Distance Learning in Higher Education:
Commitment to Distance Education in Colleges and Universities across California

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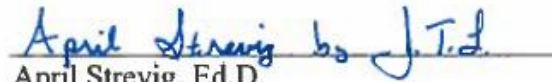of the College of Arts and Sciences

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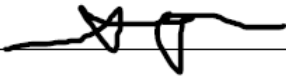Professor of Political Science

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ABSTRACT

This study examines the research question of what institutional characteristics as well as demographics predict the level of commitment to distance education among colleges and universities in California. For the study 4-year, baccalaureate level and above colleges and universities as well as community colleges in California were observed. The dependent variable in this study was the commitment to distance education, as determined by the percent of distance education programs measured out of total academic programs the schools respectively offered, the percent of students enrolled exclusively in distance learning programs, the percent of undergraduate students enrolled exclusively in distance learning programs, and the percent of graduate students enrolled exclusively in distance learning programs. The independent variables were the percentage of students receiving any type of financial aid, the percentage of students receiving Pell grants, the percentage of undergraduate students aged 25-64 years, total enrollment, the percentage of Asian students, the percentage of Black students, the percentage of Hispanic (Latino) students, the percentage of White students, the percentage of students admitted, average salary equated to 9 months of full-time instructional staff, the percentage of students submitting an SAT score, SAT score, ratio of students to faculty, and the categories of institutions such as public vs. private, for-profit vs. non-profit, 4-year vs. community college, and religious vs. secular. These institutional factors are gathered by the IPEDS (Integrated Postsecondary Education Data System) in relation to the levels of distance learning commitment. All of the observed institutions were evaluated with these variables and data were collected accordingly from this database system. This research project conducted ordinary least squares (OLS) regression

analyses, correlation tests, and difference of means tests, as well as calculated basic descriptive statistics such as means and standard deviations, to assess whether the independent variables displayed statistically significant relationships with the dependent variables of distance learning commitment.

The key findings from the difference of means test are that private institutions are more likely to have higher levels of commitment than public institutions and for-profit colleges are found to have higher levels of commitment than non-profit colleges. This study discovers that the 4-year institutions offer a significantly higher percent of distance programs than the community colleges and that the religious institutions provide a higher percent of distance programs than the secular institutions. Also, those variables that are significant (the percentage of undergraduate students aged 25-64 years, the percentage of Asian students representing minority students, and the institutional category of public vs. private) in the regression models when examining all the institutions of higher education in California maintain their statistical significance when excluding institutions that are 0% and 100% online as well as smaller institutions. Meanwhile, there are mixed findings for the impact of financial aid. There was a positive relationship in the OLS regression analyses between total enrollment at an institution and the commitment to distance education. The results of this study can be informative for the future of higher education as online education becomes more prevalent.

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ACKNOWLEDGEMENTS

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Chapter I

INTRODUCTION

Introduction of Topic

Technology is a fascinating, burgeoning area of modern society. The influences

and innovation within this field have pushed the world into a new era of technology and

discovery. Expectedly, this sector has profound impacts on all industries and the various

groups of individuals within them. Over the centuries and even the past few decades,

technology has undoubtedly impacted the field of education as well. In particular,

institutions of higher learning, their constituents, and related stakeholders have also seen

the influence of technology on education, performance, and the way the world

approaches teaching and learning.

This technological influence on the education sphere has resulted in the

burgeoning and rapid development of distance education and online learning. Distance

learning is more prevalent than ever given that online tools and the utilization of the

Internet have permeated every corner of students' lives for a variety of purposes, ranging

from daily uses to professional intentions. Although the literature has not yet been able to

fully examine this new field of distance education due to its relatively young age, current

sources indicate that support and development activity for this sector is necessary, as the

field has been rapidly developing due to the accessibility, convenience, and other benefits

that online programs offer to learners, including those who do not necessarily have to

identify with the traditional, on-campus student population. Sources are increasingly

indicating that the adoption of distance learning programs is optimal for institutions of higher education.

Because the world is in a truly online era, and because the past few decades have experienced so much development in terms of how technology can improve the human experience, postsecondary institutions and faculty members will naturally experience a wide array of notable benefits from embracing this field, according to various researchers. Fortunately, some institutions have already started being more open-minded to this new model of education and have begun to incorporate more and more distance learning programs into their systems. Particularly in regards to the interests of various stakeholders (instructors, administrators, constituent students/families, and the institutions themselves), it may be of significant research relevance for parties involved to better understand the presence of distance learning in higher education and its relationship to various institutional aspects and other related factors. Understanding and assessing postsecondary commitment to this new education field, along with which institutional characteristics in particular are significantly related with the presence of distance learning in colleges (as well as whether they predict lower or higher levels of institutional commitment to distance education), is of key interest.

Research Question

The following research question will be examined:

Q: What institutional characteristics predict the level of commitment to distance education among 4-year, baccalaureate level and above colleges and universities as well as community colleges in California?

Overview of Education and Technology

      Higher education is hailed by scholars and students alike as the gateway for upcoming generations of Americans and bystanders who admire the American collegiate system; a portal through which human minds can grow, and in turn, contribute to society. Interestingly, it is also a field that is closely tied with the rest of society's developments; scientific, cultural, political, and sociological influences shapes the malleable landscape of higher education in ways that result in both positive and negative outcomes.

      In recent decades, the field of education has evolved significantly to embrace a new wave of technologically advanced learning and teaching, of which 'online' or 'distance' education is a large part. Elements of learning and instructional strategies have been significantly influenced by the evolution and progress of technology and education platforms in our society today. The Internet is a major influence on how the higher education sector ebbs and flows. Education systems now depend on and even utilize various types of digital media. Brian Solis (2012) refers to how millions upon millions of connections and activity are taking place on the Internet in the mere span of just minutes.

      Even over the past 5 through 10 years alone, the use of online tools and other relevant educational technology within student groups has risen significantly. The Nielsen Company reports that this increase in the past 5 years is over 63%, and that the "growth rates. . . outpaces [the] overall Internet population" (1). Studies conducted as far back as May 2009 show that even earlier generations, i.e., children ages 2-11 alone, make up "nearly 16.5 million, or 9.5% of the online universe" (2). These statistics rise even more when those generations reach the teenage years, and so on and so forth, reaching the peak with college students and mature learners (Nielsen, 2009, 1-2).

'Online' influence from families are also said to contribute to the frequent Internet usage of students. Only three out of ten young people are reported to experience rules regarding the use of online platforms and digital tools, according to a study by the Kaiser Family Foundation. Eight to eighteen year olds were reported to "devote an average of 7 hours and 38 minutes to using entertainment media across a typical day," which amounts to more than 53 hours per week (Lamontagne et al., 2010, 1). Interestingly, a little more than half of the students surveyed reported that they already used some kind of online tool or technology that is also used for distance education, either most or some of the time while they were doing their homework.

In particular, institutions of higher education have been arguably the most influenced in this respect. Baird and Fisher (2006, 5) describe the development of a "burgeoning digital pedagogy" that is increasingly becoming visible within the current generations of students. Researchers took the time to assess the effects of such emerging technologies on curricula and instruction. Through their reports, they argued that students are now learning differently due to these new forms of web communication, and they attempted to assess how these education platforms could affect such forms of neomillenial learning and enhance usage experiences for students who are part of such learning environments.

The various digital tools they studied included popularly known online learning devices such as online encyclopedias, smartphone technologies, blogs and online discussion sites, podcasting and streaming content, etc. Interestingly, research by Baird and Fisher (2006) conclusively indicated that students are creating wide learning communities, revisiting content, etc. which are initiated and fostered by the usage of

these digital tools. It was discovered that neomillenial students (who are used to and reliant upon online technology) now expect to be engaged in content and material that motivates them to learn interactively. Distance education programs were seen to offer this allure, resulting in the current wave of interest in distance education that can be seen today (Baird & Fisher, 2006).

Purpose and Significance of Study

Undeniably, educational systems have experienced significant overall impacts due to the arrival of new-age technologies and various innovations in distance learning today. While many traditional institutions of higher education embrace this field, the degrees to which they are committed vary, as can be seen in the differing amounts of distance education programs that these universities offer in comparison to the total, overall amount of academic programs they offer. Some schools have warily only implemented a few programs, while others have more enthusiastically chosen to offer ample amounts of distance learning programs.

This project intends to detect and assess several institutional characteristics as well as demographics present within the observed colleges and their relationship(s) to the different levels of commitment these schools have to distance education, as measured by the percent of distance learning programs that the institutions offer in comparison to the total number of academic programs they offer, the percent of students enrolled exclusively in distance learning programs, the percent of undergraduate students enrolled exclusively in distance learning programs, and the percent of graduate students enrolled exclusively in distance learning programs. In studying the presence of distance learning/online courses in institutions today, this study will seek to ascertain what results

can be discovered when analyzing the expected trends/relationships between distance learning and certain institutional aspects within these universities. Evaluating postsecondary commitment to this new education field of distance learning as well as which institutional characteristics and factors are related to these commitment levels (and in what ways, positively or negatively) could provide important insight and information in regards to trends, implications, and administrative decisions for the field of distance learning.

Literature illustrates that institutions committed to distance education and forms of online learning in particular have been enhanced or affected in specific ways. While some still cast distance education aside in favor of traditional instructional strategies, researchers have discovered a host of positive effects from distance learning commitment in institutions today. Among these benefits and advantages include much higher levels of academic motivation and other positive characteristics among both student groups and instructors. Institutions who are more 'committed' to distance learning can expect to experience some of these benefits and advantages, while others who are more reluctant and not as committed may not.

For instance, in an environment where elements such as interaction between instructors and classes depends on factors like these, scholars such as Albert Bandura (1997, 1993) were welcomed when they assessed and explained how the conceptual framework of traits like self-efficacy, self-belief, and motivation play a major role in youth and student development. In other words, those higher levels of traits like self-efficacy and academic motivation correlate with higher levels of student achievement and even overall institutional performance. Conversely, lower levels correlate with poor

performance and attitudes.

Zimmerman and Clearly (2006) also argue that higher levels of these characteristics resulted in desirable and positive academic behaviors and institutional results, including higher academic, numerical scores and even greater indications of ambitions for entering and performing well at universities. Higher levels of other positive behavioral traits, such as persistence, were also observed (Jinks & Morgan, 1999). These and other results brought to light through previous studies in recent years indicate that it is advisable for universities to embrace and develop distance learning programs and online education innovations.

Stakeholders who are invested in this field of distance learning, including students, administrators, and organizations of educational governance, may be highly interested in observing the characteristics and institutional aspects of schools which display higher levels of commitment to distance education. Understanding which institutional characteristics are related with or seem to predict higher levels of distance learning commitment may be useful for students who are searching for colleges with enough distance education opportunities, administrators who are seeking to make relevant structural changes for improved institutional performance, or even governing organizations who are endeavoring to make key policy decisions. As such, analyzing collegiate commitment to distance learning can also be of importance for colleges who may specifically be seeking to improve their commitment levels; or alternatively, further open the door for continued assessment into why levels of commitment at certain colleges may be lower than desired or for the development of strategies on how to continue developing distance education implementation.

In conclusion, the field of higher education is in a constant quest for better achievement, more development, and further innovation. The world is in a truly 'online' era, and as a result of significant developments over the past few decades, universities have received lasting impacts and experiences that will continue to manifest themselves in the decades to come. The influx of various distance learning devices and varied online networks and communities have ensured that the ways in which students learn and teachers teach will be changed. Consequently, distance learning has emerged to grasp a significant role in the field of higher education and will likely continue to impact it in the years to come. This study will seek to contribute to the understanding of distance learning in institutions of higher education and foster some familiarity as to which institutions (and certain institutional characteristics) seem to be related with more distance learning involvement. Institutions who are highly committed to distance education (or conversely, are not as highly committed) may share several common traits, and this study seeks to explore this further. Furthermore, understanding which institutional factors in particular may predict higher or lower levels of commitment to distance education can be of importance to stakeholders who wish to better understand or embrace the implications of the field.

Definitions

The following are the definitions for several key operational terms utilized throughout this research project:

A. <u>"Distance" or Online Education/Learning </u>(can be referred to as "distance education" and/or "online learning" interchangeably throughout the study): Programs, instructional strategies, and the practice of education that utilizes or depends on

various distance or online/digital tools and methods of learning and instruction, utilized in this study when discussing the field of postsecondary education.

B. "Distance" or Online/Digital Tools (also in reference to educational technology): Tools and platforms that are or can be utilized within the field of distance learning and online education that facilitate both teaching and learning processes and facilitate both instructors and students in the previously mentioned activities.

C. "Traditional" Learning/Education: Term used to refer to the programs, instructional strategies, and the practice of education at the universities that are offered through on-campus, traditionally accepted forms of learning that have been in practice in educational institutions even before the advent of distance learning. Such as face-to face, classroom learning. Used in contrast to terms like "distance education" and "online learning."

D. (Institutional) 'Commitment' to Distance Education (or distance learning, or online education) Represented at the institutions in this study by the percent of distance learning programs they respectively offer out of the total academic programs, the percent of students enrolled exclusively in distance learning programs, the percent of undergraduate students enrolled exclusively in distance learning programs, and the percent of graduate students enrolled exclusively in distance learning programs. Especially, the percent of distance learning programs can be an effective representation because, mathematically, this percent depicts the presence one value has in another; in this case, how large the presence of distance learning programs is at a college in comparison to its programs overall.

E. Colleges and Universities: Institutions of higher education that subscribe to 4-year, baccalaureate and above and on-campus/non-distance forms of postsecondary learning and instruction. May currently offer distance education programs or none, or may be willing to delve deeper into implementing distance education programs.

F. Community College: An institution of higher education that is frequently a 2-year government-supported college that offers coursework and requirements up to the level of an associate degree; typically, a non-residential junior college offering a curriculum fitted to the needs of the community in its immediate surroundings, often providing higher education opportunities for nontraditional students.

G. Institutional Aspects/Factors/Characteristics: Characteristics shared by and evaluated from the institutions of higher education discussed in this research that may or may not have an effect/relationship with the levels of "commitment" the schools have to distance learning. They serve as independent variables in this study and may include the rates of total enrollment, ratio of students to faculty, institutional sector levels, or percentages of nontraditional students in the current student populations, for example.

H. Ratio(s) of Distance Education Programs: The mathematical product of dividing the total number of programs overall by the number of distance programs offered by higher education institutions, which can be seen in the form of decimals and fractions. Lower ratios of distance education indicate that there is a smaller presence of distance education programs in the overall school's academic offerings, while higher ratios indicate that there is a larger presence of distance learning in terms of the course offerings available and in comparison to the offerings overall. The percent converted

from this ratio is used in this research study to represent the levels of institutional commitment to distance education possessed by colleges.

I. Stakeholders: Parties or individuals who may have a relevant interest or concern in a topic, idea, or field; i.e. stakeholders of distance education may be students, instructors, administrators, governing bodies in the field of education, etc.

J. FTIC: acronym standing for "Full-Time in College," utilized in this study when discussing the institutional characteristic of FTIC students submitting SAT scores (full-time in college students submitting SAT scores) as labeled by the IPEDS; can be interchangeably referred to as simply "full-time" in this study.

K. Institutional Sector Type: categorization of postsecondary institutions into levels depending on whether they are public or private, non-profit or for-profit, 4-year or community college, and religious or secular. For the independent variables of institutional sector types, public institutions are coded as 1, and private institutions are coded as 0; for-profit institutions are coded as 1, and non-profit institutions are coded as 0; community colleges are coded as 1 while 4-year colleges are coded as 0; religious institutions are coded as 1, and secular institutions are coded as 0.

L. Students-to-Faculty Ratio/Student-Faculty Ratio/Ratio of Students to Faculty: the mathematical measurement gained by dividing the number of students in the enrollment body by the number of faculty members employed by the school; expressed in this study through decimal forms. This measurement indicates how many faculty members are available to cater to students; lower ratios of students to faculty indicate that there are more faculty members available for the students, while

higher ratios of students to faculty indicate that there are less faculty members available to cater to the students.

M. "Nontraditional" Students/Adult Learners: Members of the collegiate student body that are within the ages of 25-64 years and are identified in contrast to their "traditional" counterparts, who are within the ages of 18-24. Terms like "adult learners" and "mature learners" can also be used.

N. Total Enrollment: The estimated overall size of the total number of students who are enrolled at the college or university; this measurement may include all enrolled students embracing all major classifications and levels; for instance, undergraduates and postgraduates, part-time and full-time learners.

O. Minority College Population: This refers to non-White college students represented by the Asian, Black, and Hispanic ethnicities of college students in this study.

Organization of Chapters

This project is organized into five distinct chapters. The first chapter of this project introduces the topics at hand that this project is based upon, including distance learning, the use of distance education technologies within institutions of higher education, and the importance of researching such topics. The second chapter of this project focuses on providing a review of the current literature and material regarding the foundations of this study. Discussions regarding distance learning and its presence in traditional universities will take place.

The third chapter of this project describes and discusses the methodology behind conducting this project. The research goals, hypotheses, and expected outcomes of this particular project are introduced, helping to preview the future contents of this

dissertation. The fourth chapter of this dissertation describes the immediate findings and results of the study and the testing of the data. Lastly, the fifth and final chapter concludes the project material by providing a discussion of the findings, presenting conclusions and recommendations, reviewing the previous chapters, and summarizing the project in its entirety.

Chapter II

RESEARCH ON INSTITUTIONAL COMMITMENT TO DISTANCE EDUCATION

This chapter discusses elements of the study's key topics, themes, and elements of various literature sources that contribute to the framework of the research conducted in this project. The study proposed and undertaken by this project seeks to evaluate the presence of distance learning in the 4-year institutions of higher education and community colleges observed in this study and how they are related to certain institutional characteristics or factors, building from the ideas gleaned from reviewing the literature. The literature discusses how distance learning opportunities and programs provide an array of benefits for universities and their constituents, how universities offering such programs are seen to experience tangible benefits, and that various schools have now begun to develop or incorporate distance learning programs on their campuses.

Various research studies and literature have come into light within the past decade, and they help illustrate many of these potential, positive impacts. In the same way, literature indicates that various institutional characteristics and factors may be related to the levels of commitment institutions have towards distance education. These literature sources are reviewed in this section of the project. Technology in society and the education field are discussed, as well as the responses and reactions of both students and instructors to these forms of distance learning. The literature illustrates various potential developmental impacts that distance education may have; however, certain sources indicate that the field of distance learning experiences restrictions and criticisms

due to several potential disadvantages or negative outcomes that critics fear.

Fortunately, literature sources also respond swiftly to these criticisms and discuss the negative impacts to such restrictions on distance learning avenues as they advocate for an inevitable transition to pedagogy based on distance education. This advocacy is further fueled by various examples of distance learning successes that proponents tout, illustrating how the positive impacts of distance education not only outweigh, but also negate certain discussion points offered by the critics. Various sources of literature also discuss certain aspects and characteristics of colleges and universities that participate in distance learning and how these may affect the participation and involvement of these schools, as well as their attitudes and perceptions regarding the distance education field as a whole.

An extensive review of the literature indicates that many stakeholders in the field of higher education believe that institutions of higher education are increasingly entering into a new paradigm of learning and teaching that is illustrated by the burgeoning field of distance learning, which is discussed frequently as a new era of digital pedagogy that is heavily influenced by digital media.

Technology in Society and Education

The rise of technology in the general society has impacted the field of education in various different ways. Erik Qualman discusses in his reports that the number of social media users found on popular networks (such as Facebook) surpasses the number of several countries' populations added together. Large majorities of high school and college students use social networks like these, and numerous middle-school students also opt to even disregard the listed age rules to register for and use such profiles

(Qualman, 2011).

Research shows that it is necessary to understand these online tools and other forms of distance learning that have permeated the field of education; these all have the potential to make the biggest impacts on the evolution of education, simply due to the sheer number of people they can reach out to. One study's results showed that every 20 minutes, "1.9 million status updates are published, 2 million friend requests are accepted, 10.2 million comments are shared 1.6 million Wall posts are published, 4.6 million messages are sent," etc. Such platforms and their messaging/chat and commenting/group functions take up an enormous chunk of students' lives, either in the form of social entertainment or through formal educational connections (Solis, 2012, 18-19).

Popular online tools like Google, Twitter, blogs, and other functions like YouTube are widely used as well. These devices are inevitably taking over the 21st century lifestyle, and it seems increasingly necessary for schools to embrace them rather than reject them. Solis (2012) writes that, "if you can't tweet 'em, join them" (27). Even more importantly, excerpts from literature assert that online technology is an ideal platform for effective, modern-day motivation, positive behaviors, and academic performance in the classroom. Teachers are frequently told to be adaptive, and according to Solis (2012), being 'adaptive' means learning the "essence of change," and "embracing this reality allows us to compete. . . for the future" (278).

Therefore, traditional schools which embrace distance learning programs and educational technology and actively incorporate them into their academic programs may see the levels of motivation and performance rise among their students, staff, and the rest of their respective constituencies. Expectedly, most are heavily familiar with and enjoy

popular online tools today even outside of education, so it seems natural that schools would embrace distance learning more and more, even displaying more preference towards distance education programs over other, traditional learning methods (monotonous reading, listening, note-taking, etc.). Because distance learning using such educational technologies would involve more hands-on activity and direct, modern communication with students, teachers would possibly achieve higher levels of achievement as well. Institutions who are highly committed to distance education (or conversely, are not as highly committed) may share several common traits, which this study seeks to explore.

Instructor Responses and Reactions to Distance Learning

These sentiments were explored when Balyun Chen and Thomas Bryer conducted a study on the attitudes and responses of teachers regarding using distance learning technology for instructional purposes. Noting that online tools are not yet used as much, or to maximum potential, in educational strategies and settings (while being a much more prevalent part of the rest of life in general), the researchers explored the use of digital education platforms by instructors in the field of public administration at an institution which displayed a high level of commitment to distance learning. Eight teachers were interviewed through phone calls, and were asked questions relating to their experiences as well as perceptions about how distance learning technologies affected the teaching and learning processes. Instructors were asked what tools they used, why they used them, for what instructional strategies they chose to integrate online tools in formal learning, what concerns they had regarding the use of these tools for teaching, and what strategies they had in place to possibly mitigate these concerns. Fifty-seven faculty members from 28

universities also completed mail self-administered surveys that were sent back to these researchers (Chen & Bryer, 2012).

Some criticisms that immediately can be seen are that a larger, consistent sample size should have been used to capture a wider array of responses (there were only eight phone respondents), and in-person interviews would additionally have been conducted. Researchers could probably have better gauged the levels of positive behaviors through a more conversational and 'idea-bouncing' format, especially if the teachers were truly interested in those tools. Furthermore, including a few more questions regarding their physiological and emotional states and what they physically observed from their students would have been informative as well.

Nevertheless, the data initially showed that all of the instructors utilized these distance learning tools for professional purposes and even already in their personal lives. Overall, attitudes towards using distance learning tools for teaching in particular were somewhat mixed, and some interviewees expressed that they did not feel like there were any specific academic benefits. However, a definite majority saw "added learning advantages" (Chen & Bryer, 2012, 93) in general and preferred to encourage students to be involved in such distance learning for the sake of creativity improvement; seven out of the eight telephone survey participants mentioned these motivations. Discussions and collaborations were the instructional strategies that were most often conducted using distance learning tools, and several instructors admitted that using some of these platforms for direct teaching (versus collaborative activities) did not yet seem to be significantly advantageous (Chen & Bryer, 2012).

Some responses even indicated that distance learning was still believed to be an

informal presence in the field of education, fueled by personal interests rather than educational motivations. Overall, it is interesting to observe how even the skeptics seemed to realize the potential advantages of using these platforms in one way or another. Realizing the potential of creativity helped raise the levels of motivation and performance within the instructor group. The instructors showed higher levels of belief in self-performance, confidence in teaching, and more positive approaches to their classrooms and students, which is notable for researchers who seek to assess the characteristics of instructors at an institution with a high level of commitment to distance learning (Chen & Bryer, 2012). This study would be desirable for replication and would be procedurally feasible; it would be especially insightful to assess instructors in other fields, as well as other grade levels (i.e., high school).

Student Responses and Reactions to Distance Learning Programs

Through their project, Holcomb, Brady, and Smith (2010) tried to respond to critics and accusations that digital tools like social networking sites (SNS) and forums found in distance learning should frequently be banned from educational environments because of privacy and safety risks. Through their study, they also desired to observe the true effects of such instructional formats on students and implemented an alternative social networking site in a fully distance education setting (much like the ones explored by the instructors in one of the previous studies). The researchers postulated that some common safety concerns of online networks (such as being preyed on by sexual predators) are "significantly exaggerated" sentiments and are not as serious as the most vocal critics have asserted (476).

