dependent variables and the main and interaction effects as controlled by cost (TBCosts) as a covariate. The overall effect sizes for the main effect results were considered robust, ranging between 11.3% to almost 42% of the total variance counted.

The following section provides an overview of the specific findings and their interpretations. The first question was designed to examine whether there was a significant effect in total graduation and indebtedness rates across type and size of colleges while controlling for tuition and books costs. Total graduation rate of health CTE was significantly observed across types of colleges. Overall, PCCs graduate health CTE students at a higher rate than FPCs whereas the debt rate was three times as high at FPCs than it was at PCCs. Obviously, these two dependent variables are inversely associated with types of colleges. The higher the total graduation rate, the lower the debt rate at PCCs, and the lower the total graduation rate, the higher the debt rate at FPCs. This finding is consistent with existing literature on academic outcomes in both types of colleges as reported by NCES and THECB. Interestingly, both dependent variables were inversely correlated regardless of tuition and books costs, as if it is automatically expected that FPCs generate more debts but less graduation outcomes than PCCs.

The second research question was proposed to compare gender graduation rates across both types of colleges and all three sizes of institution. Total gender graduation rate across types of colleges was more significant in FPCs than in PCCs. Even at individual male and female graduation rate, FPCs fared better according to the analysis. FPCs graduate more males than PCCs, and more females. Even though FPCs did not have any large size colleges, they still recorded higher gender graduation rates in each of their medium and small colleges compared to those at PCCs. However, both types of colleges graduated more females than males. This is consistent with existing literature but it is not congruent with the previous research question

results of higher total graduation rate at PCCs than at FPCs. This discrepancy could be attributed to two reasons: 1) FPCs might have wrongly self-reported their outcomes data, as such this might have explained the inconsistency of data validity and reliability of FPCs sample, hence the increased gender graduation rate at FPCs. 2) When total graduation rate was measured with debt rate, it turned out to be significant but when gender graduation rate was measured without the debt rate, the results completely switched. However, gender was documented as only female and male categories as reported by the colleges' repository sites. No other gender identification was provided by either type of colleges. Regardless, the finding should be accepted at face value and the researcher needs to inquire about the best practices implemented at FPCs that cater to the two genders, and capitalize on them for better recruitment and marketing of males in these health CTE majors.

The third research question investigated whether there were significant differences between ethnic graduation rates in both types of colleges and across all three sizes. Examination of this result indicated that ethnic graduation rate was significant on all levels of the variables, costs, size, and type; however, there was no interaction effect among the three. Ethnicities across the different sizes of the two colleges, especially when comparing means across sizes showed significant statistical difference mostly in minorities. Two or more races as an ethnic group needs to be assisted and paid attention to at two-year colleges since significant p-values were recorded between them and African American, white, and Latinx. Minorities such as African American and Latinx prefer FPCs' college setting for higher education. In addition, minorities's graduation rate is similar in both types of colleges, though FPCs reported more minority completers than PCCs.

Though consistent with documented literature on minority enrollment in FPCs, the ethnic graduation rate of minorities is not. It may have been attributed to the size as an independent variable and the large size being excluded in the FPC's sample. It is safe to conclude, however, that minorities prefer small to medium size colleges as these colleges are less intimidating and

overwhelming, and they ultimately succeed and complete their degree there. Delving into the findings, PCCs would need to tap into the best practices adopted at FPCs to successfully recruit and retain minority students and follow suit.

Discussion of Supplementary Findings

When measuring gender graduation rate across type and size of colleges but adding Student to Faculty ratio (S_F) as a covariate instead of costs, results indicated that there was a significant difference at the male graduation rate, of *P*-value of 0.035; however, none was significant for female graduation rate. Another dimension is then thrown in the mix of gender graduation rate and that is that males usually do better in smaller classrooms and small to medium size colleges. This variable, Student to Faculty Ratio, (S_F), becomes irrelevant when students enroll in health CTE programs in either type of colleges, because naturally, these programs are relatively small compared to their academic transfer programs counterparts. Their admitted cohort of students ranges from 12 to 28 students. Student to faculty ratio becomes a very important variable, however, during clinical and laboratories placement at the different health facilities for students' practical training when students are receiving clinical instruction at the different health facilities settings.

Summary of Study

The study was designed to examine key performance indicators across college types and sizes for health CTE majors. Total graduation rate of health CTE and debt rate are strong indicators of student success at PCCs. Total graduation rate is inversely proportional to debt rate

in both types of colleges. The higher the total graduation rate, the lower is the debt rate. The reverse is true at FPCs.

Size was deemed a significant variable for gender and ethnic graduation rates as small and medium colleges had higher effects on these dependent variables. However, the comparison of the two types of colleges over size is not quite equitable as FPCs had no large sized colleges in its sample. Large size colleges had a negative influence on the gender and ethnic graduation rates at PCCs, but its absence at FPCs had a positive effect on gender and ethnic graduation rates. For the present study, a causal-comparative study was used. However, results led to more indicative than causal relationships. Two main dependent variables were examined to determine main and interactive effects between gender, ethnicity, type, and size of colleges on total graduation of health CTE and indebtedness rates while using costs of tuition and books as covariate.