These researchers administered an online/web survey to 50 graduate students that

were taking part in distance learning programs through North Carolina State University's College of Education, which participated heavily in and was highly committed to the field of distance education. The participants indicated their level of agreement to each survey question on a four-point scale (strongly disagree, disagree, agree, and strongly agree). Interestingly, most of the students (70%) were using a platform like their current learning system for the very first time (477). Various questions regarding the themes of communication, collaboration, convenience, and reflection were asked.

Intriguingly, the results indicated how most of the students had elevated levels of academic motivation and an element called self-efficacy; most believed that these forms of distance education increased their levels of collaboration overall and "aided communication outside the traditional confines of the classroom," as well as the areas of reflection and convenience. While most of the study participants indicated that they believed time was a drawback (that it took a little too long for the discussions to flow as easily and smoothly as they would have in a verbal and physical setting), a large majority (88%) responded that they would be eager to use similar distance education tools again in the future (Holcomb, Brady, & Smith, 2010, 478), which is indicative of Bandura's (1977) ideas of performance accomplishments and positive physiological states.

Stakeholders should certainly be concerned with levels of academic motivation and self-efficacy in regards to distance learning programs, as these elements can be significantly influential on various aspects of student behavior and achievement, including "effort, persistence, learning, and achievement," as well as what activities they choose to partake in (Jinks & Morgan, 1999, 224). In particular, newer strategies of distance education and online learning are of key interest because some stakeholders, as

discussed in this section, are still wary of certain digital learning tools. There is agreement between several scholars that different levels of academic success within student groups directly correlate with the levels of motivation and positive behaviors that they possess. Consequently, researchers claim that institutions with higher levels of commitment to distance education also have student populations with raised levels of self-efficacy and success.

Self-efficacy is generally defined as a "a sense of confidence regarding the performance of specific tasks" (Jinks & Morgan, 1999, 224), but is more specifically defined as the "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" and involves "theories about self-concept, attributions of success and failure, expectancy value, goals, and self-schemas and possible selves"(Bandura, 1977, 191-192; Pajares, 1996, 544). Similarly, motivation refers to the idea that students can be "moved to do something;" in this case, that 'something' refers to academic tasks like homework, test-taking, and in-class performance (Ryan & Deci, 2000, 54). The academic processes of all programs, distance learning or not, can be adversely affected when students possess low levels of motivation and self-efficacy, which could be problematic. Zimmerman and Cleary (2006, 51) argue that when students "believe that they can perform a task in a proficient manner, they will become more engaged in the activity, work harder. . . even when obstacles are encountered." In other words, high levels of such elements in student groups are frequently associated with desirable, positive academic behaviors and results, much like the ones found in learners of distance learning programs.

Even though most of the participants were wary of these distance learning

programs (because they had not really ever participated in them before), they still ended up appreciating the collaborative and interactive value of the distance learning tools and felt notably motivated to study in a new, interesting, and interactive environment. In this study, an ideal improvement would have been to increase the sample size, but the questions inquired on were relevant. Asking thematic questions about their personal beliefs and motivations was very insightful for understanding how high the students' academic motivation and self-efficacy levels were in regards to the academic usage of digital learning tools.

Potential Developmental Impacts of Distance Learning

Christine Greenhow and fellow researchers at the University of Minnesota also attempted to assess the potentially positive developmental impacts of distance learning on the field of education amongst young adults who were college-bound and ready for college-level learning. Through a period of 6 months, students from 13 urban schools (either still in teen years or those who were legally adults) were surveyed. Among the evaluated participants, 94% were Internet users, 82% spent time online at home, and 77% had social network profiles. From the answers given on the surveys, the researchers discovered that most of the students were demonstrating "21st century" behaviors that are needed for success in this generation (Greenhow, 2008, 1).

These students were highly motivated, ambitious, believed in themselves (self-confidence), and achieved positive results. These skills were seen to significantly benefit the students' studying habits and their attitudes towards learning experiences in general, such as their grades, test scores, and end-of-year performance evaluations all improved. Because of these significant results garnered by Greenhow and her team (2008, 3), it was

possible to see that social media usage, similar to the platforms used in distance learning courses, was key to raising the students' levels of academic motivation and other positive behavioral traits, and consequently, future success in their studies.

Many students in the study were further assessed to have positive attitudes towards online technology and distance learning. According to Greenhow and the other researchers (2008) many were found to have been engaging in producing shared, highly creative content online (whether it be artistic or academic in nature). This indicates the presence of several positive academic behaviors that indicate high levels of qualities similar to the ones previously discussed, such as academic motivation, self-efficacy, and elevated performance; all of which are considered crucial for different types of learning settings, such as distance education (2).

Interestingly, the study also showed how low-income students are just as knowledgeable about distance learning as upper class students now, which means that a majority of students are now in tune with tools that are used as distance learning platforms, creating tremendous educational potential and opportunities. As the researchers assert through their study findings, students who are already involved in heavy usage of distance learning tools and programs may benefit if such platforms are merged with the curriculum they are learning from (Greenhow, 2008).

Literature indicates that the time seems to be highly appropriate to use this newly discovered common-ground to bridge educational gaps and encourage a majority of students and teachers to enjoy/feel better about the learning and instruction process. Research processes like this would be feasible and quite useful to implement in school research settings - assessing these traits of students is one of several key aspects of

understanding and predicting performance levels when it comes to learning in different settings such as distance education. With high confidence, Ali Arslan's study asserts that sources of motivation and encouragers of positive behaviors like the ones discussed can be effective predictors of important characteristics such as the students' self-efficacy for learning and performance (Arslan, 2012, 12).

Restriction and Criticisms to Distance Learning and Tools

Interestingly, previously conducted research also provides evidence on the notion that banning or restricting major forms of potential distance learning from educational institutions may not be as beneficial as such actions are intended to be. Restricting such digital learning tools and potential online education activities, especially in terms of school usage, may instead produce adverse results. Unfortunately, there are still institutions that still maintain restrictions in regards to distance learning within their campuses and jurisdictions. Common Sense Media (2010), a nonprofit group that studies youth and young adults who actively use technology, conducted several key surveys and collected statistics on the relationship between technology and educational institutions.

In many cases, restriction starts early, and barriers can be seen for learners who are already college-ready or are preparing to enter college. CSM reports that 69% of American high schools have banned the use or even possession of these devices on their grounds. Interestingly, 63% of students at schools where such technology is banned reported that they still use their devices and platforms anyway. This statistic is fairly comparable to the 65% of all students who use cell phones and other technology at their schools in general. Educators note that platforms and devices like cell phones are not going to fade away anytime soon; in fact, they are becoming increasingly prevalent in

schools everywhere as time passes (CSM, 2010, 8).

The average youth is reported to send over 400 texts a week, and over 100 of them are sent during class (Saritzky & Connolly, 2010, 3). The researchers argue that ignoring the clear statistics and aggressively restricting usage of technology within educational systems seems to be a poor strategy to take; one that will be fruitless in its efforts, instead hindering the potential of developing students in ways that are innovative or previously unseen. Especially in regards to the field of distance learning within higher education, students who enter college may not be as well equipped for distance learning as they could be, which may affect the ways institutions approach the field as well.

Possible Disadvantages and/or Negative Outcomes

CSM (2010) does acknowledge that critics are certainly not entirely baseless in their viewpoints. Aside from the common worries of 'distraction' and inadvertently fostering 'short attention spans,' cheating is an issue that still exists, and it is one that can be amplified by such distance learning tools and devices if they are not handled properly. The organization reports that two-thirds of their student participants professed that they had witnessed their classmates using cell phones to cheat on their classwork (2).

A third of them stated that they took advantage of some technology and tools to cheat themselves. Some common cheating methods utilizing these online tools involved messaging answers secretly to one another, storing and passing around pictures of notes, storing pictures of quiz pages, and searching the Internet simultaneously (Saritzky & Connolly, 2010, 2). Thus, the fears of some families and educators are not completely unfounded, as there are risks that come along with the presence of distance learning in traditional campuses (3). However, those risks are suggested to be overcome through

organizational change and leadership, as the authors recommend, rather than simply seeking to eliminate an overwhelming institutional presence.

Likewise, Bloom (2013) desired to explore the presence of distance learning in schools, but he also sought to discover what repercussions should be avoided in the process of doing so. A professional panel discussion was conducted to engage Ohio educators in this discussion and gauge the level of knowledge and interest that current systems held. Even this discussion with esteemed and well-respected members held a clear divide in belief and expectation, as some believed that distance learning tools could possibly benefit school systems while others questioned whether there was any evidence that such tools could even enhance learning in the first place. A collective realization that arose towards the end of the panel was that, as centers of education, educational institutions needed to be responsible for at least familiarizing students to distance learning and these technologies, which would be a much better alternative to simply banning them altogether (Bloom, 2013).

Nevertheless, several major misgivings were revealed through the panel discussion and survey data collection. Several expressed doubt about the ability of teachers to truly comprehend how students could engage with them in a distance learning setting. Others worried about allowing instructors to fall into the distracting world of the Internet, referencing the statistics on student groups who already faced these same hindering and distracting effects of such distance learning tools (Bloom, 2013).

In turn, opponents of these theories argued that distance learning has increased the skill sets and capabilities of students to learn (there doesn't necessarily need to be evidence to see if paper and pencil improves learning, so why question a new form of

communication when instructors should be the ones that are efficient at facilitating proper instruction and learning processes?). The panelists and participants collectively came to the conclusion that parents are the key stakeholders who need to be next in assimilating into the world of distance learning and online education practices. In other words, panelists agreed that families and parents are of key importance in helping ease the adaptation and adjusting processes for students to become immersed in distance learning, especially when it comes to college-level learning (Bloom, 2013).

Response to Restrictions, and Transitioning to Pedagogy Based on Distance Education

Due to the sentiment that educators and institutions should transition forward from traditional forms of learning, Baird and Fisher (2006) were fascinated by the idea that the world of interactive technology was currently 'always on.' They were interested in and intended to analyze "the formation of a burgeoning digital pedagogy" (5); hence, they began assessing the effects of such "emerging technologies" (25) on curricula and instruction. Through their report, the researchers presented the conclusion that students are now learning differently due to these new forms of education, and they attempted to assess how different tools could be utilized for distance learning, and in turn, influence "neomillennial learning strategies" and enhance user experiences for students who are part of such learning environments (5).

These researchers studied various popular online platforms such as Wikipedia, iPhone technology, blogs, podcasting, etc. The results indicated that it would be highly detrimental to constrict online platforms and tools used for distance learning because students nowadays are creating wide "learning communities" and engaging in collective experiences across the Internet. Activity across research sites, social networks, discussion

boards, and other online platforms were found to encourage healthy learning habits in distance education settings (Baird & Fisher, 2006, 14).

Baird and Fisher (2006) continued to note that neomillennial students (who are now used to and reliant upon online technology) expect to encounter content and material that motivates them to learn interactively, which also presents implications for traditional colleges and their involvement in distance learning technology. Getting rid of these capabilities to "shar[e] knowledge in a pool" would be harmful to the new learning approaches of today (5-6). The study also helps to indicate again that distance learning settings and programs can positively impact the field of education, which is why it is deemed necessary to adapt to the new technological innovations that are taking over institutions and student bodies.

The previous report leads into yet another discussion about how blocking distance education opportunities may result in the stifling of creativity and learning ability in general, especially in this new, evolved era. Nightingale (2011) asserts that utilizing distance learning tools is one of the few approaches in education that can truly encourage creativity and motivate students, directly rebutting against the critics who suggest that creativity cannot really be taught 'traditionally' in schools. The researcher assessed Chalfont College, which offers a special "enrichment curriculum." In this program, the students spend days learning how to use computerized, distance education models (1).

The college utilizes this initiative to "develop creativity across all subjects" (1-2) and encourage the formation of PLTS (personal, learning, and thinking abilities). Results indicate that this type of curriculum had "enabled otherwise under-achieving students and apparently non-creative students to blossom by harnessing their fascination. . ." (2). It

was apparent that particularly low-performing students had higher levels of motivation and development, as well as flourished rapidly, when they were given the right tools to do so, particularly when the learning strategies were both interesting and familiar (Nightingale, 2011, 3-4).

Other Examples of Distance Learning Successes

The landscape of higher education is continuously changing, as illustrated by the leaps and bounds of progress made over the past decades. Therefore, the future of higher education and distance education would also be of key interest to analyze, as there is still much more progress that can and most definitely will be made. Examples can be taken from current pioneers in this field, such as Western Governors University. Western Governors University is one of the largest providers of distance education in the world, and more than 70,000 students are currently enrolled. The programs are uniquely designed to be individualized and self-paced to each student's preferences and abilities, which is why enrollees are able to schedule and plan out their own degree programs. They are astonishingly affordable as well – tuition starts at $2,890 per term, which is closer to the costs per class at many other institutions of higher education. But most impressively, throughout all of this, WGU was founded as and remains a public institution. Schools like WGU are leaders in providing distance learning opportunities for the field of higher education, and offer valuable lessons for potential progress and improvements that can be learned and applied by fellow institutions (Western Governors University, 2016).

Similar experiences were seen at the Abbeyfield School (another similar post-secondary institution) where creativity and self-motivation were the central focuses of the

institution's curriculum development. The college had tried to arm students with "more skills applicable to real life" and offer them "authentic learning" with "real-world outcomes" (Nightingale, 2011, 3). David Nicholson, Head of the college, is referenced as saying that these types of innovative activities bring home the idea that they are learning skills and abilities which relate to what they do in other parts of life, which increases the level of relevancy, motivation, and interest in the course material, as well as opens up the door for educators to reach out to students in ways that were not possible before the evolution of distance learning (4). Not only do distance learning opportunities offer more innovation for instruction, but these emerging technologies can have permeated most areas of both students' and instructors' lives, as demonstrated at Abbeyfield. Because the online world feels like "home" to these students, restrictions and constriction in general would not be conducive (Nightingale, 2011, 3-5).

Comparing academic and developmental results between institutions like Chalfont and Abbeyfield to institutions that disengage themselves from distance learning programs and opportunities may offer additional insight into the differing levels of positive development present within the student and teacher communities. Adobe Systems Incorporated, an internationally renowned corporation recognized for its technological innovations, recently conducted a survey entitled "Creativity in the Classroom" and recruited many employers as well as higher education lecturers to participate. The overall results of the survey indicated that creativity has now become an essential skill applicable to all lifestyles. For instance, 77% of the surveyed participants reported that they believed creativity to be a significantly necessary skill for success, just as much (or more) than literacy and numeracy (Adobe, 2010, 1).

Interestingly, the analyses of the data from the survey also illustrated how many of the employers and higher education instructors considered this type of creativity to be quite lacking from current "prospective employees [new applicants] and undergraduates" (Nightingale, 2011, 4). Both corporate heads and instructors stressed the need for instilling more creativity in students, and most believed that using such "information and communications technology" was one of the best ways to do so (Adobe, 2010). Distance learning technology and online education tools present advantages that are desirable for learning settings both in and out of the classroom, as the researchers concluded. In particular, preparing undergraduates through the channels of distance education may be an issue of importance for postsecondary institutions to focus on.

Institutional Characteristics and Commitment to Distance Education

While distance learning has permeated the sphere of higher education, questions remain in regards to how distance education is embraced and implemented across the incredibly diverse types of institutions in the United States. Colleges in the United States display an enormous variety of traits and factors that may affect how distance learning is accepted in the institutions, and even how 'committed' these colleges may be to this field. Particular characteristics in these institutions may impact the presence and/or availability of such distance learning programs that are offered to students, and this research study investigates several of these institutional aspects in relation to how they impact the presence of distance learning programs within these schools. Are certain institutional characteristics predictors of how committed these schools are to distance learning? If so, how do they negatively or positively predict the commitment to distance education in the colleges evaluated for this project? Institutions who are highly committed to distance

education (or conversely, are not as highly committed) may share several common traits, and this study examines this idea further.

The ever-growing and constant demand for distance education is also reflected in related financial and economic statistics as well. While the annual market for distance education was previously as small as $4.5 billion, the numbers surpassed over $10 billion by the mid-2000s and is continuing to increase today (Howell et al., 2003, 11). This rising demand for distance education is in part attributed to the distance learning's role as a potential solution in response to decreasing resources in the field of higher education. With both economic difficulties and growing enrollments of college students, resources for higher education, including those available for distance education, have suffered pressure and losses. University costs are also reported to be rising; funding and financial matters seem to be an issue of concern for all institutional stakeholders (Howell et al., 2003, 10).

Institutional Sector Type

Consequently, the institutional sector types of postsecondary schools are seen to offer research interest in regards to their distance education involvement; in other words, whether colleges are public or private in their makeup, and how this relates to their levels of commitment to distance education. These classifications of postsecondary institutions are of research importance when it comes to discussing the current state of distance learning in higher education. Government-funded research by the U.S. Department of Education and the NCES (National Center for Education Statistics) illustrated that distance learning outcomes vary (often significantly) at different types of higher education institutions (NCES, 2015). According to a study discussed by Anthony Pina,

public and private 4-year colleges were more likely than 2-year colleges to provide full degree programs online, which makes these institutional categories relevant for this research study (Pina, 2008).

The differences in institutional sector level are considered significant in distance education literature because "the institutional landscape of higher education is changing" (Pina, 2008, 7). Private and public colleges are noted to be merging, and for-profit institutions are growing rapidly while contrasting schools are on the decline. Due to the growth and immense presence of distance learning, the lines of distinction between these different types of schools (public, private, for-profit, nonprofit) are becoming more and more blurred, especially in the "financial arena" (Pina, 2008, 6-8). Pina (2008) refers back to Dunn, who had also predicted that universities operating on more 'traditional' models like public institutions largely have done will eventually continue to decline while the amount of degree-granting institutions in general will continue to rise. Increasing technology usage and fluency is contributing to the "networked world. . . dominating the economy" and influencing business-minded practices to the point where "no one can afford to be without. . . competence" (Howell et al., 2003, 10).

Private institutions, both for-profit and nonprofit, seem to be approaching distance education in ways that go along with these changes in the institutional landscape. For-profit institutions, in particular, were previously predicted as being the "fastest growing sector in education" by researchers Gallagher and Pond, which is also proven true today (Howell et al., 2003, 7). These types of colleges are able to offer more marketable courses with the intention of attracting more students, while leaving the 'heavy lifting' to traditionally structured colleges. Berge (2000) criticizes this as a practice of picking easy-

to-attain, "low-hanging fruit" in favor of being more marketable while leaving harder work involving higher costs to others (Howell et al., 2003, 7; Pina, 2008). Private colleges overall are able to concentrate on profit-development by having the freedom and choosing to offer courses that appeal to the majority of the student population, including those from business, IT, or vocational programs. Unfortunately, practices like these are said to be detrimental to the higher education sector in ways that will cause more financial distress along the way (Bates, 2000).

Private institutions tend to have more freedom and choice when it comes to allocating their funds, as they do not receive as much support or direction from governmental agencies as their public counterparts. Hence, private institutions are said to frequently "concentrate on those areas that are the most profitable" (Bates, 2000, 5-7). Even more specifically, for-profit private institutions seem to experience even more of this leeway, as nonprofit colleges have more agencies to answer to if not as many governmental agencies as public schools (even more so the case for public colleges). As mentioned earlier, public colleges tend to do more of the academic "heavy lifting" and are also burdened by more of the higher costs associated with meeting assigned academic standards (Pina, 2008). Ansah and her research colleagues wrote that public colleges face several major financial dilemmas, which include "providing financial support for faculty and teaching units preparing courses for distance delivery" and "determining pricing strategies that must follow state-mandated guidelines while remaining cost-effective to university budgets, which are always under stress" (Ansah et al., 2011, 2). While public colleges may be assigned funds to specifically attribute towards distance learning (or alternatively they are required to attribute certain funds to students' financial aid, for

example), private colleges are more frequently able to handle their funding according to their intentions.

The California community college system is the largest such higher education system in America, "with 2.1 million students spread out over 113 schools." Three out of every ten Californians ages 18-24 are currently enrolled in a community college. Interestingly enough, 29% of University of California (UC) students and 51% of California State University (CSU) students got "their starts at community colleges" (California Community Colleges Chancellor's Office, 2016). Community colleges in the state of California are a clear example of the system's commitment to the types of higher education and student groups.

Even with numerous public institutions in the state, California has many private colleges as well, and large portion of them are religious in nature. Due to its diverse inhabitants, California is also very diverse in religion, housing various types of religious practices and members, including Protestant, Catholic, Jews, Mormons, Jehovah's Witnesses, Buddhists, and so on (Christian Colleges, 2016, 1). Christian educational institutions in California are certainly being benefited by distance education programs as well – analyst Richard Garrett, who worked with various large universities on their approaches to distance learning, discussed how "the combination of America's religious character, its large and well-organized evangelical population, its sophisticated online education market, and the big-tent approach to Christian education taken by many of its faith-based universities" has greatly contributed to the rapid expansion of distance education programs amongst Christian institutions of higher education (Kolowich, 2010).

Nontraditional Students

In related research, other institutional characteristics are similarly identified as presenting research interest in terms of the levels of commitments traditional postsecondary schools have towards distance education. For instance, some are related to the demographics of the student populations within these schools, and as a result, student demographics have come under assessment in regards to their perceived relationships with the outcomes and presence of distance learning in higher education. One such factor can be seen with the distinction between 'traditional' and 'non-traditional' members of the student body (denoted by age classifications as provided by the IPEDS). Students who identified themselves from the ages of 25-46 were classified as 'nontraditional,' versus the 'traditional' students who were identified as being between the ages of 18-24 (NCES, 2015).

The numbers of adult learners, female students, and minority groups are all rising at institutions of higher education, and more rapidly than ever. Howell (2003) and his team refers to Aslanian's works, who acknowledges that even then, a sizeable 42% of all students at both public and private colleges were "age 25 and older," and that the entire group of adult learners is the "fastest growing population in higher education" (4). It is even more notable that between the years of 1970 and 2000, traditional college students (aged 18-24) increased 41% in comparison to the nontraditional/adult college students (aged 25 and over) experienced a 170% increase (4). In particular, nontraditional students tend to "seek course delivery through distance education formats such as online or videoconferencing that meet the needs of their lifestyle that includes career, family and other responsibilities" (Skopek & Schuhmann, 2008, 1).

These changes in the higher education student population over time are significant because, as Scott Howell and his team writes, distance education students have impacted this overall group with these changes in their learner profiles. Online students have become generally older and have better marks, scores, and higher participation in both degree programs and course credits (Howell et al., 2003, 1-2; Pina, 2008). Amy and Palmer Wojciechowski also studied distance learners and found that the students who were older in age were found to have higher course grades and rates of course completion (Burns, 2011; Wojciechowksi et al., 2005). As schools continue to try to "meet the needs of this growing contingency of new atypical student populations," this "influx of nontraditional students is likely to continue" and institutions will "continue to expand their offerings via distance education" (Skopek & Schuhmann, 2008, 1-2). As a result, stakeholders may expect that there may be higher or lower amounts of distance learning programs at traditional institutions with correspondingly greater or fewer numbers of nontraditional students. If institutions retain the belief that distance education programs are better suited to nontraditional learners, then they may be more willing to be involved in distance learning.

Enrollment Sizes

Similarly, in regards to the student populations at colleges, the sizes of total enrollment that are found at the schools also present research interest when it comes to factors that impact distance learning. Howell and others give attention to the trend that throughout the years, enrollment at colleges overall have increased immensely, not only with traditional student groups, but also with the addition of nontraditional, adult, "information-age," or simply 'online' learners. These growths have caused many colleges

to acknowledge that there will most certainly be many "more students than their facilities can accommodate" and will continue to be the case and grow as the student populations continue to grow (Skopek & Schuhmann, 2008; Howell et al., 2003, 2).

As a result, distance education has been readily embraced as a solution to this common issue across all institutions of higher education. The previous infrastructure of higher education was simply not enough to accommodate the quickly growing student enrollments at colleges, which has made distance education programs more necessary. Other major trends like increasing "technological fluency" and a "huge growth in Internet usage" (Howell et al., 2003, 7-10) have also pushed and ballooned the presence of distance learning programs at colleges, but rising traditional university costs coupled with growing enrollments presents a problem in that "start-up expenses for distance education programs are typically high" (Howell et al., 2003, 1-2). Therefore, while it is an effective solution, it is not without its share of difficulties. Skopek and Schuhmann (2008, 1) likewise note that "increasing demand" is "helping to drive interest in off-campus delivery," but this trend is not without its difficulties.

Utilizing distance education to cater to higher levels of student enrollment presents additional difficulties or costs in hidden form as well. Ansah (2011) discusses the various issues of additional instructional costs, converting traditional courses/programs to distance learning formats, and hiring additional key staff, which may include webmasters, IT tech support, designers. She also discusses administrative approval times, which can be seen in particular with public institutions, as these institutions are more likely to have higher student enrollments and adhere to more administrative guidelines and oversight (Ansah et al., 2011, 2).

She continues to describe that issues like less course profits from student payments (which may be the case after lowering tuition rates for distance education courses or eliminating on-campus student fees), and lower-than-expected initial enrollments also present different considerations that traditional institutions need to make when assessing potential or current distance education participation. Ansah writes that "the cost of [distance education] instruction exceeds traditional instruction costs," and overall, cost is identified as being the "most prohibitive factor" when it comes to the "hindrance to institutions" initiation or expansion of [distance education] course offerings or program development (Ansah et al., 2011, 2-3).

It is interesting to note that, with traditional schools (along with non-traditional schools) participating more and more heavily in the distance education sphere, their student enrollments may increase, sometimes dramatically, as discussed previously. With the influx of many non-traditional and even more nonresidential/out-of-state (or even out-of-country) students that enroll in their schools and become included as equally enrolled members of the student population, albeit through virtual means, institutions who open up online courses or even MOOCs ("Massive Open Online Courses") will experience even more dramatic growths when reporting their enrollment statistics into organizations like the IPEDs. With "more non-traditional students. . . seeking educational opportunities" and "traditional students. . . seeking out and expecting alternative modes of curriculum delivery" (Skopek & Schuhmann, 2008, 1-2) the demand can be greater than universities can handle (Leeds & Cope, 2015; Skopek & Schuhmann, 2008). Once the major barrier of distance is removed from the equation of college selection, students can be given more freedom to study at the schools of their choice. At the same time, even when larger

enrollments may require more distance learning delivery or similar solutions, institutions

may not be able to provide enough course/program support in terms of distance education

opportunities to the entire student body because of the sheer enrollment size or the other

previously discussed hidden difficulties in offering distance education.

Faculty Salaries

Likewise, in relation to the current financial concerns of the higher education

sector and the rising university costs (including the hidden costs of offering higher

education distance education opportunities, which included instructional expenses),

instructional expenses is another cost that is of key financial concern. One large financial

expense of postsecondary schools is found in the salary rates of faculty members and how

much funding is given to financially supporting the instructional procedure (Compora,

2003). The average salary rates of faculty members offers key research interest because

rising demand and decreasing university revenues are helping to instigate further interest

in distance learning, and as a result of this trend, "distance education offerings are on the

rise at universities across the country." However, there are less financial resources and

other important expenses that hinder this process (Skopek & Schuhmann, 2008, 1).

Daniel Compora (2003) writes that faculty involvement and training is crucial to

the success and strengthening of distance education programs. As previous literature

indicates, recruiting enough potential instructors to join the faculty is a struggle that

comes from soaring student enrollment rates. Several institutions also professed that the

selection of distance learning instructors or the modifying of teaching workloads to

accommodate for distance learning compounds the instructional costs already in place.

This is especially the case when the need arises to accommodate for growing student

enrollments and ballooning teaching workloads (Ansah et al., 2011; Compora, 2003).

Some of the instructors reported on in the study indicated that they are generally not

always required to teach courses including those in distance format, but it is frequently an

incentivized activity that requires additional salary boosts or bonuses for faculty

members. Such support systems and instructor incentives are in place and require

significant amounts of financial attention, especially when it comes to significant

amounts of extra compensation (sometimes double the pay), but this is disregarding the

current knowledge that instructional costs are often difficult for institutions to handle

even without the additional teaching costs coming from implementing distance education

programs (Ansah et al., 2011; Compora, 2003). Ansah (2011, 8) writes that "unattractive

salaries" was one of the causes of teacher shortage instances in the higher education

sector, along with "increasing enrollment in schools."

Even when distance education teaching is prevalent enough at some institutions

that they sometimes may include the pay for these courses as part of the normal teaching

load, these financial packages overall need to be larger in size. Howell (2003, 6) notes

how a UCEA survey of 4-year colleges showed that the majority of faculty members

participating in distance education teaching either received stipends or boosted, on-

campus salary packages. With more faculty members participating in the distance

education programs their respective institutions offer, they earn additional compensation

(sometimes double, as previously mentioned) through their participation, which naturally

increases the average salary rates of instructors at their schools but takes away from

critical funding that may be needed for other university costs. In order to accommodate

for all of these increases in faculty salaries, institutions may take away from financial

resources that can be attributed to developing, increasing, and fortifying distance

education programs. Or alternatively, in cases where there is already financial attention

given to distance learning, funding might be cut from distance education divisions in

order to pay for the additional teaching costs that having large amounts of distance

learning programs may bring (Howell et al., 2003; Pina, 2008). Oftentimes, there are

other higher education costs already in place that require more immediate attention than

distance education, and this may lead to distance learning becoming lower in priority

when it comes to allocating funding.

Ratio of Students to Faculty

Following along with this discussion of collegiate faculty as well as increased

overall student enrollments and higher instructional costs, the ratio of students to faculty

is another institutional characteristic that is seen to offer research interest, as implications

regarding faculty may affect distance education involvement. Compora (2003, 4) refers to

how distance education instructors are chosen either based on a "willingness to teach

such a course" (which may result in higher instructional costs, and previously discussed)

or in order to accommodate for rising rates of student enrollment. In order to cater to both

greater student enrollments overall as well as more distance learning students, traditional

postsecondary institutions must hire more instructors or change strategy for the

instructors already in place. Skopek and Schuhmann (2008) attribute this to causes like

large faculty shortages. Howell (2003, 6) also notes that, according to an NEA study,

"faculty members' top concern about distance education was that they will do more work

for the same amount of pay," and this was proven to be a "merited concern" according to

NEA statistics that showed how "most faculty members do spend more time on their

distance courses than they do on traditional courses, and 84% of them do not get a reduced workload" (Skopek & Schuhmann, 2008; Compora, 2003; Howell et al., 2003).

A relationship between the ratio of students to faculty and the ratios of distance learning programs offered indicates that the number of faculty available or the amount of faculty that are able to be trained, prepared, or encouraged to participate could have an impact on the rates of distance learning commitment that institutions may have. For instance, higher ratios of students to faculty (in other words, less faculty members available to serve the student populations) indicate less faculty ability and availability, which limits online program development, since faculty and course design are two "essential areas for ensuring quality in distance education" (Todd et al., 2015, 4). Skopek and Schuhmann (2008, 11) present the finding that, between distance learners and on-campus learners, having to share that [faculty] attention, in addition to the "distractions and cumbersomeness" already involved, is greatly "challenging." Faculty members certainly have human limits (especially when the workloads for current faculty members increase), and even with incentives or support systems in place, traditional institutional strategy may change when distance learning programs are added into the academic offerings. Increased enrollments, financial pressures of institutions, lack of enough faculty support and training, and other trends are only some of the causes behind "faculty resistance," which lead to limiting the "speedy progress of online learning" (Todd et al., 2015, 4; Skopek & Schuhmann, 2008).

Institutions do have various strategies that they utilize to tackle these problems. For instance, recruiting other instructors in the form of additional adjunct instructors, more development of traditional faculty members, invitations of guest lecturers, and

assigning of more assistant teaching assistants (usually from the graduate student population at the same institution) could become more and more prevalent at a college. Traditional institutions may also differ greatly in how they approach the instructional aspect of distance education as various colleges try to incentivize the taking on of additional teaching opportunities by boosting already held salaries, some choose to hire more teachers and adjunct instructors, and others assign or encourage more online teaching as part of already held workloads which also lead to boosted financial compensations as well (Compora, 2003; Skopek & Schumann, 2008). This variety indicates that there is still a lack of standardization in the way these problems are being addressed, as these higher education issues are still developing and do not necessarily affect all colleges in the same ways.

Financial Aid

In continued discussion of financial concerns and issues related to the various rising or already high costs in higher education, and similar to the previous discussion of faculty salaries, the presence of financial aid in postsecondary schools offers research interest in regards to the level of distance education programs that may be available. As previously discussed, budgeting is an important issue when it comes to financial concerns that traditional institutions face and the inevitably rising costs in higher education. And as previously mentioned with the discussion on faculty member salary rates, funding that is allocated to costs other than distance education development could perhaps affect the financial attention that could be given to distance learning by affecting the commitment institutions have towards their distance education divisions and the ratios of distance learning programs offered as part of the academic offerings (Ansah et al., 2011).

Literature indicates that budgeting can sometimes vary greatly from institution to institution as there are many factors at play, but sources indicate that, when excluding residence costs and considering the major academic costs that are applicable across the board, distance learning students may sometimes face greater fees and extra costs in comparison to their counterparts who are studying at the same academic levels. For instance, a traditional, on-campus student would not have to pay the technology, Internet, online membership fees that distance learning students often do (Ansah et al., 2011; Compora, 2003).

Howell refers to a study from the Colorado Department of Education, which indicated that the "cost per student of a high-quality distance learning program. . . [can even be] greater than" the cost for a student in a traditional program (Compora, 2003; Howell et al., 2003, 10-11). Even when excluding the required expenses, distance education students also face additional costs (more than traditional students) in the form of having to purchase certain equipment, software, and hardware programs in order to support their academic performance in the courses. This is excluding the fees that they must already pay like traditional students do. These findings indicate that there may be more students overall (with the inclusion of these distance learners) who need and seek out more financial aid, which would raise the overall rates of students receiving financial aid at schools. This institutional characteristic offers research interest in that stakeholders may view higher numbers of students receiving financial aid and view these indications as signaling the presence of more distance education commitment. Problems with financial aid serve as an "institutional barrier" to distance education, as financial aid is a "critical facet of any distance learning program" (Muilenburg & Berg, 2011, 1-2, 10-11;

SREB, 2002).

At the same time, not all financial aid available to students comes from the institutions themselves (or are in the control of the schools). There are various forms of financial aid which are gained from a variety of sources, including both sources outside of the colleges themselves and within. These may include private donors, private organizations or businesses, governmental agencies, NGOs, nonprofits, particular interest groups, etc. In some cases, institutions often receive financial assistance and funding sources that they either desire to (or are requested to) attribute to student scholarships or other necessary higher education costs (Petersons, 2015). Among several possible correlations, this could take away from the amounts of distance education programs offered in a variety of different ways, direct or indirect, tangible or intangible (for instance, through some funding being redirected from areas that may support or be beneficial to distance education and being applied elsewhere). With less funding available for schools to apply towards their distance learning programs and students, even in indirect or minor ways, schools who see more financial aid being given to students from less-than-ideal sources may have less opportunities or willingness to develop their distance education programs in certain cases. In any case, lack of funds and financial resources can contribute to the overall pressure on institutions who are trying to support distance learning projects or apply possible funds to areas that may benefit or support distance learning; "funding resources" is one of the critical "emerging issues" in the practice of distance education (Muilenburg & Berg, 2001, 3-4). Especially in this current economic climate, both students seeking college educations and non-traditional education programs need more direct or indirect support regarding finances. Colleges who are

struggling to cover institutional costs could make sacrifices from their variety of financial

resources, which may include choosing to redirect funding away from areas that may

benefit distance education. This can be even more the case when all of the institutions in

this study are 4-year, baccalaureate level and above, on-campus schools which currently

have previously established campus programs to focus on (and have been focusing on

them for a long while) (SREB, 2002; Petersons, 2015; Muilenburg & Berg, 2001).

Minority College Population

Non-Caucasian students, including those from Asian, Black, and Hispanic

ethnicities are categorized as members of the minority college population in this study.

California is home to one of the most diverse student populations in all of America, and

arguably the world. For instance, in 2014, the University of California made a notable

announcement that it had admitted more Latino students (29%) than Caucasian students

(27%) for the 2014 academic year. Similarly, a large number of the students in the

University of California system are of Asian descent as well (National Center for

Education Statistics, 2014). The community college system in California also contributes

to the diversity seen amongst college students in the state. The Community College

Research Center at Columbia University reported that in Fall 2014, 56% of Hispanic

undergraduates, 44% of black undergraduates, and 39% of white undergraduates were all

students attending community colleges (Community College Research Center, 2016).

Institutions of higher education in the state of California are seen to have

particularly high percentages of Asian and Hispanic students. The Priceonomics Data

Studio asserts that this detail "fits the historical trend of immigration to the Golden

State," which explains the larger proportions of immigrant minorities in comparison to

high percentages of non-immigrant minorities (ex. Black) that can be found in other states and regions of the United States (Priceonomics Data Studio, 2016; American Immigration Council, 2015). Statistics have shown that a wide variety of languages and cultural backgrounds can be seen from the residents of the state. Apart from English, Spanish is "the state's second most spoken language," and almost 43% of California residents "speak a language other than English at home, a proportion far higher than any other state" (*San Francisco Chronicle*, 2008, 1).

In regards to minority students in higher education and distance learning, they, like all students, are faced with the issue of having to "invest in equipment and access for distance learning," because their preference in distance learning can be "dependent on their socio-economic-technical backgrounds" (Buchanan, 2000). Watson Scott Swail and his team describe that "socio-economic status is closely related to race and ethnicity." Black and Latino families were found to earn much less (less than two-thirds) of what White families earn, and this can "directly impact the ability to make purchases, and earning power affects the ability to become more capable and competitive and increase one's human and social capital" (Watson, Redd, & Perna, 2003, 8).

Further demographic analysis from SACNAS illustrated that the profile for "typical" online students, particularly those enrolled in fully online programs (i.e., undergraduate, graduate, licensure, certificate, etc.) was interestingly found to be a "Caucasian female about 33 years of age who is not the first in their family to attend college and who typically has a total family income of about $66,500." SACNAS researchers found that students of Massive Open Online Courses (MOOCs) were already well-educated and already possessed college degrees, and that while there is "tremendous

promise" for online education, this promise is still being used for continued "professional development" rather than "institutional replacement," which matches the needs of minority student group (Herrera et al., 2014, 1).

SACNAS researchers discuss that these underrepresented student groups "may not understand the opportunities and challenges of online delivery and may not be able to fully take advantage of these new approaches." Many factors are cited, including how many of them "do not have access to, or sufficient preparation with, many of the online learning experiences and practices." A "lack of digital literacy," "lack of mastery of the English language," and "lack of a complete understanding of how to effectively engage with peers and the subject matter" are all cited as possible explanations (Herrera et al., 2014, 1).

SAT Scores

In relation to distance education, postsecondary systems of admissions and colleges' perspectives towards prestige, selectivity, or competitiveness also present research interest; in particular, with how they view common admissions standards like standardized testing. The literature illustrates commonly that one of the long-standing weaknesses in distance education culture is that the current academic culture needs to move to the "post-industrial," as postulated by Farhad Saba (2005; 2012); he also argues that the "traditional academe" is still in the "industrial" culture, or in other words, the "mass production and standardized testing culture" (Howell et al., 2003, 8-10). He discusses that this trend also indicates a greater presence of standardization and reuse of more traditional strategies in higher education, such as emphasizing the acceptances of standardized test scores such as the SAT (previously referred to as the Scholastic

Aptitude Test, the Scholastic Assessment Test, and the SAT Reasoning test), which is one of the major factors considered in college admissions and is "the nation's most widely used college admission test," taken by "more than two million students every year" (College Board, 2016, 12). Saba contends that this is unfortunate because "true individualized learning is the future and strength in educational technology" (Howell et al., 2003, 8-10).

The acceptance of standardized test scores such as the SAT for admission may also not be conducive for distance education in that nontraditional learners (who make up a large percentage of student participation in distance education programs, as discussed previously in the literature) recognize this as a road-block to their educational aspirations (Burns, 2011, 3). As he notes, nontraditional students "experience numerous challenges" when trying to participate in educational programs (3-4). Nontraditional learners are classified as being within the ages of 25-64 years and are not as prepared for the SAT due to having graduated high school longer ago, while 'traditional' learners from the ages of 18-24 have usually taken the SAT curricula in high school very recently and are generally more well-prepared to take tests like the SAT. For nontraditional learners, "formal education" was in their very "distant past," and the "predictability of standardized tests for adult learners was suspect" (Dodge & Derwin, 2008, 4-6).

Burns (2011, 4) writes that "most programs cater to the traditional student," and it may seem that the practice of accepting or requiring SAT scores for admissions is a demonstration of the commitment those institutions may have to sticking with the status quo and adhering to traditional academic practices that best accommodate traditional students. This could indicate a negative trend with the commitment those institutions may

have in offering distance education programs, which see a larger presence of nontraditional students. This could also present that, with the SAT being an indicator of selectivity and competitiveness as Burns suggests, understanding the rates of SAT score submissions at colleges offers research interest in that stakeholders can understand how more 'selective' or 'competitive' colleges view and are perceptive to the field of distance education, as well as how much institutional commitment they have to the world of online learning. Colleges adhering to these 'traditional admissions standards' may indicate that they are searching for students who are predicted to be more successful based on test scores, which may not accurately predict success for all types of students, especially distance learning and nontraditional students (Burns, 2011; Dodge & Derwin, 2008).

Chapter III

METHODOLOGY, MATERIALS, AND DESIGN

This chapter discusses elements of this research project's methodology, procedures, materials, and research design. This section goes through project elements such as the institutions observed, collection of data, limitations of the project, and other details regarding research methodology.

Overview

This research project takes the form of a quantitative study in its research design, and it had IRB exemption. The purpose of this study is to consider (and assess the relationships of) what institutional characteristics of the 4-year, baccalaureate level and above colleges and community colleges observed in this study predict the percentage of students enrolled exclusively in distance learning programs, the percentage of undergraduate students enrolled exclusively in distance learning programs, the percentage of graduate students enrolled exclusively in distance learning programs, and the percent of distance learning programs that these schools offer (which is being used as the dependent variables of "commitment" the schools have towards distance learning). This research project is conducted in this manner because such quantitative methods are particularly useful for discovering, observing, and assessing interesting patterns and relationships between variables. Furthermore, such studies are said to be useful in studying trends and issues in the field of education (Gall, Gall, & Borg 1999).

This study, in particular, assesses the relationship of different independent

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variables to the percentage of students enrolled exclusively in distance learning programs

as well as the percent of distance learning programs offered at 4-year, baccalaureate level

above institutions and community colleges in the state of California. The independent

variables utilized in this project are various different institutional aspects of the

universities which were discussed in the literature and identified as offering research

importance, and they are also originally among the institutional aspects that the IPEDS

(Integrated Postsecondary Education Data System) Data Center helped emphasize as the

most useful and frequently derived from to make such assessments (and comparisons) of

postsecondary institutions. The independent variables are institutional sector types

(public vs. private, for-profit vs. non-profit, 4-year vs. community college, and religious

vs. secular), the total student enrollment, the average salaries of full-time instructional

staff, the percentage of full-time undergraduates receiving any financial aid, the

percentage of students receiving Pell grants, the percentage of students who are non-

traditional (aged 25-64 years), the percentage of Asian students, the percentage of Black

students, the percentage of Hispanic (Latino) students, the percentage of White students,

the percentage of students admitted, average SAT score, the percent of FTIC (Full-Time

in College) students submitting SAT scores, and the ratio of faculty members employed

at the colleges to the currently enrolled students (ratio of students to faculty).

A discussion of the literature indicates that these variables can produce

meaningful results and outcomes for analyses regarding postsecondary institutions and

their commitment levels to distance learning, and these variables are also included

among the original value categories described by the IPEDS and NCES (National

Center for Education Statistics) as being frequently derived and applicable to data

testing when evaluating institutions of higher education as this research project does. Specifically, relevant literature sources also help support these variables as institutional characteristics of research value particularly in response to the discussed research question of this study (IPEDS, 2015).

The following research question is explored in this study:

Q: What institutional characteristics predict the level of commitment to distance education among 4-year, baccalaureate level and above colleges and universities as well as community colleges in California?

The following hypotheses are articulated to test and evaluate the independent variables in which data are available for almost all of the cases in the dataset:

H1: Colleges with the institutional sector type of private demonstrate a greater level of commitment to distance education than colleges with the institutional sector type of public.

H1a: For-profit colleges have a greater commitment to distance learning than non-profit colleges.

H1b: Community colleges have less of a commitment to distance learning than 4-year colleges.

H1c: Religious colleges have a greater commitment to distance learning than secular colleges.

H2: As the percent of full-time, first-time enrolled undergraduate students classified as nontraditional (aged 25-64 years) increases at the institutions observed, the commitment levels to distance education rises.

H3: As the ratio of students to faculty increases at the institutions observed, the

levels of commitment to distance education decreases.

H4: As the percent of full-time, first-time enrolled undergraduate students receiving any financial aid increases at the institutions observed, the levels of commitment to distance education decreases.

H5: As the total enrollment of students increases at the institutions observed, the levels of commitment to distance education decreases.

H6: As the average salaries of 9-month contracted, full-time instructional faculty members increase at the institutions observed, the levels of commitment to distance education decreases.

H7: As the percentage of minority college population increases, the levels of commitment to distance education decreases.

Table 1 summarizes the minimum and maximum values, mean, standard deviation and sources for each variable in the study. For the percent of students receiving financial aid the minimum value is 0 while the maximum value is 100, the mean is 75.76, and the standard deviation is 17.961. In regards to the percent of students receiving Pell grants the minimum value is 0 while the maximum value is 100 (at Southern California Seminary and United States University), and the mean of this variable is 47.49.

As for the dummy variable of public (1)/private (0) the minimum value is 0 while the maximum value is 1, the mean is .52, and the standard deviation is .500. Regarding the dummy variable of for-profit (1)/non-profit (0) the minimum value is 0, the maximum value is 1, the mean is .15, and the standard deviation is .361. For the dummy variable of community college (1)/4-year college (0) the minimum value is 0, the maximum value is 1, the mean is .41, and the standard deviation is .492. Concerning the dummy variable of

Table 1. Variables, Characteristics and Sources

Variables	Minimum	Maximum	Mean	Std. Dev	Source
% of students receiving any financial aid	0	100	75.76	17.961	IPEDS
% of Pell grants students	0	100	47.69	19.142	IPEDS
Public/ private	0	1	.52	.500	IPEDS
Profit/ nonprofit	0	1	.15	.361	IPEDS
Community college/ 4-yr college	0	1	.41	.492	IPEDS
Religious/ Secular	0	1	.14	.350	IPEDS
% of students aged 25-64yrs	0	100	36.40	22.736	IPEDS
% of Asian students	0	75	12.25	11.187	IPEDS
% of Black students	0	53	7.19	7.643	IPEDS
% of Hispanic students	0	91	28.33	17.257	IPEDS
% of White students	0	92	33.14	17.589	IPEDS
% of students enrolled exclusively in distance programs	0	100	9.44	17.614	IPEDS
% of undergraduates enrolled exclusively in distance programs	0	100	9.15	17.827	IPEDS
% of graduate students enrolled	0	100	12.49	24.960	IPEDS

exclusively in distance programs				
% of admitted students	6	100	59.09	21.428	IPEDS
Total enrollment	21	41368	8970.11	9615.664	IPEDS
Salary of instructional staffs	23409	160839	66453.49	31642.046	IPEDS
SAT score	833	1520	1095.83	155.392	Col. Results
% of students submitting SAT	44	98	84.75	10.409	IPEDS
Ratio of students to faculty	1	48	20.16	9.146	IPEDS
Ratio of distance programs/total programs	0	1	.098787	.2279841	IPEDS
Percent of distance programs/total programs	0	100	9.8787	22.79841	IPEDS

religious (1)/secular (0) the minimum value is 0, the maximum value is 1, and the mean is.14 while the standard deviation is .350.

The minimum value of the percent of students aged 25-64 years is 0, and the maximum value is 100% (Taft University System). Its mean is 36.40 with the standard deviation of 22.736. In relation to the percent of Asian students the minimum value is 0 while the maximum value is 75, the mean is 12.25, and the standard deviation is 11.187. The minimum value for the percent of Black students is 0, the maximum value is 53, and the mean is 7.19. For the percent of Hispanic students the minimum value is 0, the maximum value is 91, and the mean is 28.33. About the percent of White students the minimum value is 0 (World Mission University) while the maximum value is 92 (range =

92), the mean is 33.14, and the standard deviation is 17.589.

In regards to the percent of students enrolled exclusively in distance learning programs the minimum value is 0 while the maximum value is 100, the mean is 9.44, and the standard deviation is 17.614. Across all of the institutions of this study almost 10% of students are enrolled exclusively in distance learning programs. For the percent of undergraduate students enrolled exclusively in distance learning programs the minimum value is 0 while the maximum value is 100, the mean is 9.15, and the standard deviation is 17.827. Also, the percent of graduate students enrolled exclusively in distance learning programs has a minimum value of 0 while the maximum value is 100, the mean is 12.49, and the standard deviation is 24.960.