Limitations

There are several noteworthy limitations of the study that need to be acknowledged and discussed. The limitations of the study are those characteristics of design or methodology that impact or influence the application or interpretation of results of the study employing secondary data (Theofanidis & Fountouki, 2018). Since the study focused on only two-year colleges and not on any 4-year colleges or universities, results were not generalized to those institutions and the observed results could not be assumed that they would be applicable to all institutions of higher education. Additionally, the study sample was limited to only students who belonged to CTE health programs in both entities, for-profit and community colleges, and did not represent all CTE programs of any two-year and/or one year certificate programs. There was an uneven distribution

of samples of the two types of colleges; one was 35 for PCCs and the other was 23 for FPCs so there was a lack of significant interaction effect power. Additionally, for-profit colleges were categorized into 14 medium and 9 small colleges whereas PCCs had 13 large, 17 medium, and 5 small colleges. Maybe there was a need to remove all 13 large public community colleges from the samples and then conduct the statistical analysis but then the effect size would have been misreported. The colleges studied are also geographically located in the state of Texas and may not be representative of colleges in other states where state government regulations might be completely different and state financial reimbursements and calculations might have been weighed heavier than that of the state of Texas. However, at the same time, the findings could be replicable in the larger states of the union similar in size and demographic distribution as Texas, such as California and Florida. Furthermore, the data used for this study was secondary data retrieved from a state's reporting website, THECB, where a repository of graduation, licensure data, and job placement are delineated by higher education entities. This data was only limited to the public community colleges of the state. Accuracy and fidelity of data was limited since each individual community college self-reported these performance measures, and might be based on an honor code; however, state financial allocation of funds were dependent on these performance measures so accuracy of numbers was highly likely and usable for PCCs but not for FPCs. Licensure data of health CTE graduates at the two types of colleges should have been reported but the data was not available for the FPCs, and as such, this could have been used as a significant variable of interest. Lastly, FPCs data were extracted from NCES after checking each of the college's website and found nil to nothing on their KPI; therefore, data were relied on these sources, and might not have been 100% accurate. This is especially important in gender graduation data reported by the FPCs for this study. Its reporting was assumed to be inflated by the respective FPCs.

Conclusion

This following section will discuss research and practice implications, potential study modifications, and recommendations for future research based on study design and findings.

Implications for Research and Practice

The study findings suggest that type and size of colleges had relatively good reliability in terms of internal consistency. Though the samples were assumed to be representative of health CTE colleges, lack of representation of large size in one of the types of colleges made external validity hard to achieve. The two original samples were unevenly distributed from the start. Nonetheless, the findings suggest that debt rate and costs are not basis for health CTE enrollment and graduation but size is, as identified in the means of gender and ethnic graduation rates across size. Across college types and sizes, gender and ethnic graduation rates are favorable for the FPCs. This completely contradicts the existing documented literature. Nonetheless, these findings should provide PCCs with an impetus to improve on their recruitment and marketing of health CTE programs to mainly minorities and more males than females. Naturally though, health occupations are more prevalent in females as nursing, medical assistants, medical billers and coders, surgical technicians, etc. are all female-driven. Rarely seen are males' minorities, two or more races, in the health occupations fields. At PCCs historically, there has been consistent low enrollment rate of these groups aforementioned in health CTE majors.

This study's findings could assist college personnel in understanding enrollment and completion trends for health CTE students. College students seem to be disinterested in costs and debt rate, as long as they find a small or a medium size college to accommodate their academic needs. Perhaps, informational workshops highlighting these characteristics (smaller classes, more intimate colleges, and better academic outcomes) could be offered to attract potential gender

(mainly males) at PCCs. If we were to select a staff personnel that minorities can identify themselves with to head these gender equity workshops, then maybe minority males would be encouraged to enroll at any of these health programs (Tolliver, et al., 2019). Apparently, marketing these characteristics has been successfully achieved at FPCs, especially when they have a dedicated budget for marketing and advertisement, unlike PCCs that have minimal budget for advertisement. Often times than none, the advertisement is generic, general, and lacks targeted messages to minorities, males over females. Almost always, the marketing message gets diluted and gets lost amidst the largeness of the PCCs. There is definitely a need for targeted messaging at the health CTE division level. For example, college health CTE counselors can create attractive and more targeted orientations to potentially recruit and retain these health CTE students. Historically, health support and technical occupations have always been more prevalent in females than males. To achieve gender equity in health CTE programs and occupations, PCCs need to initiate male geared workshops to assist in retention, tutoring, and adequate academic preparation so we can close the gaps between gender completers. Workshops such as these have been very successful at recruiting males (Tolliver, et al, 2019). This finding could become a catalyst for further investment in institutional marketing and equitable learning.