For the percent of students admitted the minimum value is 6 (Stanford University) while the maximum value is 100, and its mean is 59.09. The minimum value of total enrollment of students is 21 (Academy of Couture Art) while the maximum value is 41,368 (University of Southern California), the mean is 8,970.11, and the standard deviation is 9,615.664. For the average salary of instructional staff the minimum value is 23,409 while the maximum value is 160839 (San Jose State University), the mean is 66,453.49, and the standard deviation is 31,642.046.

As regarding average SAT score of students the minimum value is 833 while the maximum value is 1,520 (California Institute of Technology), the mean is 1,095.83, and the standard deviation is 155.392. The minimum value of the percent of students submitting an SAT score is 44 while the maximum value is 98, with a mean of 84.75 and a standard deviation of 10.409. For the ratio of students to faculty the minimum value is 1 (Abraham Lincoln University) while the maximum value is 48, the mean is 20.16, and

the standard deviation is 9.146.

The minimum value of the ratio of distance programs to total programs is 0, the maximum is 1; its mean is .098787 with the standard deviation of .2279841. For an example of the ratio (to be converted to percent) of distance education programs to total offered programs, at Azusa Pacific University it was 0.15 (15%) because the institution had 11 distance education programs out of 71 total programs offered (11 was divided by 71 to mathematically calculate the ratio). In the same way, the ratio for California State University, Fullerton was 0.04 (4%) because the institution had 4 distance education programs out of 105 total programs offered (4 was divided by 105 to calculate the ratio of distance education programs to total programs offered). In these cases, the values of 0.15 (15%) and 0.04 (4%) represented the level of commitment these example institutions had towards distance education. Concerning the percent of distance programs the minimum value is 0 while the maximum value is 100 (range = 100), the mean is 9.8787, and the standard deviation is 22.79841. In other words, approximately 10% of all academic programs across the institutions of this study are distance learning.

The data for these variables are gleaned from the IPEDS (Integrated Postsecondary Education Data System) with the most recent and also complete results possible, which are collected from the years 2013-2014 (the school year stretching from 2013-2014 depending on the nature of the variable being studied).

Instrumentation and Materials

Several different types of materials are used to conduct the different parts of this research project. As expected, record-keeping tools like physical spreadsheets and computerized spreadsheet programs like SPSS (Statistical Package for Social Sciences),

GNU PSPP, Google Drive/Spreadsheets, and Microsoft Office and Excel are all utilized. These software programs and tools are necessary for data collection, evaluations, record-keeping, and analyses. Similar computer programs like these statistical software programs are also utilized to analyze the data in meaningful forms and to provide organized assessment.

It is interesting to note that this study also utilizes or directly observes elements of distance learning such as the distance education platforms and computer technology programs used or mentioned in this research project. Proper forms of working Internet access are certainly needed and proper access to other relevant personal devices (i.e., portable computers, laptops, online data interfaces) are all needed as well. For data collection and analysis, other programs such as simple generators for charts and diagrams as well as online calculators are also all utilized.

Institutions/Subjects Observed

Data collection is conducted with the Integrated Postsecondary Education Data System (IPEDS) from the National Center of Education Statistics (NCES), and the units of analysis are the 4-year, baccalaureate level and above/degree-granting institutions of higher education and community colleges in the state of California. The state of California has been a significant "leader amongst the states" in higher education and is noted to be highly representative of the various, diverse facets that can be seen in the field and are shared by institutions across the nation, along with both the successes and challenges that are present in the American model of higher education and experienced by the states (Tierney & Rodriguez, 2014, 4). California is the nation's "most populous state" with almost 40 million residents measured in 2013 and is home to more than 15%

of the United States population (Finney et al., 2014, 5). Interestingly, the state also has "one of the youngest populations" due to its large amount of young adults, many of whom are college-aged or are pre-college (Finney et al., 2014, 5). It is important to note that California is certainly the nation's "most… diverse state" as well, and high immigration rates from regions like Latin America and Asia have "increase[d] ethnic diversity" to great heights in the state (Finney et al., 2014, 5-6; IPEDS, 2015).

As a result, the state of California has "the largest and one of the most diverse systems of education in the nation," giving ample, and frequently, the most, representation to various institutional characteristics and different types of institutions (i.e., public and private), diverse student groups (i.e., nontraditional students and enrollment sizes), different admissions approaches, financial perspectives (i.e., faculty salaries and financial aid), varying ratios of students to faculty, and other key institutional factors discussed in this study and in the literature (Finney et al., 2014, 6). For instance, the state houses hundreds of institutions (both traditional 4-year, on-campus schools and nontraditional colleges) and has several million students enrolled in all of them across colleges with various structural similarities and differences. California also has the most member universities in the Association of American Universities (AAU), more than any other state in America, which is why it is "rank[ed] among the top states in research performance" and is also home to the most traditional college campuses in the nation (Finney et al., 2014, 6-9; Tierney & Rodriguez, 2014).

In the same way, the state of California also faces the same challenges representative of key issues in higher education that American institutions have been dealing with. National financial dilemmas and difficulties in creating effective higher

education policies, among other major issues, have caused the state's system to be characterized by various disparities and declines, including funding problems and decreased affordability, just like its peers. Like the rest of the nation, the state is also experiencing a trend in that it is generally "also getting poorer," coupled with increasing tuition rates, continued recession effects, and rising poverty levels, which is important to note because California's "major industries mirror that of the U.S. as a whole" (Finney et al., 2014, 5). The education sector is among the identified major industries, and it is projected to "continue growing," along with other sectors that will significantly and increasingly require the workforce to have a college degree (Finney et al., 2014, 6). This trend, among others, is also problematic because if they continue, the state will "will experience severe shortfalls" in the amounts of people who have the collegiate credentials needed to "ensure social mobility and prosperity," and this is the same for the rest of the nation (Finney et al., 2014, 4). As a result, California is noted to have the same need to improve its system of higher education with the rest of the United States and has likewise been recommended to work on its distance education opportunities, due to the purported benefits and advantages as previously discussed in the literature. Scholars such as Tierney and Rodriguez (2014, 19) urge that the state "needs to improve its ability to offer [distance] courses," especially since, "like most states," it has not "fully embraced" distance learning yet. In the same way, other previously mentioned factors such as the "young population" also indicate further research importance in regards to distance learning (Tierney & Rodriguez, 2014). The 10% averages for the dependent variables in Table 1 are below the national averages; in fall 2012, about 2.6 million (roughly 12% of the total enrollment) were enrolled in exclusively distance learning programs according

to the IPEDS data (NCES, 2014).

When analyzed more specifically, the institutions of higher education evaluated for this project include schools that are very well known both nationally and internationally. Among the most prominent is the University of California (UC) system, comprised of eleven UC schools (UC Berkeley, UC Los Angeles, UC San Diego, UC Davis, UC Santa Barbara, UC Merced, UC Santa Cruz, UC Irvine, UC Hastings, UC Riverside, and UC San Francisco). While public institutions, several of these colleges have achieved national and international prominence by consistently displaying competitive results and statistics in comparison to fellow prestigious universities, based on factors such as admission rates, number of research achievements, number of Nobel Prize laureates, academic records of applicants and enrollees, performance indicators of applicants, etc. (NCES, 2015). Another major group is the California State University (CSU) system of public institutions that were also well-known regionally as well, comprised of twenty-three CSU schools, which include regionally recognized institutions such as CSU Fullerton, CSU Long Beach, San Francisco State, San Diego State, San Jose State, Sacramento State, California Polytechnic University, Pomona, and California Polytechnic University San Luis Obispo.

Along with the major state or public research universities, the institutions evaluated also include various private institutions. This group of schools also demonstrated a variety of identifying traits in that they included colleges that were small and large, nonprofit and for-profit, liberal arts colleges, or major research universities just like their public counterparts. Several well-known and internationally recognized institutions include Stanford University, the University of Southern California,

Pepperdine University, Occidental College, the California Institute of Technology (Cal Tech), the Otis College of Art and Design, Pomona College, Scripps College, Harvey Mudd College (and other schools within the Claremont Consortium, such as Claremont Mckenna and Pitzer College), the Art Center College of Design in Pasadena, Chapman University, and Biola University. While these were all private schools that are not included in any of the public systems within California, a remarkable diversity was displayed within the characteristics of these institutions' characteristics, (especially in regards to prestige in their respective fields) through the different types of concentration, professional, historical, or even religious affiliations that these institutions have (NCES, 2015; Petersons, 2015; Finney et al., 2014).

The state of California is home to one of the largest community college systems in the world – the California Community Colleges (CCC) system consists of over 110 schools, and more than two million students from all over the world and from numerous backgrounds attend these institutions. Most of the community colleges offer distance education classes by radio and video (along with traditional on-campus courses), and several even offer distance education programs for their students to study abroad in other foreign nations (California Community Colleges Chancellor's Office, 2016). Jennifer Ma of the College Board and Sandy Baum reported that nearly 42% of all undergraduate students in the state were recorded as attending community colleges in the Fall term of 2014, and 25% of full-time undergraduates were found to be at community colleges (Ma & Baum, 2016, 1). Also, in the school year of 2013-14, about 46% of all students who completed a 4-year college degree had enrolled at community college at least once in the previous decade (National Student Clearinghouse Research Center, 2015, 8).

The diverse environments, demographics, academic structures, and other aspects of the institutions are very well represented throughout these colleges. Certain differences can be seen through the different institutional datasets from schools in all these groups. A few minor yet interesting examples include some of the postsecondary schools being in rural areas while others are in urban areas. Some are comprised of student populations made up of traditionally aged (ages 18-24 years) enrollees while others have more non-traditional students (ages 25-64 years).

Furthermore, some are known for certain programs and academic focuses, and others are known for their rigorous extracurricular programs, etc. The same is also applicable for the widely varying sizes of student enrollments, the ratio of students to faculty, average salaries of full-time faculty members, percentages of students receiving any financial aid, and ratios of distance education programs offered in comparison to the total number of academic programs the institutions offer. The wealth of information and diversity is not unexpected, as previous discussion indicated that California houses the most postsecondary institutions with the most diverse higher education, easily showcasing the most diversity in types, categories, and variables as well (IPEDS, 2015).

Data Source

Archival data on the colleges and universities observed are collected from the renowned IPEDS (The International Postsecondary Education Data System) through the use of the organization's interactive databases and customizable option sets. The IPEDS is one of the most well-known and well-regarded databases for higher education in the world, and it is described to be "the primary source for data on colleges, universities, and technical and vocational postsecondary institutions in the United States" (IPEDS, 2015).

The IPEDS is overseen by the Institute of Education Sciences (IES) and the

National Center for Education Statistics (NCES), as well as by the United States

Department of Education overall. The NCES is described as the following: "[NCES is]

the primary federal entity for collecting and analyzing data related to education in the

U.S. and other nations. NCES is located within the U.S. Department of Education and the

Institute of Education Sciences, and fulfills a Congressional mandate to collect, collate,

analyze, and report complete statistics on the condition of American education; conduct

and publish reports; and review and report on education activities internationally"

(NCES, 2015).

The archival data are specifically accessed from the IPEDS's Data Center through

which various data options, such as assessing institutional comparisons, assessing group

statistics, sorting and viewing trends for certain variables, generating defined reports, and

creating custom data file sets are all utilized in the order of appearance. When first

customizing and accessing the data collection, this study acquired data from institutions

that are categorized based on the following criteria that are also identified by the IPEDS

to be "special characteristics," as described below.

Data Collection

In regards to the specific data collection process, various jurisdiction

categorizations are selected in the system options in order to group together the 4-year

(baccalaureate level and above) colleges and community colleges observed, and sector

categorizations are selected to glean the subcategories of these institutions for evaluation.

Public (coded as 1) vs. private (coded as 0), for-profit (coded as 1) vs. non-for profit

(coded as 0), community college (coded as 1) vs. 4-year college (coded as 0), and

religious (coded as 1) vs. secular (coded as 0) are all individually selected and separated

for their inclusion in the testing group as they represent currently existing and viable

postsecondary, 4-year colleges, degree-granting, baccalaureate or above and community

colleges within the state. "Administrative units" as an option are separated and phased

out separately due to their markedly different models from the college, as this category

refers to college offices and off-campus branches that are not actual academic

institutions, but are rather administrative centers or logistic branches.

In regards to the specific data analysis process, the aforementioned data files are

downloaded in both .csv and SPSS formats. They are coded and analyzed in the SPSS

software program (Statistical Package for the Social Sciences, now also known as

"Statistical Products and Service Solutions") which was formerly operated by SPSS, Inc.

and is now overseen by the IBM Corporation (SPSS, 2015). Other software programs

utilized include GNU (General Public License) PSPP, Microsoft Excel, and Google

Sheets and Analytics. Data values for the independent and dependent variables are

organized in these systems alphabetically and categorically throughout the analyses. PDF

and physical copies of the files are collected as well. The dataset is included in the

Appendix for further reference.

Data Analyses

Statistical tests and analyses such as ordinary least squares regression tests and the

difference of means tests (*t* test) are conducted for the hypotheses using these statistical

tools and the variables described within this study (SPSS, 2015). Statistical significance

is measured at the 0.01 and 0.05 and 0.10 levels of significance, and correlation tests are

also conducted to measure the nature of the variable relationships and to see whether they

are positive or negative. In more detail, Hypothesis 1 goes through tests such as the difference of means tests and the ordinary least squares regression test, while Hypothesis 2, Hypothesis 3, Hypothesis 4, Hypothesis 5, Hypothesis 6, and Hypothesis 7 go through tests such as the ordinary least squares regression test and correlation analyses.

These different data analyses are conducted using the main dependent variable of institutional commitment to distance learning (measured in this study as the percent of distance education programs offered in comparison to total academic programs offered, percentage of students enrolled exclusively in distance learning programs, percentage of undergraduates enrolled exclusively in distance learning programs, and percentage of graduates enrolled exclusively in distance learning programs) against the 13 independent variables and four dummy variables. Hypothesis 1 through Hypothesis 7 of the study reflect the specific 10 out of 17 independent variables.

Statement on Validity, Reliability, and Bias

A goal of this project is to try to ensure an appropriate level of validity and reliability in this study. Remler (2011) identifies validity to be "how well the measure actually presents the true construct of interest." The study appears to have accuracy in terms of measuring what is intended to be measured as evidenced by the findings, resulting statistics, descriptive data on the evaluated institutions, and corresponding data analyses, enhancing the overall validity. The research project also displays reliability in certain respects (which is defined to be the "consistency of the measure and is directly related to the concept of random error, or noise") in that the results are consistent across the different variables tested (Remler, 2011). Additionally, the diversity and size of the Californian education system also adds to the validity present within this study.

Efforts are also made to minimize the amount of bias ("systematic measurement error") or noise ("random measurement error") as possible, which can also affect the validity and reliability of this study if not addressed properly. No institution is given preference or favor over another in terms of data collection, testing, and analyses. The archival data are gleaned from a highly reputable source that upholds transparency and objectivity in their data collection and fact-finding (the IPEDS openly offers a broad repertoire of information, including data collection schedules, survey materials, statutory requirements, procedures for responding/participation, and the purposes/uses of all their survey data.). Data are certainly cleaned and handled appropriately using reputable statistical software packages and procedures as well. The different tests and analyses are also carried out carefully and according to the basic principles of quantitative data analysis. While there is always the possibility for uncontrollable or unpredictable errors, there are no mechanical failures as far as the researcher is aware. There are also no observations which are factually incorrect, as all data are double-checked and cleaned prior to usage. Potential aspects of the study that would have been characteristic of unreliable or invalid tests (affected by bias and noise) are not noticeably present in the study (Remler, 2011).

Limitations

This project is inevitably faced with a few different kinds of limitations throughout its duration. For example, the scope of this study is restricted to assessing only a set number out of the many possible different institutional aspects one can assess; the sheer number of demographic options is one example of such a limitation. Also, the project focuses on the 4-year, baccalaureate level and above institution and community

colleges of higher education and not institutions with very different, nontraditional makeups. As is the case with many research studies that are quantitative in nature, another limitation is that collecting only quantitative data potentially limits the amount of insight possible from investigating the project's research goals. If certain sets of qualitative data are also collected, this study would be able to observe further analyses and discover findings of further importance. Overall, the project can also utilize a variety of other research methodologies available as options when assessing such independent and dependent variables. At the same time, the limitations also open up opportunities for future researchers to take steps further and make additional or related analyses into the material discussed by this research project. Future researchers may see that there are several highly interesting routes of study that one can take due to the multiple options available and choices researchers can make for continued study into the fields of higher education and distance learning.

Chapter IV

RESULTS AND FINDINGS

This chapter presents the archival data collected from the IPEDS (the International Postsecondary Education Data System) regarding the different independent variables and dependent variables used for this study, which include the various institutional aspects previously mentioned in earlier pages, as well as the level of "commitment" to distance education/online learning in the state of California (measured in this study by the percent of distance programs, the percentage of students enrolled exclusively in distance learning programs, the percentage of undergraduate students enrolled exclusively in distance learning programs, and the percentage of graduate students enrolled exclusively in distance learning programs). This study attempts to determine if there are relationships between the dependent variables and the independent variables. Each of the hypotheses is evaluated, and statistical tests such as utilizing ordinary least squares (OLS) regression, calculating correlation coefficients, and conducting t tests are all among the analyses conducted. The data are analyzed, prepared, and manipulated using various statistical software programs such as IBM's SPSS (Statistical Package for the Social Sciences, or "Statistical Products and Service Solutions"), GNU (General Public License) PSPP, Microsoft Office Excel, and Google Sheets & Analytics. This chapter is organized by the presentation of the hypotheses and the research question.

Overview

The four dependent variables in this study are the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance programs offered. The levels of "commitment" to distance education/online learning in the state of California are represented by these four dependent variables.

The categories of institutions such as public vs. private, for-profit vs. non-profit, 4-year vs. community college, and religious vs. secular are analyzed as independent (dummy) variables with the four dependent variables. Table 2 summarizes the results of the difference of means test (*t* test) between these categorical variables and the four dependent variables.

Also, other independent variables are the percentage of students receiving any type of financial aid, the percentage of students receiving Pell grants, the percentage of undergraduate students aged 25-64 years, the percentage of Asian students, the percentage of Black students, the percentage of Hispanic (Latino) students, the percentage of White students, the percentage of students admitted, total enrollment, average salary equated to nine months of full-time instructional staff, the percentage of students submitting an SAT score, SAT score, and the ratio of students to faculty. Table 3 reports the results of the correlation analysis between these 13 independent variables and the four dependent variables for all 4-year colleges and universities and community colleges in California, and Table 4 details the results of OLS regression analysis between eight out of 13 independent variables and two out of four dummy

(categorical) independent variables and the four dependent variables for all 4-year

colleges and universities and community colleges in California. The OLS regression

models include just those variables for which data are available for almost all the cases.

Meanwhile, to include a variable such as SAT score or percent of students submitting

an SAT score reduces the number of cases by more than half. The data for these

variables are gleaned from the IPEDS with the most recent and also complete results

possible, which are collected from the years 2013-2014 (the school year stretching

from 2013-2014 depending on the nature of the variables being studied).

This study includes the three stages of statistical analysis. The first stage

examines all the 4-year colleges and universities and community colleges in California.

The second stage excludes those institutions that are 0% and 100% distance education.

The final stage excludes those institutions that have very small student enrollments (less

than 400 students). Relationships discovered in the first stage might be driven by

institutions that are fully online or institutions that offer no online coursework so the

second stage tests for this possibility. It might also be driven by exceptionally small

institutions which are tested in the third stage. This is the reason for retesting those

relationships with the exclusion of outliers for 0% and 100% online institutions as well as

removing the exceptionally small schools.

The following research question is explored in this study:

Q: What institutional characteristics predict the level of commitment to distance

education among 4-year, baccalaureate level and above colleges and universities

as well as community colleges in California?

As mentioned earlier, the hypotheses in this study are articulated for the

independent variables in which data are available for almost all of the cases in the dataset. The hypotheses are tested using the collected archival data from IPEDS overseen by the National Center for Education Statistics, Institute of Education Sciences, and the United States Department of Education.

Table 2 shows the results of the *t* test for the categorical variables to determine which variables of institutional sectors significantly indicate the level of institutional commitment to distance education among 4-year colleges and universities and community colleges in California. The results report that the private institutions (11.46%) indicate a significantly higher percent of students enrolled exclusively in the distance programs than the public institutions (7.61%) at the 0.10 level of significance (*t* = -1.769, p = .079). The for-profit institutions (17.12%) report a significantly higher percent of students enrolled exclusively in distance programs than non-profit institutions (8.08%) at the 0.10 level of significance (*t* = 1.755, p = .086). On the other hand, the findings reveal no significant difference between 4-year colleges and community colleges for the percent of students enrolled exclusively in the distance programs. Also, the results show that there is no significant difference between religious institutions and secular institutions for the percent of students enrolled exclusively in the distance programs.

In relation to the percent of undergraduate students enrolled exclusively in the distance programs the results present that between the public institutions and the private institutions there is not a significant difference. The for-profit institutions (17.50%) show a significantly higher percent of undergraduate students exclusively in the distance programs than the non-profit institutions (7.68%) at the 0.10 level of significance (*t* = 1.850, p = .071). The results show that there is no significant difference between 4-year

Table 2. Results of *t* test for the Categorical Variables

DVs	IVs	Categories	*M* (SD)	t-test
Percent of students enrolled exclusively in distance programs	Public/Private	Public	7.61 (9.7)	*t* = -1.769 (*p* = .079)*
		Private	11.46 (23.32)	
	For-Profit/ Non-profit	For-Profit	17.12 (32.93)	*t* = 1.755 (*p* = .086)*
		Non-Profit	8.08 (12.86)	
	CC/4yr	CC	9.59 (10.15)	*t* = .131 (*p* = .896)
		4 Year	9.34 (21.31)	
	Religious/Secular	Religious	12.70 (17.83)	*t* = 1.266 (*p = .207)*
		Secular	8.90 (17.56)	
Percent of undergraduate students enrolled exclusively in distance programs	Public/Private	Public	7.57 (9.72)	*t* = -1.510 (*p* = .133)
		Private	10.9 (23.69)	
	For-Profit/ Non-profit	For-Profit	17.50 (33.98)	*t* = 1.850 (*p = .071)*
		Non-Profit	7.68 (12.642)	
	CC/4yr	CC	9.59 (10.15)	*t* = .380 (*p = .704)*
		4 Year	8.86 (21.601)	
	Religious/Secular	Religious	11.00 (17.61)	*t* = .707 (*p = .480)*
		Secular	8.85 (17.88)	
Percent of graduate students enrolled exclusively in distance programs	Public/Private	Public	2.56 (4.56)	*t* = -4.614 (*p = .000)***
		Private	14.47 (27.69)	
	For-Profit/ Non-profit	For-Profit	25.63 (38.312)	*t* = 2.146 (*p = .040)***
		Non-Profit	9.32 (19.459)	
	CC/4yr	CC		*t* test cannot be computed because the CC group is empty.
		4 Year	12.49 (24.96)	
	Religious/Secular	Religious	17.14 (24.28)	*t* = 1.325 (*p = .187)*
		Secular	10.8 (25.11)	

	Public/Private	Public	2.99 (6.18)	*t* = -5.293 (*p* = *.00)***
		Private	17.87 (31.03)	
	For-Profit/ Non-profit	For-Profit	23.06 (36.72)	*t* = 2.432 (*p* = *.020)***
Percent of distance programs		Non-Profit	7.87 (19.18)	
	CC/4yr	CC	3.39 (6.76)	*t* = -4.750 (*p* = *.00)***
		4 Year	14.56(28.49)	
	Religious/Secular	Religious	21.97 (31.49)	*t* = 2.706 (*p* = *.010)***
		Secular	7.85 (20.4)	

*p ≤ .10, **p ≤ .05, ***p ≤ .01

colleges and community colleges in the percent of undergraduate students enrolled exclusively in the distance programs. The findings also reveal no significant difference between religious institutions and secular institutions in the percent of undergraduate students enrolled exclusively in the distance programs.

In regards to the percent of graduate students exclusively in the distance programs the private institutions (14.47%) present a significantly higher percent of graduate students exclusively in the distance programs than the public institutions (2.56%) at the 0.01 level of significance (*t* = -4.614, p = .000). The for-profit institutions (25.63%) show a significantly higher percent of graduate students exclusively in the distance programs than the non-profit institutions (9.32%) at the 0.05 level of significance (*t* = 2.146, p = .040). The difference of means test between the variable of 4-year institutions and community colleges for the percent of graduate students enrolled exclusively in the distance programs cannot be computed because the community college group is empty. Between religious institutions and secular institutions this study does not discover a significant difference in the percent of graduate students enrolled exclusively in the distance programs.

For the percent of distance programs the private institutions (17.87%) indicate a

significantly higher percent of distance programs than the public institutions (2.99%) at

the 0.01 level of significance (t = -5.293, p = .000). The for-profit institutions (23.06%)

show a significantly higher percent of distance programs than the non-profit institutions

(7.87%) at the significance level of 0.05 (t = 2.432, p = .020). Also, the results of the t

test reveal that the 4-year institutions (14.56%) display a significantly higher percent of

distance programs than the community college institutions (3.39%) at the 0.01 level of

significance (t = -4.750, p = .000) and that the religious institutions (21.97%) show a

significantly higher percent of distance programs than the secular institutions (7.85%) at

the 0.01 level of significance (t = 2.706, p = .010). The difference of means tests indicate

that the most compelling variables to analyze are public vs. private and for-profit vs. non-

profit which is why they are included as the key dummy variables in all the final models

(see Table 4, 6, and 8).

Table 3 summarizes the results of the correlation analysis in stage 1 for all 4-year

colleges and universities and community colleges in CA. The correlation coefficients

(Pearson's r) appear in each cell in Table 3. The results reveal that the percent of

students receiving any financial aid shows statistically significant negative correlations

with three dependent variables. This means as the percent of students receiving any

financial aid increases, the percent of students enrolled exclusively in the distance

programs (r = -.151, p = .016), the percent of undergraduate students exclusively in the

distance programs (r = -.164, p = .009), and the percent of graduate students exclusively

in the distance programs (r = -.206, p = .026) decrease.

The percent of students receiving Pell grants presents statistically significant

Table 3. Correlation Analysis of Commitment to Distance Education for All Colleges and Universities in CA

Independent Variables	Percent of students enrolled exclusively in distance programs	Percent of undergraduate students enrolled exclusively in distance programs	Percent of graduate students enrolled exclusively in distance programs	Percent of distance programs
Percent of students receiving any financial aid	-.151**	-.164***	-.206**	-.097
Percent of students receiving Pell grants	.107*	.111*	.148	.110*
Percent of undergraduate students aged 25-64 yrs	.427***	.453***	.343***	.497***
Percent of Asian students	-.131**	-.118**	-.191**	-.050
Percent of Black students	.205***	.207***	.255***	.123**
Percent of Hispanic students	-.138**	-.121**	-.191**	-.219***
Percent of White students	.065	.037	.104	.050
Percent of students admitted	.353***	.312***	.406***	.388***
Total enrollment	-.142**	-.142**	-.148*	-.218***
Average salary equated to nine months of full-time instructional staff	-.043	-.025	-.028	-.074
SAT score	-.237**	-.266**	-.177	-.233**
Percent of students submitting an SAT score	-.213*	-.180	-.238**	-.253**

| Ratio of students/faculty | -.057 | -.037 | -.164* | -.216*** |

positive relationships with three dependent variables. This means as the percent of students receiving Pell grants increases, the percent of students enrolled exclusively in the distance programs (r = .107, p = .088), the percent of undergraduate students enrolled exclusively in the distance programs (r = .111, p = .076), and the percent of the distance programs (r = .110, p = .079) also increase. The percent of undergraduate students aged 25-64 years shows statistically significant positive correlations with all dependent variables. This means as the percent of nontraditional students increases, the percent of students enrolled exclusively in the distance programs (r = .427, p = .000), the percent of undergraduate students enrolled exclusively in the distance programs (r = .453, p = .000), the percent of graduate students enrolled exclusively in the distance programs (r = .343, p = .000), and the percent of distance programs (r = .497, p = .000) also increase.

The percentage of Asian (part of minority) students highlights statistically significant negative correlations with three dependent variables. This means as the percentage of Asian students increases, the percent of students enrolled exclusively in the distance programs (r = -.131, p = .028), the percent of undergraduate students enrolled exclusively in the distance programs (r = -.118, p = .048), and the percent of graduate students enrolled exclusively in the distance programs (r = -.191, p = .024) decrease. The percentage of Black students shows statistically significant positive correlations with all dependent variables. This means as the percentage of Black students increases, the percent of students enrolled exclusively in the distance programs (r = .205, p = .001), the percent of undergraduate students enrolled exclusively in the distance programs (r = .207,

p = .000), the percent of graduate students enrolled exclusively in the distance programs (r = .255, p = .002), and the percent of distance programs (r = .123, p = .043) also increase. The percentage of Hispanic students illustrates statistically significant negative correlations with all dependent variables. This means as the percentage of Hispanic students increases, the percent of students enrolled exclusively in the distance programs (r = -.138, p = .021), the percent of undergraduate students enrolled exclusively in the distance programs (r = -.121, p = .044), the percent of graduate students enrolled exclusively in the distance programs (r = -.191, p = .025), and the percent of distance programs (r = -.219, p = .000) decrease. None of the dependent variables has a statistically significant correlation with the percentage of White students.

The percent of students admitted (N = 109 out of 281) shows statistically significant positive correlations with all dependent variables. This means as the percent of students admitted increases, the percent of students enrolled exclusively in the distance programs (r = .353, p = .000), the percent of undergraduate students enrolled exclusively in the distance programs (r = .312, p = .001), the percent of graduate students enrolled exclusively in the distance programs (r = .406, p = .000), and the percent of distance programs (r = .388, p = .000) also increase. Total enrollment points out statistically significant negative correlations with all dependent variables. This means as the total enrollment increases, the percent of students enrolled exclusively in the distance programs (r = -.142, p = .018), the percent of undergraduate students enrolled exclusively in the distance programs (r = -.142, p = .018), the percent of graduate students enrolled exclusively in the distance programs (r = -.148, p = .083), and the percent of distance programs (r = -.218, p = .000) decrease. The average salary equated to nine months of

full-time instructional staff shows no significant correlation with any of the dependent variables.

The average SAT score (N = 83 out of 281) demonstrates statistically significant negative correlations with three dependent variables. This means as the SAT score increases, the percent of students enrolled exclusively in the distance programs (r = -.237, p = .031), the percent of undergraduate students enrolled exclusively in the distance programs (r = -.266, p = .015), and the percent of distance programs (r = -.233, p = .034) decrease. The percent of students submitting an SAT score (N = 83 out of 281) shows statistically significant negative correlations with three dependent variables. This means as the percent of students submitting an SAT score increases, the percent of students enrolled exclusively in the distance programs (r = -.213, p = .053), the percent of graduate students enrolled exclusively in the distance programs (r = -.238, p = .038), and the percent of distance programs (r = -.253, p = .022) decrease. The ratio of students to faculty shows statistically significant negative correlations with the percent of graduate students enrolled exclusively in the distance programs and the percent of distance programs. This means as the ratio of students to faculty increases, the percent of graduate students enrolled exclusively in the distance programs (r = -.164, p = .054) and the percent of distance programs (r = -216, p = .000) decrease.

Table 4 summarizes the results of the OLS regression models in stage 1 for all 4-year colleges and universities and community colleges in CA. Cell entries are unstandardized regression coefficients in Table 4. Standard errors are in parentheses. Model 1 (the second column of Table 4) examines the results of the OLS regression analysis of 10 independent variables with the dependent variable of the percent of

Table 4. OLS Regression Analysis of Commitment to Distance Education for All Colleges and Universities in CA

Independent Variables	Model 1: Percent of students enrolled exclusively in distance programs	Model 2: Percent of undergraduate students enrolled exclusively in distance programs	Model 3: Percent of graduate students enrolled exclusively in distance programs	Model 4: Percent of distance programs
Percent of students receiving any financial aid	-.193** (.080)	-.178** (.079)	-.393** (.159)	-.344*** (.096)
Percent of students receiving Pell grants	.039 (.082)	.007 (.081)	.276 (.176)	.206** (.098)
Percent of students aged 25-64 yrs	.469*** (.064)	.476*** (.064)	.315** (.144)	.592*** (.077)
Percent of Asian students	-.369*** (.088)	-.345*** (.087)	-.652*** (.173)	-.251** (.105)
Percent of Black students	.044 (.129)	.045 (.128)	.147 (.353)	-.139 (.154)
Percent of Hispanic students	-.142* (.080)	-.125 (.079)	-.383* (.228)	-.062 (.095)
Total enrollment	.000 (.000)	.000 (.000)	.000 (.000)	.0003** (.000).
Ratio of students/faculty	-.097 (.176)	-.055 (.174)	-.309 (.440)	-.337 (.211)
Public/Private	-5.301 (3.596)	-3.800 (3.555)	-9.734 (9.469)	-20.945*** (4.297)
For-Profit/ Non-profit	-5.252 (3.365)	-2.976 (3.326)	-2.402 (6.349)	-10.400*** (4.020)
Constant	19.439*** (6.127)	16.788*** (6.056)	43.154*** (12.336)	.28.490*** (7.321)

$*p \leq .10, **p \leq .05, ***p \leq .01$

F	13.584***	14.072***	6.596***	18.540***
r^2	.358	.366	.386	.432
N	255	255	116	255

students enrolled exclusively in the distance programs. The results of the statistical analyses indicate that the percent of undergraduate students aged 25-64 years predicts the percent of students enrolled exclusively in the distance program, measured at the 0.01 level of significance (B = .469, p ≤ .01). For every percentage increase in undergraduates aged 25-64 years, there is almost a half percent increase in students enrolled exclusively in distance programs; the more undergraduate students aged 25-64 years, the more students enrolled exclusively in the distance programs.

The percent of Asian students is a powerful predictor of the percent of students enrolled exclusively in the distance programs at the 0.01 level of significance (B = -.369, p ≤ .01). For every percentage increase in Asian students, the percent of students enrolled exclusively in the distance programs declines by almost two-fifths of a percentage point; the higher percentage of Asian students, the less percent of students enrolled exclusively in the distance programs. The percent of Hispanic students is also a predictor of the percent of students enrolled exclusively in the distance programs at the 0.10 level of significance (B = -.142, p ≤ .10). For every percentage increase in Hispanic students, the percent of students enrolled exclusively in the distance programs declines by a seventh of a percentage point; the higher percentage of Hispanic students, the less percent of students enrolled exclusively in the distance programs.

The percentage of students receiving any financial aid is a powerful predictor of the percent of students enrolled exclusively in the distance programs at the 0.05 level of significance (B = -.193, p ≤ .05). For every percentage increase in the percentage of students receiving any financial aid, the percent of students enrolled exclusively in the distance programs declines by almost one fifth of a percentage point; the higher

percentage of students receiving any financial aid, the less percent of students enrolled exclusively in the distance programs. Other independent variables such as the percent of students receiving Pell grants, the percentage of Black students, total enrollment, the ratio of students to faculty, the dummy variable of public/private, and the dummy variable of for-profit/non-profit do not turn out to be significant predictors of the percent of students enrolled exclusively in the distance programs. The model explains 35.8% of the variance in the percent of students enrolled exclusively in the distance programs.

Model 2 shows the results of the OLS regression analysis of 10 independent variables with the dependent variable of the percent of undergraduate students enrolled exclusively in the distance programs. The percent of undergraduate students aged 25-64 years predicts the percent of undergraduate students enrolled exclusively in the distance programs, measured at the 0.01 level of significance (B = .476, p ≤ .01). For every percentage increase in undergraduates aged 25-64 years, there is almost a half percent increase in undergraduate students enrolled exclusively in distance programs; the more undergraduate students aged 25-64 years, the more undergraduate students enrolled exclusively in the distance programs. The percentage of Asian students is a very powerful predictor of the percent of undergraduate students enrolled exclusively in the distance programs at the 0.01 level of significance (B = -.345, p ≤ .01). For every percentage increase in Asian students, the percent of undergraduate students enrolled exclusively in the distance programs declines by almost a third of a percentage point; the higher percentage of Asian students, the less percent of undergraduate students enrolled exclusively in the distance programs.

The percentage of students receiving any financial aid is a powerful predictor of

the percent of undergraduate students enrolled exclusively in the distance programs at the

0.05 level of significance (B = -.178, p ≤ .05). For every percentage increase in the

percentage of students receiving any financial aid the percent of undergraduate students

enrolled exclusively in the distance programs declines by almost two-tenths of a

percentage point; the higher percentage of students receiving any financial aid, the less

percent of undergraduate students enrolled exclusively in the distance programs. Other

independent variables such as the percent of students receiving Pell grants, the percentage

of Black students, the percentage of Hispanic students, total enrollment, the ratio of

students to faculty, the dummy variable of public/private, and the dummy variable of for-

profit/non-profit do not turn out to be significant predictors of the percent of

undergraduate students enrolled exclusively in the distance programs. The model

accounts for 36.6% of the variance in the percent of undergraduate students enrolled

exclusively in the distance programs.

Model 3 highlights the results of the OLS regression analysis of 10 independent

variables with the dependent variable of the percent of graduate students enrolled

exclusively in the distance programs. The percent of undergraduate students aged 25-64

years is a powerful predictor of the percent of graduate students enrolled exclusively in

the distance programs at the 0.05 level of significance (B = .315, p ≤ .05). For every

percentage increase in undergraduates aged 25-64 years, there is almost a one-third

percentage increase in graduate students enrolled exclusively in distance programs; the

more undergraduate students aged 25-64 years, the more graduate students enrolled

exclusively in the distance programs. The percentage of Asian students is a powerful

predictor of the percent of graduate students enrolled exclusively in the distance

programs at the 0.01 level of significance (B = -.652, p ≤ .01). For every percentage

increase in Asian students, the percent of graduate students enrolled exclusively in the

distance programs declines by almost two-thirds of a percentage point; the higher

percentage of Asian students, the less percent of graduate students enrolled exclusively in

the distance programs. The percentage of Hispanic students is a significant predictor of

the percent of graduate students enrolled exclusively in the distance programs at the 0.10

level of significance (B = -.383, p ≤ .10). For every percentage increase in the percentage

of Hispanic students, the percent of graduate students enrolled exclusively in the distance

programs declines by almost two-fifths of a percentage point; the higher percentage of

Hispanic students, the less percent of graduate students enrolled exclusively in the

distance programs.

The percentage of students receiving any financial aid is a powerful predictor of

the percent of graduate students enrolled exclusively in the distance programs at the 0.05

level of significance (B = -.393, p ≤ .05). For every percentage increase in the percentage

of students receiving any financial aid, the percent of graduate students enrolled

exclusively in the distance programs declines by almost two-fifths of a percentage point;

the higher percentage of students receiving any financial aid, the less percent of graduate

students enrolled exclusively in the distance programs. Other independent variables such

as the percent of students receiving Pell grants, the percentage of Black students, total

enrollment, the ratio of students to faculty, the dummy variable of public/private, and the

dummy variable of for-profit/non-profit do not turn out to be significant predictors of the

percent of graduate students enrolled exclusively in the distance programs. Model 3

explains 38.6% of the variance in the percent of graduate students enrolled exclusively in

the distance programs.

Model 4 describes the results of OLS regression analysis of 10 independent variables with the dependent variable of the percent of distance programs. The percent of undergraduate students aged 25-64 years predicts the percent of distance programs, measured at the 0.01 level of significance (B = .592, p ≤ .01). For every percentage increase in undergraduates aged 25-64 years, the percent of distance programs rises by three-fifths of a percentage point. The percentage of Asian students predicts the percent of distance programs, measured at the 0.05 level of significance (B = -.251, p ≤ .05). For every percentage increase in Asian students, the percent of distance programs declines by a fourth of a percentage point.

The percentage of students receiving any financial aid, predicts the percent of distance programs, measured at the 0.01 level of significance (B = -.344, p ≤ .01). For every percentage increase in the percentage of students receiving any financial aid the percent of distance programs declines by a little more than a third of a percentage point. The percentage of students receiving Pell grants predicts the percent of distance programs, measured at the 0.05 level of significance (B = .206, p ≤ .05). For every percentage increase in students receiving Pell grants, the percent of distance programs rises by a fifth of a percentage point. Total enrollment predicts the percent of distance programs, measured at the 0.01 level of significance (B = .0003, p ≤ .01). The dummy variable of public/private predicts the percent of distance programs, measured at the 0.01 level of significance (B = -20.945, p ≤ .01); private institutions (vs. public) increase the percentage of distance programs. The dummy variable of for-profit/non-profit predicts the percent of distance programs, measured at the 0.01 level of significance (B = -10.400,

$p \leq .01$); the for-profit (vs. non-profit) institutions increase the percent of distance programs. Other independent variables such as the percentage of Black students, the percentage of Hispanic students, and the ratio of students to faculty do not turn out to be significant predictors of the percent of distance programs. Model 4 explains 43.2% of the variance in the percent of distance programs.

In terms of the discussions of the findings for the first stage of analysis the variables of the percent of students receiving financial aid, the percentage of students aged 25-64 years, and the percent of Asian students are significant across all four models; the variable of the percent of Hispanic students is significant in model 1 and model 3; and the variables of the percentage of students receiving Pell grants, total enrollment, the category of public vs. private, and the category of for-profit vs. non-profit are only significant in the final model. In conclusion those variables (the percent of students receiving financial aid, the percentage of students aged 25-64 years, the percent of Asian students, the percent of Hispanic students, the percentage of students receiving Pell grants, total enrollment, public vs. private, and for-profit vs. non-profit) are the predictors of institutional commitment to distance education among all 4-year colleges and universities and community colleges in California.

Analyses of Outliers

This section describes the results of correlations and regressions for stage 2 and for stage 3 of this study. As previously discussed, the first stage of analysis includes all 4-year colleges and universities and community colleges in CA (281 schools including nine schools missing the data of the percent of distance programs, see the Appendix). Table 3 shows the result of the correlation analysis of commitment to distance education for stage

1, and Table 4 summarizes the results of the OLS regression analysis (data provided by 255 schools) for stage 1.

The second stage of analysis includes 115 education institutions excluding 0% distance education institutions (150 schools) and 100% distance education institutions (7 schools). Table 5 summarizes the result of the correlation analysis of commitment to distance education for stage 2, and Table 6 shows the result of the OLS regression analysis (data provided by 108 schools) for stage 2.

The third stage of analysis includes 253 institutions of higher education excluding institutions of higher education with less than 400 students (27 schools) and one institution missing data in total enrollment. Table 7 presents the result of the correlation analysis for stage 3, and Table 8 shows the result of the OLS regression analysis (data provided by 234 schools) for stage 3.

Table 5 shows the results of the correlation analysis for stage 2 (excluding 0% and 100% distance education institutions). The correlation coefficients (Pearson's r) appear in each cell in Table 5. The percent of students receiving any financial aid reveals a statistically significant correlation with the percent of distance programs. The test results also illustrate a correlation that is negative in nature. This means as the percent of students receiving any financial aid increases, the percent of distance programs decreases. Percent of Pell grants students shows statistically significant positive correlations with all dependent variables. This means as the percent of Pell grants students increases, the percent of students enrolled exclusively in distance programs, the percent of undergraduate enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance programs

Table 5. Correlation Analysis of Commitment to Distance Education in CA (Excluding 0% and 100% Distance Education Institutions)

Independent Variables	Percent of students enrolled exclusively in distance programs	Percent of undergraduate students enrolled exclusively in distance programs	Percent of graduate students enrolled exclusively in distance programs	Percent of distance programs
Percent of students receiving any financial aid	.092	.085	-.081	.160*
Percent of Pell grants students	.288***	.325***	.302**	.301***
Percent of students aged 25-64 yrs	.553***	.640***	.309**	.615***
Percent of Asian students	-.129	-.088	-.215	-.080
Percent of Black students	.251***	.264***	.179	.215**
Percent of Hispanic students	-.225**	-.165*	-.250*	-.332***
Percent of White students	.029	-.038	.088	.026
Percent of students admitted	.437***	.369**	.518***	.502***
Total enrollment	-.303***	-.291***	-.210	-.396***
Average salary equated to 9 months of full-time instructional staff	-.230	-.168	-.238	-.210
SAT score	-.250	-.330*	-.169	-.255
Percent of students submitting an SAT score	-.359**	-.289	-.431**	-.439**

| Ratio of students/faculty | -.124 | -.061 | -.279** | -.437*** |

also increase.

Percent of undergraduate students aged 25-64 years shows statistically significant positive correlations with all dependent variables. This means as the percent of undergraduate students aged 25-64 years increases, the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs also increase.

The percentage of Asian students does not show any significant relationship with any of the dependent variables. None of the dependent variables have any significant relationship with the percentage of White students. The percentage of Black students shows statistically significant positive correlations with three dependent variables. This means as the percentage of Black students increases, the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, and the percent of distance programs also increase. The percentage of Hispanic students shows statistically significant correlations with all dependent variables. The test results also illustrate correlations that are negative in nature. This means as the percentage of Hispanic students increases, the percent of students enrolled exclusively in distance programs, the percent of undergraduate students exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs decrease.

Percent of students admitted shows statistically significant positive correlations

with all dependent variables. This means as the percent of students admitted increases, the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs also increase. Total enrollment shows statistically significant correlations with three dependent variables. The test results also illustrate correlations that are negative in nature. This means as the total enrollment increases, the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, and the percent of distance programs decrease. The average salary equated to 9 months of full-time instructional staff reveals no significant relationship with any of the dependent variables. The SAT score shows no significant relationship with any of the dependent variables.

The percent of students submitting an SAT score presents statistically significant correlations with three dependent variables. The test results also explain correlations that are negative in nature. This means as the percent of students submitting an SAT score increases, the percent of students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs decrease. The ratio of students to faculty shows statistically significant correlations with two dependent variables. The test results also illustrate correlations that are negative in nature. This means as the ratio of students to faculty increases, the percent of graduate students enrolled exclusively in the distance programs and the percent of distance programs decrease.

Table 6 summarizes the results of the OLS regression analysis of stage 2

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Table 6. OLS Regression Analysis of Commitment to Distance Education in CA (Excluding 0% and 100% Distance Education Institutions)

Independent Variables	Model 1: Percent of students enrolled exclusively in distance programs	Model 2: Percent of undergraduate students enrolled exclusively in distance programs	Model 3: Percent of graduate students enrolled exclusively in distance programs	Model 4: Percent of distance programs
Percent of students receiving any financial aid	-.155 (.132)	-.043 (.123)	-.571* (.296)	-.580*** (.137)
Percent of students receiving Pell grants	.210* (.123)	.101 (.115)	.496** (.243)	.489*** (.127)
Percent of students aged 25-64 yrs	.416*** (.097)	.512*** (.090)	.170 (.205)	.403*** (.100)
Percent of Asian students	-.421** (.161)	-.324** (.151)	-.997*** (.360)	-.485*** (.168)
Percent of Black students	.097 (.250)	.057 (.234)	-.040 (.829)	.294 (.260)
Percent of Hispanic students	-.336*** (.108)	-.280*** (.101)	-.620** (.292)	-.255** (.112)
Total enrollment	-.00001 (.000)	-.00001 (.000)	.000 (.000)	.00007419 (.000)
Ratio of students/faculty	.364 (.259)	.426* (.242)	-.417 (.759)	.063 (.269)
Public/Private	-10.240* (5.265)	-6.474 (4.917)	-15.640 (13.660)	-31.426*** (5.465)
For-Profit/ Non-profit	-5.535 (5.146)	-1.255 (4.807)	-12.535 (8.542)	1.749 (5.342)
Constant	13.972 (11.027)	-.303 (10.300)	72.099*** (26.300)	50.301*** (11.447)

$*p \leq .10, **p \leq .05, ***p \leq .01$

F	9.407***	11.262***	3.783***	23.449***
r^2	.492	.537	.486	.707
N	108	108	51	108

(excluding 0% and 100% distance education institutions). Cell entries are unstandardized regression coefficients in Table 6. Standard errors are in parentheses. Model 1 for stage 2 summarizes the results of the OLS regression analysis of 10 independent variables with the dependent variable of the percent of students enrolled exclusively in the distance programs. The results show that the percent of students receiving Pell grants (B = .210, p ≤ .10), the percent of students aged 25-64 years (B = .416, p ≤ .01), the percentage of Asian students (B = -.421, p ≤ .05), the percentage of Hispanic students (B = -.336, p ≤ .01), and the dummy variable of public/private (B = -10.240, p ≤ .10) are the significant predictors of the percent of students enrolled exclusively in the distance programs. Other independent variables such as the percent of students receiving any type of financial aid, the percentage of Black students, total enrollment, the ratio of students to faculty, and the dummy variable of for-profit/non-profit do not turn out to be significant predictors of the percent of students enrolled exclusively in the distance programs. Model 1 for stage 2 explains 49.2% of the variance in the percent of students enrolled exclusively in the distance programs.

Model 2 shows the results of the OLS regression analysis of 10 independent variables with the dependent variable of the percent of undergraduate students enrolled exclusively in the distance programs. The results highlight that the percent of undergraduate students aged 25-64 years (B = .512, p ≤ .01), the percentage of Asian students (B = -.324, p ≤ .05), the percentage of Hispanic students (B = -.280, p ≤ .01), and the ratio of students to faculty ratio (B = .426, p ≤ .10) are the significant predictors of the percent of undergraduate students enrolled exclusively in the distance programs.