A future study could be replicated and enhanced by the following four recommendations:

- 1) Select medium and small colleges for both types of colleges,
- 2) Add licensure data of health CTE as a dependent variable in addition to total graduation rate of health CTE,
- 3) Do not rely on secondary data and instead seek primary data responses from FPCs as the federal government does not currently require this report, and
- 4) Measure student services at both types of colleges such as tutoring, advising, and mentoring and add it as a variable in the study (Harrell, et al., 2018). This kind of study might generate more generalized results in all colleges around the state

and across the nation. Federal government via the U.S. Department of Education should be consistent in its requirements for higher education institutions to all colleges by mandating FPCs to report academic outcomes such as graduation, licensure, and employment or/and transfer to 4-year universities. If both types of colleges are receiving the same financial assistance without taking into consideration size or state and city policies for PCCs, then it is only fair to expect the same accountability from the FPCs. In this manner, the playing field would be evened out and comparisons could be then measured on every level for the two types of colleges. FPCs charge more for tuition and books than PCCs do, this allows them to keep their classes and programs small. Costs were higher at small and medium FPCs than at PCCs. The lesser the number of students admitted at FPCs, the smaller their class size, and the higher their gender and ethnic graduation rates would be.

In contrast, PCCs have open enrollment and serve the larger community in every county or city; as a result, they need to accept whoever is willing to enroll as tuition is more affordable for the masses. More importantly, the county also oversees the public college, so PCCs are bound by external factors such as city/county, state, and federal governments. State government dictates higher enrollment and retention numbers and rates as they would be proportional to the financial reimbursement for PCCs. If the numbers are low, then PCCs will not receive the adequate funding to conduct work. In contrast, FPCs answer to none and they are not regulated by state or county.

Furthermore, FPCs have destabilized my perceptions of what constitutes a good higher education institution. Nowadays, FPCs have become a force to reckon with. To compete with them, PCCs need to cater for minorities mainly African Americans, Latinx, and mixed races, advertise more, highlight smaller health CTE classes, and create more customized and

individualistic services to attract potential students. The findings of this study forced the researcher to unfold her implicit biases against FPCs and start advocating and initiating policy' changes on the level of federal government through lobbying via TACC (Texas Association of Community Colleges) to change the status quo. Since the researcher is an employee at PCCs, direct lobbying for federal government change is not allowed. Instead, the college administrator will have to tap the resources of a representative to lobby on behalf of the PCCs. PCCs and FPCs are totally contradictory on every level as it was stated in this chapter. These differences are then the catalyst for the higher education administrators, faculty, and staff to find better ways to market PCCs and its services, capitalize on the strengths of the PCCs and then highlight them to the targeted health CTE students.

In conclusion, through ITO as a guiding theoretical framework for this study few external and internal factors of these institutions were identified through the analysis. Based on the existing findings of this study, the following recommendations are suggested: 1) Smaller classes in health CTE (Maximum 12 students to 1 faculty) both didactic and clinical courses. 2) Policy change at the community college level to limit CTE health enrollment at PCCs to be comparable to that of FPCs. Perhaps, consider health CTE division to be a mini-college, of approximately 500 to 3000 students and then compare it to a FPC of the same size on ethnicity and gender KPI. 3) Policy change at the federal level, request a common set of KPI accountability measures for colleges receiving financial aid. This should include both profit making and public community colleges. 4) Gender equity workshops for males enrolling in health CTE should be implemented and measured. Offering these services to this target audience may increase their chances of completing health program and their capacity for academic success and employment at the different health facilities. 5) Track licensure outcomes by state for all colleges, FPCs and PCCs.

6) Offer extensive and targeted student services workshops such as customized, one-on-one advising, and tutoring.

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Vita

Souraya Hajjar was born in Beirut, Lebanon. She completed her schooling at a French nun Catholic school. At 17, she enrolled at the American University of Beirut but had to leave at the end of her first semester because of the war. She then immigrated to the States, decided to come to El Paso, Texas as her grandparents were living here at the time. Once in El Paso, she enrolled at UTEP to complete her undergraduate studies in Biology and Chemistry. Subsequent to that, she enrolled at UTHSC at Houston for graduate studies in Public Health. During this period, she taught Math and Sciences at the high school level, then became a private school director for 7 to 12 grades. In 2000, she was hired at El Paso Community College in the health and sciences division. Two years ago, she was promoted to a deanship of health CTE, Math & Science division. In addition to her deanship at the college, Souraya is the HIPAA compliance officer and a certified health educator for the college. She conducted several health literacy programs at the different school districts through a grant funded by EPDNHF. She also trains students at the college about RCR, responsible conduct of research. She presented at different regional, state, and federal conferences about health literacy and competency. She has published articles about health, culture, and religions of Lebanon. She guest-taught at the schools of Public Health and Cultural Studies at UTEP.

Souraya speaks five languages. English is her fourth acquired. She loves traveling learning about different cultures and people. She plans on continuing to work at the college and use her newly acquired degree for program assessment and evaluation of health and STEM programs.