Other independent variables such as the percent of students receiving any type of financial aid, the percent of students receiving Pell grants, the percentage of Black students, total enrollment, the variable of public/private, and the variable of for-profit/non-profit do not turn out to be significant predictors of the percent of undergraduate students enrolled exclusively in the distance programs. Model 2 explains 53.7% of the variance in the percent of undergraduate students enrolled exclusively in the distance programs.

Model 3 presents the results of the OLS regression analysis of 10 independent variables with the dependent variable of the percent of graduate students enrolled exclusively in the distance programs. The results indicate that the percent of students receiving any type of financial aid (B = -.571, p ≤ .10), the percent of students receiving Pell grants (B = .496, p ≤ .05), the percentage of Asian students (B = -.997, p ≤ .01), and the percentage of Hispanic students (B = -.620, p ≤ .05) are significant predictors of the percent of graduate students enrolled exclusively in the distance programs. Other independent variables such as the percent of undergraduate students aged 25-64 years, the percentage of Black students, total enrollment, the ratio of students to faculty, the dummy variable of public/private, and the dummy variable of for-profit/non-profit do not turn out to be significant predictors of the percent of graduate students enrolled exclusively in the distance programs. Model 3 explains 48.6% of the variance in the percent of graduate students enrolled exclusively in the distance programs.

Model 4 shows the results of the OLS regression analysis of 10 independent variables with the dependent variable of the percent of distance programs. The results explain that the percent of undergraduate students aged 25-64 years (B = .403, p ≤ .01),

the percentage of Asian students (B = -.485, p ≤ .01), the percentage of Hispanic

students (B = -.255, p ≤ .05), the percent of students receiving any type of financial aid

(B = -.580, p ≤ .01), the percent of students receiving Pell grants (B = .489, p ≤ .01),

and the variable of public/private (B = -31.426, p ≤ .01) are the significant predictors of

the percent of distance programs. Other independent variables such as the percentage of

Black students, total enrollment, the ratio of students to faculty, and the dummy variable

of for-profit/non-profit do not turn out to be significant predictors of the percent of

distance programs. Model 4 explains 70.7% of the variance in the percent of distance

programs. In summary, the variables of financial aid, Pell grants, students aged 25-64

years, Asian students, Hispanic students, and public/private are significant for stage 2

(excluding 0% and 100% distance education institutions).

Table 7 explains the results of the correlation analysis for stage 3 (excluding

institutions of higher education with less than 400 students). The correlation coefficients

(Pearson's r) appear in each cell in Table 7. Percent of students receiving any financial

aid presents statistically significant negative correlations with three dependent variables.

This means as the percent of students receiving any financial aid increases, the percent of

students enrolled exclusively in the distance programs, the percent of undergraduate

students enrolled exclusively in the distance programs, and the percent of graduate

students enrolled exclusively in the distance programs decrease. Percent of Pell grants

students shows no significant relationship with any of the dependent variables.

Percent of undergraduate students aged 25-64 years shows statistically significant

positive correlations with all dependent variables. This means as the percentage of

nontraditional students increases, the percent of students enrolled exclusively in the

distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs also increase.

The percentage of Asian students indicates statistically significant correlations with all dependent variables. The test results also illustrate correlations that are negative in nature. This means as the percentage of Asian students increases, the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs decrease. The percentage of Black students shows statistically significant positive correlations with all dependent variables. This means as the percentage of Black students increases, the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs also increase. The percentage of Hispanic students points out a statistically significant correlation with the percent of distance programs. The test results also illustrate a correlation that is negative in nature. This means as the percentage of Hispanic students increases, the percent of distance programs decreases. None of the dependent variables has a statistically significant relationship with the percentage of White students.

Percent of students admitted shows statistically significant positive correlations with all dependent variables. This means as the percent of students admitted increases, the percent of students enrolled exclusively in the distance programs, the percent of

Table 7. Correlation Analysis of Commitment to Distance Education in CA
(Excluding Institutions of Higher Education with less than 400 Students)

Independent Variables	Percent of students enrolled exclusively in distance programs	Percent of undergraduate students enrolled exclusively in distance programs	Percent of graduate students enrolled exclusively in distance programs	Percent of distance programs
Percent of Students receiving any financial aid	-.134**	-.144**	-.184*	-.062
Percent of Pell grants students	.088	.104	.097	.063
Percent of students aged 25-64 yrs	.445***	.468***	.390***	.495***
Percent of Asian students	-.174***	-.160**	-.261***	-.170***
Percent of Black students	.218***	.221***	.248***	.185***
Percent of Hispanic students	-.066	-.058	-.099	-.149**
Percent of White students	.102	.081	.102	.082
Percent of students admitted	.270***	.225**	.281***	.307***
Total enrollment	-.087	-.094	-.065	-.162**
Average salary equated to 9 months of full-time instructional staff	-.037	-.020	-.028	-.071
SAT score	-.237**	-.266**	-.181	-.233**
Percent of students submitting an SAT score	-.106	-.079	-.128	-.078
Ratio of students/faculty	.062	.071	-.036	-.171***

$*p \leq .10, **p \leq .05, ***p \leq .01$

undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs also increase. Total enrollment reveals a statistically significant correlation with the percent of distance programs. The test results also illustrate a correlation that is negative in nature. This means as the total enrollment increases, the percent of distance programs decreases. The average salary equated to nine months of full-time instructional staff shows no significant relationship with any of the dependent variables.

The SAT score indicates statistically significant correlations with three dependent variables. The test results also explain correlations that are negative in nature. This means as the SAT score increases, the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, and the percent of distance programs decrease. The percent of students submitting an SAT score shows no significant relationship with any of the dependent variables.

The ratio of students to faculty presents a statistically significant correlation with the percent of distance programs. The test results also illustrate a correlation that is negative in nature. This means as the ratio of students to faculty increases, the percent of distance programs decreases.

Table 8 highlights the results of the OLS regression analysis for stage 3 (excluding institutions of higher education with less than 400 students). Cell entries are unstandardized regression coefficients in Table 8. Standard errors are in parentheses.

Model 1 for stage 3 presents the results of the OLS regression of 10 independent

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Table 8. OLS Regression Analysis of Commitment to Distance Education in CA (Excluding Institutions of Higher Education with less than 400 Students)

Independent Variables	Model 1: Percent of students enrolled exclusively in distance programs	Model 2: Percent of undergraduate students enrolled exclusively in distance programs	Model 3: Percent of graduate students enrolled exclusively in distance programs	Model 4: Percent of distance programs
Percent of students receiving any financial aid	-.027 (.084)	-.045 (.083)	-.006 (.150)	-.127 (.094)
Percent of students receiving Pell grants	-.104 (.086)	-.085 (.085)	-.176 (.170)	-.034 (.096)
Percent of students aged 25-64 yrs	.509*** (.066)	.503*** (.065)	.524*** (.141)	.535*** (.074)
Percent of Asian students	-.264*** (.098)	-.246** (.097)	-.548** (.225)	-.278** (.109)
Percent of Black students	.035 (.124)	.039 (.123)	-.093 (.319)	-.029 (.139)
Percent of Hispanic students	-.097 (.074)	-.099 (.074)	-.092 (.198)	.006 (.083)
Total enrollment	.000 (.000)	.000 (.000)	.001** (.000)	.0004*** (.000)
Ratio of students/faculty	-.062 (.167)	-.037 (.165)	-.152 (.422)	-.362* (.186)
Public/Private	-1.336 (3.391)	-.753 (3.359)	-.2.568 (7.952)	-11.672*** (3.780)
For-Profit/ Non-profit	-2.278 (3.483)	-2.133 (3.451)	5.980 (5.927)	.320 (3.884)
Constant	5.418 (6.393)	5.103 (6.333)	10.026 (12.084)	14.688** (7.128)

*p ≤ .10, **p ≤ .05, ***p ≤ .01

F	12.912***	13.401***	6.771***	14.866***
r^2	.367	.375	.427	.400
N	234	234	102	234

variables with the dependent variable of the percent of students enrolled exclusively in the distance programs. The results show that the percent of undergraduate students aged 25-64 years (B = .509, p ≤ .01) and the percentage of Asian students (B = -.264, p ≤ .01) are powerful predictors of the percent of students enrolled exclusively in the distance programs. Other independent variables such as the percent of students receiving any type of financial aid, the percent of students receiving Pell grants, the percentage of Black students, the percentage of Hispanic students, total enrollment, the ratio of students to faculty, the dummy variable of public/private, and the dummy variable of for-profit/non-profit do not turn out to be significant predictors of the percent of students enrolled exclusively in the distance programs. Model 1 accounts for 36.7% of the variance in the percent of students enrolled exclusively in the distance programs.

Model 2 describes the results of the OLS regression analysis of 10 independent variables with the dependent variable of the percent of undergraduate students enrolled exclusively in the distance programs. The results show that the percent of undergraduate students aged 25-64 years (B = .503, p ≤ .01) and the percentage of Asian students (B = -.246, p ≤ .05) are the significant predictors of the percent of undergraduate students enrolled exclusively in the distance programs. Other independent variables such as the percent of students receiving any type of financial aid, the percent of students receiving Pell grants, the percentage of Black students, the percentage of Hispanic students, total enrollment, the ratio of students to faculty, the dummy variable of public/private, and the dummy variable of for-profit/non-profit do not turn out to be significant predictors of the percent of undergraduate students enrolled exclusively in the distance programs. Model 2 explains 37.5% of the variance in the percent of undergraduate students enrolled

exclusively in the distance programs.

Model 3 shows the results of the OLS regression of 10 independent variables with the dependent variable of the percent of graduate students enrolled exclusively in the distance programs. The results indicate that the percent of undergraduate students aged 25-64 years (B = .524, p ≤ .01), the percentage of Asian students (B = -.548, p ≤ .05), and total enrollment (B = .001, p ≤ .05) are the statistically significant predictors of the percent of graduate students enrolled exclusively in the distance programs. Other independent variables such as the percent of students receiving any type of financial aid, the percent of students receiving Pell grants, the percentage of Black students, the percentage of Hispanic students, the ratio of students to faculty, the dummy variable of public/private, and the dummy variable of for-profit/non-profit do not turn out to be significant predictors of the percent of graduate students enrolled exclusively in the distance programs. Model 3 explains 42.7% of the variance in the percent of graduate students enrolled exclusively in the distance programs.

Model 4 presents the results of the OLS regression analysis of 10 independent variables with the dependent variable of the percent of distance programs. The results point out that the percent of undergraduate students aged 25-64 years (B = .535, p ≤ .01), the percentage of Asian students (B = -.278, p ≤ .05), total enrollment (B = .0004, p ≤ .01), the ratio of students to faculty (B = -.362, p ≤ .10), and the dummy variable of public/private (B = -11.672, p ≤ .01) are the significant predictors of the percent of distance programs. Other independent variables such as the percent of students receiving any type of financial aid, the percent of students receiving Pell grants, the percentage of Black students, the percentage of Hispanic students, and the variable of for-profit/non-

profit do not turn out to be significant predictors of the percent of distance programs.

Model 4 explains 40% of the variance in the percent of distance programs. In summary,

the variables of students aged 25-64 years, Asian students, total enrollment, ratio of

students to faculty, and public/private are significant for stage 3 (excluding institutions

of higher education with less than 400 students).

Evaluation of Hypotheses

 The hypotheses articulated to answer the research question are evaluated in this

section. Based on the findings and results of statistical tests done over this study those

hypotheses are assessed if each hypothesis can be accepted or rejected.

Hypothesis 1, Hypothesis 1a, Hypothesis 1b, and Hypothesis 1c

 H1: Colleges with the institutional sector type of private demonstrate a greater

 level of commitment to distance education than colleges with the institutional

 sector type of public.

 H1a: For-profit colleges have a greater commitment to distance learning than non-

 profit colleges.

 H1b: Community colleges have less of a commitment to distance learning than 4-

 year colleges.

 H1c: Religious colleges have a greater commitment to distance learning than

 secular colleges.

 The private institutions (11.46%) have a significantly higher percent of students

enrolled exclusively in the distance programs than the public institutions (7.61%) at the

0.10 level of significance, but the OLS regression analysis in Table 4 (Model 1) shows

that the variable of public/private is not a significant predictor of the percent of students

enrolled exclusively in distance programs. While the for-profit institutions (17.12%) exhibit a significantly higher percent of students enrolled exclusively in distance programs than non-profit institutions (8.08%) at the 0.10 level of significance, the OLS regression analysis in Table 4 (Model 1) indicates that the variable of for-profit/non-profit is not a significant predictor of the percent of students enrolled exclusively in distance programs. The results of the difference of means test reveal that between 4-year institutions and community colleges there is no significant difference in the percent of students enrolled exclusively in the distance programs. The results also show that there is no significant difference between religious institutions and secular institutions in the percent of students enrolled exclusively in the distance programs. Therefore, the variables of 4-year/community college and religious/secular do not have any significance in predicting the percent of students enrolled exclusively in the distance programs, and they do not predict the percent of students enrolled exclusively in the distance programs.

The public/private institutions display no relationship with the percent of undergraduate students enrolled exclusively in the distance programs in Table 4 (Model 2) for the OLS regression analysis. While the for-profit institutions (17.50%) show a significantly higher percent of undergraduate students enrolled exclusively in the distance programs than the non-profit institutions (7.68%) at the 0.10 level of significance, the OLS regression analysis in Table 4 (Model 2) shows that the variable of for-profit/non-profit is not a significant predictor of the percent of undergraduate students enrolled exclusively in the distance programs. The categorical variables of 4-year/community college and religious/secular do not have any significance in predicting the percent of undergraduate students enrolled exclusively in the distance programs, and they do not

predict the percent of undergraduate students enrolled exclusively in the distance programs.

Regarding the percent of graduate students enrolled exclusively in the distance programs the private institutions reveal a significantly higher percent of graduate students enrolled exclusively in the distance programs than the public institutions at the 0.01 level of significance. However, the OLS analysis in Table 4 (Model 3) shows that the variable of public/private is not a significant predictor of the percent of graduate students enrolled exclusively in the distance programs. The for-profit institutions report a significantly higher percent of graduate students enrolled exclusively in the distance programs than the non-profit institutions at the 0.05 level of significance. However, the OLS regression analysis in Table 4 (Model 3) shows that the variable of for-profit/non-profit is not a significant predictor of the percent of graduate students enrolled exclusively in the distance programs. The other categorical variables, 4-year vs. community college and religious vs. secular, do not have any significance in predicting the percent of graduate students enrolled exclusively in the distance programs, and do not serve as a predictor of the percent of graduate students enrolled exclusively in the distance programs.

In regards to the percent of distance programs the private institutions show a significantly higher percent of distance programs than the public institutions at the 0.01 level of significance. The OLS regression analysis in stage 1 (Model 4 in Table 4) reveals that the variable of public/private is a statistically significant predictor of the percent of distance programs. Also, the OLS regression analysis in stage 2 (Model 1 and Model 4 in Table 6) presents that the variable of public vs. private is statistically significant in predicting the percent of students enrolled exclusively in distance programs and the

percent of distance programs. Furthermore, the OLS regression analysis in stage 3 (Model 4 in Table 8) indicates that the variable of public vs. private is statistically significant in predicting the percent of distance programs.

Therefore, Hypothesis 1 (H1) is accepted, based on the analyses across all three stages, and it is concluded that the variable of public vs. private serves as a statistically significant predictor just for the percent of distance programs representing institutional commitment to distance education.

The for-profit institutions (23.06%) present a significantly higher percent of distance programs than the non-profit institutions (7.87%) at the significance level of 0.05. The OLS regression analysis in stage 1 (Model 4 in Table 4) shows that the variable of for-profit vs. non-profit is a significant predictor of the percent of distance programs, while the variable of for-profit vs. non-profit is not a significant predictor of the dependent variables in stage 2 and stage 3 of this study.

Therefore, there is mixed evidence to support the Hypothesis 1a (H1a) between for-profit schools and non-profit schools given there are differences evident in Table 2 from the difference of means test, and the variable of for-profit vs. non-profit exhibits a significant relationship in Table 4 (Model 4) when this study examines all cases, while the analyses from Tables 6 and 8 show this relationship is being driven by smaller institutions and those that are 0% or 100% online schools.

The findings show significant differences between community colleges and 4-year colleges in Table 2 in relation to the percentage of distance programs but not for the other dependent variables. The 4-year institutions (14.56%) display a significantly higher percent of distance programs than the community college institutions (3.39%) at the 0.01

level of significance. This relationship holds in a multivariate model but all the dummy variables could not be included in the final models. In other words, there is mixed evidence to support the Hypothesis 1b (H1b) so that the variable for community colleges vs. 4-year colleges can be a statistically significant predictor of the percentage of distance education programs.

This study discovers there are significant differences between religious colleges and secular colleges in Table 2 from the difference of means test in regards to the percentage of distance programs but not for the other dependent variables. The religious institutions (21.97%) show a significantly higher percent of distance programs than the secular institutions (7.85%) at the 0.01 level of significance. That is, the variable of religious colleges vs. secular colleges is a statistically significant predictor of just the percentage of distance education programs. However, the variable of religious colleges vs. secular colleges is not included in the final models because of instability in the models when all dummy variables are included. There is mixed evidence to support accepting Hypothesis 1c (H1c). It is concluded that the variable of religious colleges vs. secular colleges serves as a significant predictor of institutional commitment to distance education.

Hypothesis 2

H2: As the percent of full-time, first-time enrolled undergraduate students classified as "nontraditional" (aged 25-64 years) increases at the institutions observed, the commitment levels to distance education rises.

This hypothesis investigates whether there are statistically significant relationships between the "nontraditional" classification of undergraduate students within

the enrollment population (non-traditional: ages 25-64 years) and the percent of students

enrolled exclusively in distance programs, the percent of undergraduate students enrolled

exclusively in the distance programs, the percent of graduate students enrolled

exclusively in the distance programs, and the percent of distance education programs

offered at the colleges (representing the commitment levels to distance education in this

study), and if so, whether these commitment levels increase or decrease when there are

greater percentages of nontraditional students at these colleges.

Statistically significant relationships are found between the variable of the percent

of nontraditional students (aged 25-64 years) the colleges have and the variables of the

percent of students enrolled exclusively in distance programs, the percent of

undergraduate students enrolled exclusively in the distance programs, the percent of

graduate students enrolled exclusively in the distance programs, and the percent of

distance education programs offered. The results of the statistical analyses in Table 3

indicate that the percent of undergraduate students aged 25-64 years shows statistically

significant positive correlations with all dependent variables, measured at the 0.01 level

of significance. This means as the percent of undergraduate students aged 25-64 years

increases, the percent of students enrolled exclusively in distance programs, the percent

of undergraduate students enrolled exclusively in the distance programs, the percent of

graduate students enrolled exclusively in the distance programs, and the percent of

distance programs also increase.

The results of the OLS regression analysis in Table 4 show that the percent of

undergraduate students aged 25-64 years is a very powerful predictor of all four

dependent variables - the percent of students enrolled exclusively in distance programs

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when measured at the 0.01 level of significance, the percent of undergraduate students enrolled exclusively in the distance programs at the 0.01 level of significance, the percent of graduate students enrolled exclusively in the distance programs at the 0.05 level of significance, and the percent of distance programs at the 0.01 level of significance. Also, the percent of undergraduate students aged 25-64 years is a powerful predictor across all three stages of the analysis.

Therefore, Hypothesis 2 (H2) is accepted and it is concluded that there is a statistically significant positive relationship between the percent of nontraditional undergraduate students aged 25-64 years and the institutional commitment to distance education. This indicates that institutions with higher percentages of students who are nontraditional and older in age when compared to traditional university students (with the traditional age bracket being denoted as between the ages 18-24 by the IPEDS) have higher levels of institutional commitment to distance education.

Hypothesis 3

H3: As the ratio of students to faculty increases at the institutions observed, the levels of commitment to distance education decreases.

This hypothesis investigates whether there is a statistically significant relationship between the ratios of students to faculty at the colleges assessed in this study and the commitment levels to distance education (measured by the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs offered at the institutions), and if so, whether these commitment levels decrease (or alternatively,

increase) when ratios of students to faculty at the colleges decrease.

The ratio of students to faculty reveals statistically significant correlations with both the percent of graduate students enrolled exclusively in the distance programs when measured at the 0.10 level of significance and the percent of distance programs when measured at the 0.01 level of significance. There are also negative correlations found from these tests. This means that as the ratio of students to faculty increases, the percent of graduate students enrolled exclusively in the distance programs and the percent of distance programs decrease. However, the OLS regression analysis results in Table 4 indicate that the ratio of students to faculty is not a significant predictor of any of the dependent variables. It is found that ratios of students to faculty at the colleges do not significantly predict the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance education programs offered when measured at the 0.05 level of significance in the OLS regression. Therefore, Hypothesis 3 (H3) is rejected and it is concluded that there is not a statistically significant relationship between the ratio of students to faculty at the colleges and institutional commitment to distance education.

Hypothesis 4

H4: As the percent of full-time, first-time enrolled undergraduate students receiving any financial aid increases at the institutions observed, the levels of commitment to distance education decreases.

This hypothesis investigates whether there is a statistically significant relationship between the percent of students receiving financial aid and the commitment levels of

distance education (represented by the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance education programs offered at the schools), as well as whether these commitment levels rise or fall when the percent of students receiving financial aid at the colleges observed rise.

Statistically significant correlations are found between the percent of students receiving any financial aid and the percent of students enrolled exclusively in distance programs at the 0.05 level of significance, the percent of undergraduate students enrolled exclusively in the distance programs at the 0.01 level of significance, and the percent of graduate students enrolled exclusively in the distance programs at the 0.05 level of significance. There are also negative correlations found from these tests. The OLS regression analysis results in Table 4 show that the percent of full-time, first-time enrolled undergraduates receiving any financial aid significantly predicts the percent of students enrolled exclusively in distance programs when measured at the 0.05 level of significance, the percent of undergraduate students enrolled exclusively in the distance programs at the 0.05 level of significance, the percent of graduate students enrolled exclusively in the distance programs at the 0.05 level of significance, and the percent of distance education programs offered at the 0.01 level of significance in the analyses of stage 1 for all the colleges and universities in CA. However, this original relationship vanishes when this study excludes small enrollment (less than 400 students) institutions, although it remains in Table 6, Model 4 when excluding 0% and 100% distance education institutions.

Consequently, there is a statistically significant relationship between the percent of full-time first-time enrolled undergraduate students receiving any financial aid and institutional commitment to distance education in all four models in Table 4, and the relationship is still there for the financial aid variables for Models 3 and 4 in Table 6. On the other hand, it is basically driven by institutions with really small enrollments below 400 students. In other words, there is a mixed bag of support for this hypothesis because this variable does not reach statistical significance when this study excludes the smaller institutions. This means that higher or lower percentages of students receiving financial predict significantly lower or higher levels of distance education commitment when small institutions with an enrollment below 400 students are not excluded.

In relation to the percent of Pell grants students it presents statistically significant positive correlations with three dependent variables at the 0.10 level of significance. This means as the percent of students receiving Pell grants increases, the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, and the percent of distance programs increase. Also, the OLS regression results in the final model of Table 4 show that the percent of students receiving Pell grants is a powerful predictor of the percent of distance programs at the 0.05 level of significance. That is, the percent of undergraduate students receiving Pell grants serves as a significant predictor of institutional commitment to distance education in all the colleges and universities in CA. However, this relationship vanishes when small enrollment (less than 400 students) institutions are excluded. But it maintains statistical significance when this study excludes 0% and 100% distance education institutions as reported in Table 6. That is, the percent of students receiving Pell grants

provides mixed evidence. Also, in the OLS models the percent of undergraduate students receiving Pell grants has a positive relationship to the commitment to distance education, but the direction of the relationship is opposite of Hypothesis 4.

Therefore, Hypothesis 4 (H4) is partially accepted since the percent of full-time, first-time enrolled undergraduates receiving any financial aid is statistically significant in all four models in Table 4, although the findings for the percent of undergraduate students receiving Pell grants are opposite of Hypothesis 4 and the relationship between percentage of students receiving financial aid and distance education is basically driven by small institutions (less than 400 students enrolled).

Hypothesis 5

H5: As the total enrollment of students increases at the institutions observed, the levels of commitment to distance education decreases.

This hypothesis investigates whether there is a statistically significant relationship between the total enrollment of students at the institutions observed and the commitment levels to distance education they display (measured in this study by the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance education programs offered), as well as whether these commitment levels rise or fall when the total enrollment at these schools increase.

Statistically significant correlations are found between the levels of total enrollment at the colleges and the dependent variables of the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled

exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance education programs offered. The test results illustrate correlations that are negative in nature. In other words, the total enrollment indicates statistically significant correlations with the percent of students enrolled exclusively in distance programs at the 0.05 level of significance, the percent of undergraduate students enrolled exclusively in distance programs at the 0.05 level of significance, the percent of graduate students enrolled exclusively in distance programs at the 0.10 level of significance, and the percent of distance programs at the 0.01 level of significance. This means as the total enrollment increases, all dependent variables decrease. Also, the OLS regression results in Table 4 show that total enrollment predicts the percent of distance programs, measured at the 0.05 level of significance in the analysis for all the colleges and universities in CA. However, this original relationship vanishes when 0% or 100% online institutions are excluded, although Table 8, Model 4 shows a relationship when this study excludes small institutions.

Therefore, Hypothesis 5 (H5) is rejected because there is evidence of a relationship but it is the opposite direction of this hypothesis. Interestingly, the direction of the regression coefficients for this variable is opposite of what this study predicted and statistically significant in Table 4 (model 4) as well as the last two models of Table 8 after excluding smaller institutions. In other words, it is a significant predictor in some cases. As enrollment increases, there are cases where the commitment to distance education also increases.

Hypothesis 6

H6: As the average salaries of 9-month contracted, full-time instructional faculty

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members increase at the institutions observed, the levels of commitment to distance education decreases.

This hypothesis investigates whether there is a significant relationship between the average salary rates of faculty members and the levels of commitment to distance education the observed colleges show, represented in this study by the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance education programs offered at those schools, as well as whether these commitment levels rise when the average salary rates of faculty members increase. It is found that the average salary equated to 9 months of full-time instructional staff shows no significant correlation with any of the dependent variables. Also, this variable is not selected for the OLS regression analysis because data are missing for more than three-fourth of the institutions in the dataset (N = 68 out of 281 schools). Therefore, Hypothesis 6 (H6) is rejected. That is, the average salaries of 9-month contracted, full-time instructional faculty members do not contribute to distance education. In other words, the average salaries of 9-month contracted, full-time instructional faculty members do not serve as a statistically significant predictor of institutional commitment to distance education.

Hypothesis 7

H7: As the percentage of minority college population increases, the levels of commitment to distance education decreases.

This hypothesis investigates whether there are statistically significant relationships between the percent of minority students at the institutions observed and the

commitment levels to distance education they display (measured in this study by the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance education programs offered at these institutions), as well as whether these commitment levels increase when the percent of minority students decrease at the colleges.

The percentage of Asian students points out statistically significant correlations with three dependent variables in Table 3. The test results also illustrate correlations that are negative in nature. This means as the percentage of Asian students increases, the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, and the percent of graduate students enrolled exclusively in distance programs decrease. Also, the OLS regression results in Table 4 show that the percent of Asian students is a powerful predictor of the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance programs. Specifically, in all three stages the percentage of Asian students is a statistically significant predictor of all dependent variables. That is, the percent of Asian students serves as a powerful predictor of institutional commitment to distance education across all three stages of analysis.

While none of the dependent variables has a statistically significant relationship with the percentage of White students, the percentage of Black students shows

statistically significant positive correlations with all dependent variables. This means as the percentage of Black students increases, the percent of students enrolled exclusively in distance programs, the percent of undergraduate enrolled exclusively in distance programs, the percent of graduate enrolled exclusively in distance programs, and the percent of distance programs also increase. However, the OLS regression results in Table 4 show that the percent of Black students is not a significant predictor of any of the dependent variables. In other words, the percent of Black students does not serve as a significant predictor of institutional commitment to distance education.

The percentage of Hispanic students reveals statistically significant correlations with all dependent variables. The test results also illustrate correlations that are negative in nature. This means as the percentage of Hispanic students increases, the percent of students enrolled exclusively in the distance programs, the percent of undergraduate students enrolled exclusively in the distance programs, the percent of graduate students enrolled exclusively in the distance programs, and the percent of distance programs decrease. Also, the OLS regression results in Table 4 indicate that the percent of Hispanic students is a significant predictor of the percent of students enrolled exclusively in the distance programs and the percent of graduate students enrolled exclusively in the distance programs. In other words, the percent of Hispanic students serves as a significant predictor of institutional commitment to distance education, but this relationship vanishes when small enrollment institutions are excluded. Yet, it holds when this study excludes 0% and 100% institutions of higher education.

In conclusion, Hypothesis 7 (H7) is accepted since the percent of Asian students representing minority college population is a powerful predictor across all three stages of

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analysis, and it is highlighted that there is a statistically significant relationship between the dependent variables tested and this particular independent variable that is measured against the dependent variables. In other words, the percent of Asian students representing minority students serves as a statistically significant predictor of institutional commitment to distance education. This indicates that traditional institutions with higher percentages of Asian students may have lower levels of institutional commitment to distance education. In addition, there is mixed evidence to support that the percent of Hispanic students decreases commitment to distance education from the stage 1 and stage 2 analyses.

Finally, in terms of the comparisons among the results of three different stages of analysis the percentage of undergraduate students aged 25-64 years, the percentage of Asian students representing minority students, and the institutional category of public vs. private are commonly shown to be the most consistently powerful predictors of institutional commitment to distance education. Therefore, these institutional characteristic and independent variables can perhaps be seen as the most reliable predictors of institutional commitment to distance education out of (and in comparison to) all the other variables for 4-year colleges and universities and community colleges regardless of outliers in California.

Chapter V

DISCUSSION AND CONCLUSIONS

In this chapter of the study, discussions of the findings and conclusions, primarily based upon the previous chapter, are brought to light. Implications and interpretations of the findings, recommendations for future research, and conclusive summaries are also presented. In the previous chapter, the research question was answered, the hypotheses were responded to, and the significances and/or differences between variables were analyzed. The final discussions of these findings help serve to conclude the study and explore the routes of future research. The research in this study sought to, among other things, discover and analyze what institutional factors and aspects were related with and could potentially predict the commitment to distance education/online learning of all 4-year, baccalaureate level and above colleges and universities and community colleges in California observed in this study, as measured by the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance programs offered at the colleges. This study intends to assess the relationships between these four dependent variables and independent variables based off of the various institutional characteristics as well as demographics used throughout this study.

Findings in Regards to Research Questions and Goals

The following research question and goals are explored in this study:

What institutional characteristics predict the level of commitment to distance education among 4-year, baccalaureate level and above colleges and universities as well as community colleges in California?

It is of key interest for this study to look back at the findings and data results in order to determine if these research queries presented at the beginning of the study and held throughout the duration of the project are answered and if the goals mentioned are achieved. This study evaluated a series of hypotheses based on several of the institutional aspects and factors that are indicated as having research value by the literature, and are also denoted by the National Center for Education Statistics as being frequently derived and applicable to data testing when evaluating institutions of higher education as this research project does. The institutions of higher education observed in this study are the 4-year colleges and universities (degree-granting and baccalaureate level or above) and community colleges in the state of California.

Data on these independent variables (institutional aspects) and dependent variables (the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance programs offered) were collected from these institutions of higher education. Various data analyses and statistical testing were conducted for the variables, including conducting ordinary least squares (OLS) regression analyses, correlation tests, and difference of means tests, as well as calculating basic descriptive statistics such as means and standard deviations.

The hypotheses tested are a series of hypotheses postulating that certain

institutional characteristics impacted the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance programs offered at each school either positively or negatively in terms of size and prevalence. Some of these hypotheses were accepted while a few others were rejected (some variable relationships were found to be statistically significant while others were not), and some of those statistically significant relationships display positive correlations while others display negative correlations.

Out of the first stage of analyses for all the 4-year colleges and universities and community colleges, in Table 4 eight independent variables (the percentage of students receiving any type of financial aid, the percentage of students receiving Pell grants, the sizes of estimated total student enrollment, the percentage of Asian students, the percentage of Hispanic (Latino) students, the percentage of students who are non-traditional (aged 25-64 years), institutional sector of private vs. public, and institutional sector of for-profit vs. non-profit) were shown to possess statistically significant relationships with the dependent variables when measured at the significance levels of 0.01, 0.05, and/or 0.10. The institutional sector levels helped to predict the different levels of commitment the institutions have to distance education in that private institutions were more likely to have higher levels of commitment than public institutions. Also, for-profit colleges were found to have higher levels of commitment than non-profit colleges. The institutional sector of 4-year vs. community college, and institutional sector of religious vs. secular showed statistically significant differences among them just for the percent of distance programs offered, but these variables were

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not included for the OLS regression tests as explained in Chapter 4.

As discussed in Chapter 4, some of the relationships discovered in the first stage are driven by institutions that are fully online or institutions that offer no online coursework (the second stage of analysis) and/or by exceptionally small institutions (the third stage of analysis). The results of these three stages of analyses highlighted that the percent of undergraduate students aged 25-64 years, the institutional category of public vs. private, and the percent of Asian students representing minority students were the most significant predictors of institutional commitment to distance education.

Discussions, Implications, and Further Analyses

This study illustrates the diverse array of institutional factors and aspects that are related to and may help predict levels of commitment these traditional colleges have to distance education and online learning. The research project also helps illustrate the recommendation for postsecondary schools to focus on a wide array of factors when developing their institutional models in order to produce a positive outlook for their endeavors into distance education (or future endeavors, if the institutions still have yet to participate, as the datasets and data testing show, there are certainly still institutions active today that have no distance learning programs at all). The same is applicable to stakeholder groups that need to make different types of assessments when analyzing the institutional statistics of the variables evaluated in this study.

For instance, the results, findings, and conclusions of all the hypotheses in this study can be used to inform those interested in understanding what aspects of institutions may predict different levels of commitment that colleges have to distance education, although the degrees to which they do so may vary. Additionally, the material may

provide current institutions of higher education with ideas and potential areas to focus on for improving or raising their commitment levels to distance education.

Table 9 shows the outcomes of analyses for the tested hypotheses in this research study. It summarizes the results of all variables tested for all hypotheses to answer the research question of this study.

Institutional Sector Level

Between the institutional sector levels of the colleges and the dependent variable of the percent of distance learning programs offered, across all three stages of analysis, statistically significant relationships were found in that private colleges display higher percentages of distance education programs than public colleges. These results bring attention to the previously discussed idea that private schools are able to engage in distance education with more freedom and more flexibility. That is, private schools are able to focus on profit-building and directing their program offerings to matching what is 'on demand' in the current higher education market. They leave much of the academic "heavy lifting" to the public institutions, which face more oversight and are required to comply with more academic guidelines to match governmental educational standards. Furthermore, this is even more evident in how private colleges handle funding, as they also have less pressure in allocating funds and financially planning with more of their intentions in mind (Ansah et al., 2001; Pina, 2008; Howell et al., 2003). In turn, this presents a problem when distance education divisions require enough financial support, and private institutions are able to allocate their funding more freely than public institutions, which already face several major financial dilemmas and already need to comply with mandated funding requirements; this is notable in the field of higher

Table 9. Summary of Variables Tested for Hypotheses

Variables for Hypotheses and the Relationship to Distance Education	OLS Regression Results
Variable for Hypothesis 1 Private > Public	Statistically Significant Private > Public (H1 Accepted)
Variable for Hypothesis 1a For-profit > Non-profit	Statistically Significant For-profit > Non-profit (H1a Accepted)
Variable for Hypothesis 1b 4-year > Community	Statistically Significant 4-year > Community (H1b Accepted)
Variable for Hypothesis 1c Religious > Secular	Statistically Significant Religious > Secular (H1c Accepted)
Variable for Hypothesis 2 (undergraduate students aged 25-64 years) Positive relationship	Statistically Significant Positive relationship (H2 Accepted)
Variable for Hypothesis 3 (the ratio of students to faculty) Negative relationship	Statistically Insignificant (H3 Rejected)
Variable for Hypothesis 4 (students receiving any financial aid) Negative relationship	Statistically Significant Negative relationship but positive for PELL grants (H4 Partially Accepted)
Variable for Hypothesis 5 (total enrollment of students) Negative relationship	Statistically Significant Positive relationship (H5 Rejected)
Variable for Hypothesis 6 (the average salaries of faculty) Negative relationship	Statistically Insignificant (H6 Rejected)
Variable for Hypothesis 7 (minority college population) Negative relationship	Statistically Significant Negative relationship (H7 Accepted)

education where financial difficulties are already numerous, even when disregarding

distance education.

The findings indicate that when the institutional sector level is private, this may predict higher levels of commitment to distance education. Students seeking institutions with more distance learning commitment may be interested to note that there may be more distance education programs at schools that have a private structure. The other categorical variables such as for-profit/non-profit, 4-year/community college, and religious/secular also serve as significant predictors of commitment to distance education because there is mixed evidence to support these hypotheses. In Table 4 this study discovered that the for-profit institutions show a significantly higher percent of distance programs representing institutional commitment to distance education than the non-profit institutions. The findings in Table 2 revealed the 4-year institutions offer a significantly higher percent of distance programs than the community college institutions and the religious institutions provide a higher percent of distance programs than the secular institutions.

All religious institutions are also classified as 'private' in the state of California, which may also explain why religious colleges may have higher degrees of commitment to distance education than secular colleges (since private colleges were found to have higher levels of commitment than public schools). The dataset shows that 7.69% of the religious schools are 100% online while only 1.72% of the secular institutions are fully online. As discussed earlier, faith-based institutions have strongly contributed to the online education market.

Percent of Nontraditional Students

Interestingly, across all three stages of analysis statistically significant relationships were found between the variables of the percent of nontraditional students

(undergraduates aged 25-64 years) the colleges had and the percentage of students enrolled exclusively in distance programs, the percentage of undergraduate students enrolled exclusively in distance programs, the percentage of graduate students enrolled exclusively in distance programs, and the percent of distance programs they offered. There were also positive correlations found from these tests. This indicates that traditional institutions with higher percentages of students who are nontraditional and older in age when compared to traditional university students (with the traditional age bracket being denoted as between the ages 18-24 by the IPEDS) have higher levels of commitment to distance education. It is also interesting to note that this finding may be related to the idea that "non-traditional" learners are often classified as "older, working adults" who are under particular circumstances, which is why distance education programs and their unique usefulness for their situations are of such appeal to them (Barron, 2014). The number of nontraditional students in higher education is increasing rapidly, and this is even more true for the field of distance learning, where nontraditional students make up a large part of the student population.

As mentioned earlier in Chapter 2, nontraditional students often face the challenge to balance various obligations due to external priorities. With busy schedules and limited funds (along with better academic performance in distance courses than their traditional counterparts), nontraditional students are a great match for distance education programs, which may explain why institutions with higher numbers of this student group also offer more distance education programs and demonstrate greater commitment to distance learning (Burns, 2011; Skopek & Schuhmann, 2008; Wojciechowski et al., 2005). This information may be useful for non-traditional learners who are making enrollment

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decisions and considering going to a school that offers more different, non-traditional

options such as distance education learning for postsecondary learning. In terms of

student recruitment, institutions may find it of interest to give enough attention to

recruiting nontraditional students to join their student population as well, either in the

form of stronger recruitment tactics or making friendly policy or structural changes to

open their arms further to nontraditional students and make their campuses more

welcoming, accessible, and favorable to them. Administrators who are to make course

design decisions also find it to their benefit if they observe this trend and realize that

distance education learning would be a great option for their current students who are

classified nontraditional.

Ratio of Students to Faculty

Between the four dependent variables in this study and the ratio of students to

faculty at the colleges, statistically significant relationships were not found throughout

the regression analyses except for Model 2 (percent of undergraduate students enrolled

exclusively in distance programs) in Table 6 where there is a positive relationship,

although the relationship is negative in the final model (percent of distance programs) of

Table 8; the ratio of students to faculty at the colleges did not serve as a useful predictor

of institutional commitment to distance education. These results are interesting to note

because students who are seeking more distance learning opportunities may not

necessarily have to be worried if the colleges they are considering seemingly have less

faculty to support the student body. This may indicate that, even with the financial

concerns in higher education, levels of the percentage of students enrolled exclusively in

distance programs, the percentage of undergraduate students enrolled exclusively in

distance programs, the percentage of graduate students enrolled exclusively in distance

programs, and the percent of distance programs they offered may not necessarily be

significantly impacted by the amount of faculty members available to cater to the student

populations. Likewise, lower ratios of students to faculty (meaning more faculty

members available to support the student population) may not significantly affect the

percent of students enrolled exclusively in distance programs, the percent of

undergraduate students enrolled exclusively in distance programs, the percent of graduate

students enrolled exclusively in distance programs, and the percent of distance programs

they offered. One may expect that with less faculty members available to teach,

institutions may not be able to offer as many distance learning programs because there

may not be enough instructors to teach them, but this seems to not be the case at least in

this study of higher education institutions in California. From the review of the literature

and sources, the previous expectation resulted in Hypothesis 3, but statistical significance

was not found and the hypothesis was rejected.

As discussed previously in the review of literature, traditional institutions of

higher education seem to handle the structuring of their respective commitments to

distance learning in various different ways, particularly when it comes to instruction and

delivery of such distance education. Some schools opt to hire more instructors while

others tend to assign more teaching responsibilities (or incentivize additional online

teaching opportunities) in order to continue offering online programs to their students.

Various ways of providing enough instruction to the students, including hiring of for-

profit mass course production companies or making class sizes larger, helps resolve

concerns coming from large student enrollments that are more difficult to provide for

(Todd et al., 2015; Skopek & Schuhmann, 2008; Compora, 2003). This helps negate the preconceived expectations that some onlookers may have that traditional colleges with fewer distance learning programs are not able to maintain a commitment to distance education because they have higher ratios of students to faculty which may seem to present difficulties in finding instructors to teach all the additional courses; others may expect that schools with smaller ratios of students to faculty could have more distance education programs to offer because those campuses seem to have ample amounts of instructors to teach the additional courses offered at the colleges. These perceptions would be useful for students or faculty who are seeking to join institutions with higher levels of commitment to distance learning; they would not need to avoid colleges who have higher ratios of students to faculty just because they expect those institutions to have less involvement in distance learning. Perceptions that a high ratio of students to faculty will produce less distance learning programs appear to be unfounded in the case of CA. The economics of too many students for too few faculty does not appear to be a driving force of distance education.

Percent of Students Receiving Financial Aid

For the stage 1 analysis of all colleges in CA and the stage 2 analysis with the exclusion of outliers for 0% and 100% online institutions, statistically significant negative relationships were found between the percent of students receiving any financial aid and the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance programs offered at the colleges. In other words, higher percentages of students receiving financial

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significantly predicted lower levels of distance education commitment although the relationship is driven by exceptionally small institutions (less than 400 enrollments). In conclusion, Hypothesis 4 is partially accepted since there is mixed evidence to support this hypothesis for the negative relationship between the percent of students receiving any financial aid and distance education. The percent of students receiving any financial aid is statistically significant in all four models in Table 4 and in model 3 and 4 in Table 6, but it washes out in Table 8 with the relationship driven by smaller enrollment institutions. Also, this study discovers Pell Grants has a positive relationship to distance education. That is, schools with a high percentage of students on Pell Grants are making a greater commitment to distance learning.

While there are indeed serious financial concerns regarding the high costs in higher education, particularly when providing distance education, institutions who may provide financial support to their students may be significantly impacted in their abilities to offer distance education opportunities. These results are interesting because various stakeholders (including students, instructors, administrators, government agencies, etc.) may find it interesting the idea that they may have to be concerned about giving students financial support (which is crucial in the higher education sphere, as it is one of the main enablers of individuals being able to receive college educations) in relation to distance learning; for example, having to choose or making sacrifices between student scholarships and distance learning opportunities. In some instances, institutions that give much more in terms of scholarships or direct their aid from governmental levels to funding their students' tuitions/fees may have less to devote to developing their distance education. There are many types of funding and financial aid, and with public education,

these are distinct funds. Less financial aid does not always mean more funds available for online education with public schools, although this tradeoff may occur with private institutions.

Information like this may be useful for both students who are making enrollment decisions and institutional administrators who need to assess financial aid structure in their schools alike. Students who are looking for more ample funding in regards to student scholarships may have to be concerned that the colleges they would like to receive more funding from may have less distance learning programs to offer. Similarly, institutional administrators may also have to be wary that when they assign more of their funding to greater amounts of students' financial aid, they may be cutting away available resources for distance education on their campuses.

Total Enrollment

The results of stage 1 for all colleges and stage 3 with removing exceptionally small institutions (less than 400 enrollments) indicate that statistically significant relationships were found between total enrollment at the colleges and the dependent variables; the total enrollment served as a significant positive predictor of institutional commitment to distance education. But in regards to the previous discussion and literature, this finding may also bring attention to the idea that student enrollments have been and are (and most likely will continue) growing rapidly - colleges face the challenge of handling more students than they can accommodate, and this seems to be true for distance education as well, where the sheer amount of students enrolled balances out any increases the amount of distance education programs offered, and there are still many more students than the colleges can provide for even in terms of distance learning

opportunities. Furthermore, this could perhaps indicate that the implementation of more distance learning programs may result in increasing overall student enrollment even further, with the elimination of barriers like distance when students are choosing to enroll at these colleges. On another note, distance education also has an array of hidden costs and additional expenses, which may make it difficult for smaller colleges to offer more distance learning programs. As explained previously in Chapter 2, implementing distance learning programs may cost even more than traditional programs (Leeds & Cope, 2015; Skopek & Schuhmann, 2008; Ansah et al., 2011). However, those relationships are driven by institutions that are fully online or institutions that offer no online programs. Also, they are the opposite direction of what this study hypothesized. Therefore, Hypothesis 5 was rejected.

Average Salaries of Faculty Members

No statistically significant relationships were found between the average salaries of full-time instructional staff and the percent of students enrolled exclusively in distance programs, the percent of undergraduate students enrolled exclusively in distance programs, the percent of graduate students enrolled exclusively in distance programs, and the percent of distance programs offered at the colleges. Also, because of missing cases this variable is not tested in the regression analysis. From the bivariate analysis, the average salaries of 9-month contracted, full-time instructional faculty members do not serve as a statistically significant predictor of institutional commitment to distance education.

Percent of Minority College Population

The percentage of Asian (one example of a minority group) students showed

statistically significant negative relationships with the dependent variables across all three

stages of analysis. Traditional institutions with higher percentages of Asian students

might have lower levels of commitment to distance education. This indicates that the

percent of minority students can serve as a negative predictor of institutional commitment

to distance education. Potential causes for this result could be that minority families may

not be as familiar with current technology, and not as open-minded towards non-

traditional forms of education that have historically been embodied in the "American

Dream" (4-year degrees from on-campus, brick-and-mortar institutions). Furthermore,

minorities make up a large proportion of the low-income population in America - as a

result of this, there may be minority students and families who cannot afford (or have the

perception that they cannot afford) such new and up-to-date technology that are needed to

participate in distance education programs. Also, the results of this study revealed that the

percentage of Hispanic students showed statistically significant negative relationships

with the dependent variables in the first stage and second stage of analysis although those

relationships are driven by exceptionally small schools (less than 400 students). That is,

the percent of Hispanic students served as a significant predictor of institutional

commitment to distance education with mixed evidence to support this hypothesis.

These findings are important to note for administrators, institutions, and the

larger, umbrella organizations that oversee matters of change in higher education today.

The implication that the percent of minority students can be a strong predictor of

institutional commitment to distance education may give these stakeholders a chance to

consider the improvement or modification of such an admission requirement. As Saba

argues, "true" individualized learning is the future and strength in educational technology" (Howell et al., 2003).

In conclusion of the findings in this study, the results of the analyses across the three different stages show that the percent of undergraduate students aged 25-64 years, the percent of minority students, and the institutional sector of public vs. private are similar in that they all serve as powerful predictors of institutional commitment to distance education. Therefore, these particular institutional characteristics and independent variables can be determined to be the most reliable predictors of institutional commitment to distance education in comparison to the other variables for traditional, 4-year colleges and universities and community colleges, including institutions that are 0% and 100% distance education and higher education institutions with less than 400 students in the state of California.

Future Research

This research project contributes to providing a foundation for future research and study into the field of distance learning/online education in relation to higher education and the presence of this relatively new influence within a large and long-established framework. This study of institutional commitment to distance education and institutional factors may potentially be replicated with an even larger sample size drawing from the wealth of institutions available for study in the United States of America. Other research methodologies can be utilized as well, providing for an even more interesting look into the relationships that can be explored in other regions in the country.

Researchers may find it of great interest to test other institutional factors and aspects as independent variables against the dependent variables of institutional

commitment to distance education. Major databases and national (or even international) resources offer hundreds of variables available for data assessment. Unfortunately, some variables are not as complete yet as others or are not organized into optimal formats yet (in comparison to the datasets utilized for this study), but data collection in future years by organizations like the IPEDS are sure to improve and eventually complete these sets of data in full or even acquire datasets that have not been collected yet. Similarly, there are also institutional characteristics that have not even gone through data collection yet. Additional variables such as retention rates and graduation rates related to student satisfaction, which are the key metrics of success of colleges and universities that state legislatures and the public are focused upon, could be examined. In particular, future studies could observe how these factors are impacted by commitment to distance education and vice versa – for example, whether greater levels of commitment to distance education has the positive effect of increasing retention and degree completion rates at institutions of higher education.

Alternatively, researchers can attempt to collect data on their own for some of these variables already mentioned and apply the principles of this study to smaller or specific instances (i.e., a district or county, or a particular type of institution, such as all state/public universities or only community colleges in a certain region). While they may face potential limitations from collecting data nationally or internationally in the way organizations such as the IPEDS are able to do, they may still be able to gain a representative sample from narrowing down the identifying characteristics, even if the resulting group is smaller.

Furthermore, researchers may gain new knowledge by assessing the differences

between distance learning at the undergraduate level versus the graduate level. As Table 2 illustrates, the mean for the percent of graduate students enrolled exclusively in distance programs in public colleges is 2.56%, while the mean for such graduate students in private colleges is 14.47% - a notable difference. Program structure and demographics may vary across the different levels present in postsecondary education, so this potential research can discover revealing similarities and differences between the two. Alternatively, they may even assess the differences between distance learning at the lower-division level (which could include community college systems separately as well) versus taking upper-division courses or programs.

As discussed previously with the review of literature in Chapter 2, economics and market forces may certainly influence the commitment to distance education. The ever-rising demand for distance learning programs is in part attributed to distance education's role as a potential solution in response to decreasing resources and other pressing issues. Because of these factors like economic difficulties, recession consequences, and rapidly growing enrollments of college students, resources for the field of higher education (including those available for distance education) have been suffering. As Howell (2003, 10) describes, university costs are reported to be consistently rising; funding and financial matters are an issue of concern for all institutional stakeholders. This trend explains the related increase in profit-earning and market forces in the field of distance learning as well – private institutions in particular, having more flexibility in institutional design and strategy, are discussed by Bates (2007, 5-7) as "concentrate[ing] on those areas that are the most profitable." Consequently, for-profit private colleges take advantage of this and oftentimes treat the higher education sector as a business endeavor – in comparison,

public colleges are said to do more of the academic 'heavy lifting' and are also burdened by more of the higher costs associated with meeting assigned academic standards (Pina, 2008). Unsurprisingly, public colleges face several major financial dilemmas, which include "providing financial support for faculty and teaching units preparing courses for distance delivery" and "determining pricing strategies that must follow state-mandated guidelines while remaining cost-effective to university budgets, which are always under stress" (Ansah et al., 2011, 2). Future research may look to assess additional economic variables, such as the debt levels of institutions in relation to their distance education commitment, along with the revenue stream of institutions over time to see how that shapes commitment.

Different types of campus settings - or even types of distance education courses in terms of structure, content, presentation, and/or even social or political bias - in higher education may further present differences and findings of interest, as seen in this study with some institutions having significant differences in terms of religious affiliation (Christian seminaries) or focusing entirely on individual professional fields (i.e., art schools or vocational institutions). Analyzing distance learning through courses that focus primarily on theory versus courses that focus on hands-on application may open a new set of doors for researchers to explore formats of distance instruction today; this may also provide opportunities for scholars to better assess and understand what postsecondary education could achieve if stakeholders chose to innovatively experiment with offering courses or programs that have not yet been broached in the field of distance learning.

Other variations of the dependent variable and research questions utilized in this

research project may be of interest for researchers as well. Steps could be taken to assess factors that may, alternatively, predict higher levels of participation and/or commitment of students in regards to taking distance learning programs. Researching this might allow institutions and other stakeholders to understand more clearly how to encourage more participation of their students in distance learning programs, particularly with institutions just starting to implement distance programs within their systems or schools who are struggling to transition their traditional learners into taking courses offered through online modes of delivery.

Similarly, researchers may also be interested in assessing distance learning and online education settings or experiences across international institutions and regions. The United States is and has been a forerunner in the field of higher education, impacting other industrialized nations throughout history. What are some of these impacts, and how does American distance learning compare or relate with the presence of distance education in other countries? As distance learning has also begun to burgeon in other parts of the world as well, what aspects of American distance learning are advanced, and what aspects are still unexpectedly underdeveloped? Distance learning experiences in America may differ significantly from those in international regions, and it would be fascinating to research the different ways in which this is so.

It is evident that distance learning in higher education is a field impacted by various factors, including institutional characteristics and demographics – future investigation will continue to be enlightening as it reveals how the field develops throughout the years to come, showing which characteristics begin to have more (or less) of an impact on institutional commitment levels in distance education.

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APPENDIX:

Dataset for 4-year, Baccalaureate Level and Above Colleges and Universities as well as Community Colleges in California

Dataset

Institution	Number of TP	Number of DP	% of FA	% of Pell	Pub/Pri	Forpro / Nonpro	CC/4yr	Reli / Secular	% of 25-64 yrs	% of Asian	% of Black	% of Hispanic	% of White	% of sts exclu	% of undergrad	% of graduate	% of admitted	Total enrollment	Average salary	SAT score	% of submit SAT	St/faculty ratio	Ratio of DP/TP	% of DP
Abraham Lincoln University	.	.	.	.	0	1	0	0	84	11	18	5	41	100	100	100	.	144	.	.	.	1	.	.
Academy of Art University	78	64	60	31	0	1	0	0	40	7	6	8	25	35	34	36	.	16001	63558	.	.	16	0.82	82
Academy of Couture Art	4	0	33	33	0	1	0	0	24	0	33	19	24	0	0	.	72	21	.	.	.	5	0	0
Allan Hancock College	95	10	82	55	1	0	1	0	37	4	3	51	38	15	15	.	.	10885	.	.	.	25	0.11	11
Alliant International University -San Diego	51	6	88	76	0	0	0	0	16	6	6	20	40	6	9	6	49	4201	42219	.	.	13	0.12	12
American Jewish University	10	0	86	29	0	0	0	1	18	0	1	2	23	0	0	0	59	229	.	1007	.	3	0	0
American River College	171	7	75	55	1	0	1	0	50	10	11	20	47	10	10	.	.	29701	.	.	.	28	0.04	4
American University of Health Sciences	4	0	67	67	0	1	0	0	60	71	5	11	9	0	0	0	50	287	.	.	.	11	0	0
Antelope Valley College	101	1	84	69	1	0	1	0	38	3	22	44	24	3	3	.	.	14262	.	.	.	27	0.01	1
Antioch University -Los Angeles	9	0	.	.	0	0	0	0	33	5	13	21	50	0	0	0	.	986	77751	.	.	8	0	0
Antioch University -Santa Barbara	7	0	.	.	0	0	0	0	51	4	5	27	58	0	0	0	.	375	53235	.	.	11	0	0
Argosy University -Inland Empire	22	0	100	85	0	1	0	0	66	3	31	36	20	0	0	0	.	704	.	.	.	12	0	0
Argosy University -Los Angeles	21	0	100	89	0	1	0	0	65	4	45	32	13	0	0	0	.	620	.	.	.	17	0	0
Argosy University -Orange County	25	0	100	83	0	1	0	0	63	12	9	31	41	0	0	0	.	673	.	.	.	7	0	0
Argosy University -San Diego	17	0	100	75	0	1	0	0	74	5	28	25	37	0	0	0	.	487	.	.	.	15	0	0
Argosy University -San Francisco Bay Area	22	0	.	.	0	1	0	0	84	10	34	17	33	0	0	0	.	559	.	.	.	4	0	0
Art Center College of Design	14	0	71	38	0	0	0	0	30	32	1	10	22	0	0	0	82	1985	.	.	.	9	0	0
Azusa Pacific University	71	11	95	25	0	0	0	1	15	9	6	22	46	9	4	16	80	10755	.	1099	86	14	0.15	15
Bakersfield College	108	0	80	59	1	0	1	0	33	4	5	62	25	5	5	.	.	17770	.	.	.	31	0	0
Barstow Communit	28	8	82	67	1	0	1	0	51	3	16	38	36	40	40	.	.	3211	.	.	.	29	0.29	29

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y College																								
Berkeley City College	50	0	58	39	1	0	1	0	39	15	18	24	26	11	11	.	.	6471	.	.	.	26	0	0
Bethesda University	15	6	58	53	0	0	0	1	47	21	2	18	2	20	13	40	83	353	.	.	.	6	0.4	40
Biola University	86	2	94	26	0	0	0	1	4	19	3	14	52	2	0	5	73	6301	46818	1112	85	17	0.02	2
Brandman University	46	37	70	40	0	0	0	0	79	5	10	23	49	45	48	42	100	7746	.	.	.	14	0.8	80
Brooks Institute	7	0	45	21	0	1	0	0	29	1	1	6	14	0	0	0	98	518	56124	.	.	9	0	0
Bryan University	4	4	96	88	0	1	0	0	79	3	18	15	51	88	88	100	.	927	.	.	.	20	1	100
Butte College	124	0	76	59	1	0	1	0	33	6	3	17	64	3	3	.	.	12163	.	.	.	25	0	0
Cabrillo College	99	4	66	46	1	0	1	0	41	3	1	37	50	4	4	.	.	13666	.	.	.	25	0.04	4
California Baptist University	87	20	95	42	0	0	0	1	22	5	9	30	45	11	11	10	79	7144	.	967	82	18	0.23	23
California College of the Arts	30	1	79	32	0	0	0	0	17	15	4	13	34	1	0	3	82	1949	.	1061	.	9	0.03	3
California Institute of Integral Studies	18	2	.	.	0	0	0	0	70	5	5	10	62	14	0	15	.	1271	.	.	.	15	0.11	11
California Institute of Technology	90	0	69	8	0	0	0	0	1	26	1	7	35	0	0	0	11	2181	59472	1520	88	3	0	0
California Institute of the Arts	54	0	70	33	0	0	0	0	10	9	6	10	43	0	0	0	30	1489	56610	.	.	7	0	0
California InterContinental University	.	.	.	.	0	1	0	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
California Lutheran University	54	4	97	25	0	0	0	1	13	6	4	23	48	4	1	10	48	4282	.	1118	84	15	0.07	7
California Miramar University	5	5	0	0	0	1	0	0	23	5	5	1	13	91	100	89	.	317	.	.	.	16	1	100
California Polytechnic State University-San Luis Obispo	96	0	47	13	1	0	0	0	4	11	1	15	60	0	0	1	31	19703	105300	1228	88	21	0	0
California State Polytechnic University-Pomona	84	0	69	47	1	0	0	0	17	24	3	36	22	0	0	1	52	22501	.	1058	95	28	0	0
California State University-Bakersfield	52	0	86	68	1	0	0	0	20	6	6	47	21	2	2	3	66	8371	.	901	90	24	0	0
California State University-Channel Islands	28	0	71	48	1	0	0	0	20	5	2	41	38	0	0	3	64	5140	.	974	90	20	0	0
California State University-Chico	103	4	68	42	1	0	0	0	14	6	2	22	52	1	1	1	72	16356	101331	1017	90	24	0.04	4
California State University-Dominguez Hills	67	2	84	73	1	0	0	0	37	10	16	50	12	10	9	17	57	14670	.	833	80	23	0.03	3
California	78	7	76	58	1	0	0	0	33	23	10	23	20	0	0	0	69	1452	.	902	91	25	0.09	9

Institution	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24
State University -East Bay																		6						
California State University -Fresno	102	1	79	62	1	0	0	0	16	15	4	41	26	1	1	5	58	23060	77796	920	89	22	0.01	1
California State University -Fullerton	105	4	67	46	1	0	0	0	20	21	2	35	27	4	2	16	46	38325	.	1014	95	24	0.04	4
California State University -Long Beach	150	0	72	49	1	0	0	0	17	22	4	35	22	0	0	0	31	35586	111492	1021	95	22	0	0
California State University -Los Angeles	123	0	83	73	1	0	0	0	26	16	5	56	10	0	0	0	68	23258	158184	870	95	24	0	0
California State University -Monterey Bay	30	2	77	53	1	0	0	0	16	5	6	39	34	1	0	10	44	5732	106983	977	93	22	0.07	7
California State University -Northridge	125	0	75	60	1	0	0	0	19	11	6	38	27	1	1	1	46	38310	135234	922	91	24	0	0
California State University -Sacramento	93	0	79	59	1	0	0	0	25	20	6	25	33	1	1	3	70	28811	108486	946	92	26	0	0
California State University -San Bernardino	72	2	86	71	1	0	0	0	21	6	7	52	19	1	1	8	58	18398	.	904	95	27	0.03	3
California State University -San Marcos	41	0	73	47	1	0	0	0	19	9	3	36	36	0	0	0	63	11300	.	966	96	24	0	0
California State University -Stanislaus	51	0	83	60	1	0	0	0	20	11	3	44	29	1	1	0	72	8917	.	915	86	21	0	0
California University of Management and Sciences	16	0	31	31	0	0	0	0	69	3	1	0	3	0	0	0	.	405	.	.	.	12	0	0
Canada College	62	0	63	32	1	0	1	0	49	11	3	49	28	5	5	.	.	6620	.	.	.	25	0	0
Cerritos College	129	0	72	49	1	0	1	0	33	9	8	65	9	7	7	.	.	21404	.	.	.	28	0	0
Cerro Coso Community College	48	3	67	43	1	0	1	0	53	3	5	33	50	52	52	.	.	4523	.	.	.	25	0.06	6
Chabot College	84	0	71	47	1	0	1	0	39	23	13	35	18	11	11	.	.	13142	.	.	.	28	0	0
Chaffey College	133	0	78	60	1	0	1	0	30	6	9	59	19	3	3	.	.	19211	.	.	.	27	0	0
Chapman University	87	0	89	18	0	0	0	1	3	11	2	14	57	0	0	0	45	7892	.	1216	78	14	0	0
Charles R Drew University of Medicine and Science	8	0	100	75	0	0	0	0	69	20	31	13	5	0	0	0	89	515	.	.	66	7	0	0
Citrus	66	4	68	50	1	0	1	0	25	8	5	59	20	6	6	.	.	1292	.	.	.	33	0.06	6

College																									
College																	0								
City College of San Francisco	162	1	55	42	1	0	1	0	52	34	8	22	23	4	4	.	.	26706	.	.	.	.	22	0.01	1
Claremont McKenna College	59	0	49	16	0	0	0	0	0	11	4	11	44	0	0	0	12	1328	.	.	1394	58	9	0	0
Coastline Community College	52	20	79	59	1	0	1	0	68	25	11	24	31	70	70	.	.	10378	.	.	.	.	41	0.38	38
Cogswell College	6	1	100	41	0	1	0	0	21	12	3	14	43	0	0	0	78	472	.	.	.	.	10	0.17	17
College of Alameda	48	0	78	63	1	0	1	0	39	29	22	21	14	13	13	.	.	5799	.	.	.	.	24	0	0
College of Marin	70	0	54	34	1	0	1	0	50	7	7	22	52	3	3	.	.	6077	.	.	.	.	19	0	0
College of San Mateo	104	0	50	26	1	0	1	0	36	24	3	30	31	1	1	.	.	9377	.	.	.	.	26	0	0
College of the Canyons	82	0	61	40	1	0	1	0	33	8	5	43	38	6	6	.	.	18508	.	.	.	.	30	0	0
College of the Desert	81	1	78	61	1	0	1	0	33	3	4	66	21	2	2	.	.	9259	75609	.	.	.	29	0.01	1
College of the Redwoods	55	0	82	60	1	0	1	0	42	3	2	15	60	7	7	.	.	4938	.	.	.	.	17	0	0
College of the Sequoias	116	1	83	66	1	0	1	0	31	4	3	60	28	4	4	.	.	10720	.	.	.	.	30	0.01	1
College of the Siskiyous	46	3	81	56	1	0	1	0	50	3	5	12	57	19	19	.	.	2533	.	.	.	.	17	0.07	7
Columbia College	57	0	73	51	1	0	1	0	34	2	1	16	73	7	7	.	.	2626	.	.	.	.	19	0	0
Columbia College-Hollywood	2	0	80	59	0	0	0	0	21	6	18	18	47	0	0	.	55	314	.	.	.	.	11	0	0
Concordia University-Irvine	36	3	97	31	0	0	0	1	15	5	5	14	53	32	7	56	91	4046	.	.	1040	83	11	0.08	8
Contra Costa College	69	4	74	48	1	0	1	0	37	19	24	37	10	3	3	.	.	6865	.	.	.	.	26	0.06	6
Copper Mountain Community College	35	0	89	71	1	0	1	0	46	4	6	24	56	2	2	.	.	1783	.	.	.	.	15	0	0
Cosumnes River College	110	5	76	56	1	0	1	0	38	28	14	23	24	11	11	.	.	13949	.	.	.	.	30	0.05	5
Crafton Hills College	52	0	73	48	1	0	1	0	27	5	4	43	42	2	2	.	.	5697	44145	.	.	.	25	0	0
Cuesta College	86	1	53	23	1	0	1	0	30	3	1	28	60	7	7	.	.	9256	.	.	.	.	25	0.01	1
Cuyamaca College	76	0	73	51	1	0	1	0	39	6	6	31	47	14	14	.	.	8859	.	.	.	.	25	0	0
Cypress College	119	5	55	54	1	0	1	0	30	22	4	43	22	7	7	.	.	15881	.	.	.	.	26	0.04	4
De Anza College	111	0	50	32	1	0	1	0	30	35	3	25	23	6	6	.	.	23261	.	.	.	.	27	0	0
Design Institute of San Diego	1	0	68	53	0	1	0	0	42	6	4	13	67	0	0	.	.	181	.	.	.	.	12	0	0
DeVry University-California	35	17	95	81	0	1	0	0	64	14	12	31	24	40	41	38	84	9156	.	.	.	.	19	0.49	49
Diablo Valley College	133	37	33	21	1	0	1	0	32	15	6	22	40	7	7	.	.	20286	.	.	.	.	30	0.28	28
Dominican University of California	41	0	99	29	0	0	0	0	21	14	4	19	38	0	0	0	78	2147	.	.	1059	87	10	0	0
East Los Angeles College	89	0	70	52	1	0	1	0	51	10	5	63	8	2	2	.	.	36606	.	.	.	.	48	0	0

Institution																											
El Camino College-Compton Center	71	0	74	60	1	0	1	0	41	5	38	49	3	10	10	.		.	.	7693	.		.	.	29	0	0
El Camino Community College District	134	0	63	47	1	0	1	0	29	13	17	48	14	3	3	.		.	.	23996	.		.	.	28	0	0
Evergreen Valley College	34	0	77	56	1	0	1	0	35	39	3	39	8	4	4	.		.	.	9211	.		.	.	28	0	0
Expression College for Digital Arts	7	0	81	31	0	1	0	0	40	5	6	7	20	0	0	.		.	.	574	.		.	.	12	0	0
Feather River Community College District	46	0	73	32	1	0	1	0	43	5	13	20	51	3	3	.		.	.	1782	.		.	.	18	0	0
Folsom Lake College	48	8	51	33	1	0	1	0	37	9	3	15	63	8	8	.		.	.	8034	.		.	.	29	0.17	17
Foothill College	92	14	33	19	1	0	1	0	40	22	4	23	35	24	24	.		.	.	14814	.		.	.	24	0.15	15
Fresno City College	126	0	85	69	1	0	1	0	34	15	7	50	23	4	4	.		.	.	21344	.		.	.	26	0	0
Fresno Pacific University	129	6	99	44	0	0	0	1	45	4	5	37	42	8	5	16	78			3393	.	1023	98		13	0.05	5
Fullerton College	115	0	70	45	1	0	1	0	25	14	3	50	24	5	5	.		.	.	24301	.		.	.	29	0	0
Gavilan College	66	0	69	49	1	0	1	0	40	6	3	52	33	3	3	.		.	.	5834	.		.	.	22	0	0
Glendale Community College	108	0	66	51	1	0	1	0	36	10	3	30	48	3	3	.		.	.	15744	.		.	.	29	0	0
Golden Gate University-San Francisco	57	40	.	.	0	0	0	0	88	18	6	10	31	34	65	29	.			3227	86355	.	.		14	0.7	70
Golden West College	63	0	67	46	1	0	1	0	29	27	2	30	31	11	11	.		.	.	12717	.		.	.	34	0	0
Grace Mission University	2	2	36	36	0	0	0	1	91	75	0	0	0	22	21	26	.			136	.	.	.		25	1	100
Grossmont College	125	0	69	43	1	0	1	0	32	8	7	31	42	6	6	.		.	.	18618	.		.	.	29	0	0
Hartnell College	63	2	85	57	1	0	1	0	41	4	2	64	13	4	4	.		.	.	9439	.		.	.	34	0.03	3
Harvey Mudd College	23	0	76	12	0	0	0	0	0	22	1	9	47	0	0	.	18			807	54000	1500	89		8	0	0
Holy Names University	76	0	99	47	0	0	0	1	34	16	22	24	23	0	0	0	57			1343	.	920	97		10	0	0
Hope International University	30	16	99	55	0	0	0	1	44	5	8	16	45	43	48	32	47			1356	.	953	91		14	0.53	53
Horizon University	3	3	.	.	0	0	0	1	98	10	0	9	81	36	36	.		.	.	58	.		.	.	10	1	100
Humboldt State University	56	1	77	53	1	0	0	0	18	3	4	26	51	0	0	0	80			8293	.	1021	93		21	0.02	2
Humphreys College-Stockton and Modesto Campuses	21	14	84	56	0	0	0	0	69	8	15	41	29	0	0	0	.			990	52794	.	.		22	0.67	67
Imperial Valley College	90	4	87	76	1	0	1	0	30	1	0	91	2	1	1	.		.	.	7701	.		.	.	29	0.04	4
International	17	0	92	58	0	1	0	0	52	9	12	5	17	14	14	.		.	.	194	43668	.	.		9	0	0

Institution	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Academy of Design and Technology-Sacramento																								
Irvine Valley College	74	0	44	27	1	0	1	0	30	26	2	24	36	9	9	.	.	13362	.	.	.	31	0	0
John F. Kennedy University	21	7	.	.	0	0	0	0	82	10	11	6	54	3	6	2	.	1356	.	.	.	4	0.33	33
John Paul the Great Catholic University	7	4	100	32	0	0	0	1	22	5	2	17	52	29	24	41	88	263	60642	.	55	17	0.57	57
King's University	8	5	80	52	0	0	0	1	53	6	16	12	57	27	24	32	86	598	.	.	.	6	0.63	63
La Sierra University	57	0	99	59	0	0	0	1	11	14	8	38	17	1	0	6	47	2440	.	936	87	14	0	0
Laguna College of Art and Design	12	0	51	30	0	0	0	0	19	17	2	15	46	0	0	0	43	544	.	.	.	12	0	0
Lake Tahoe Community College	57	0	70	54	1	0	1	0	51	4	1	23	64	16	16	.	.	2426	.	.	.	18	0	0
Laney College	63	0	77	59	1	0	1	0	48	26	25	19	16	6	6	.	.	11362	.	.	.	22	0	0
Las Positas College	63	1	46	30	1	0	1	0	30	15	4	27	43	9	9	.	.	8631	.	.	.	28	0.02	2
Lassen Community College	40	2	68	49	1	0	1	0	61	4	19	22	40	35	35	.	.	2494	.	.	.	21	0.05	5
Life Pacific College	5	1	87	43	0	0	0	1	20	5	4	21	65	17	15	44	75	627	.	973	54	22	0.2	20
Lincoln University	8	0	58	58	0	0	0	0	65	5	2	1	10	0	0	0	.	492	.	.	.	36	0	0
Loma Linda University	157	19	.	.	0	0	0	1	50	24	7	17	38	5	5	4	.	4693	.	.	.	3	0.12	12
Long Beach City College	163	1	78	63	1	0	1	0	34	12	14	52	15	3	3	.	.	24020	.	.	.	30	0.01	1
Los Angeles City College	89	1	72	56	1	0	1	0	47	13	11	50	19	9	9	.	.	19635	.	.	.	37	0.01	1
Los Angeles County College of Nursing and Allied Health	2	0	.	.	1	0	1	0	79	30	4	38	25	0	0	.	.	185	80622	.	.	3	0	0
Los Angeles Harbor College	42	4	68	50	1	0	1	0	33	11	12	57	13	11	11	.	.	10098	.	.	.	35	0.1	10
Los Angeles Mission College	46	1	80	64	1	0	1	0	35	5	3	75	11	4	4	.	.	8990	.	.	.	33	0.02	2
Los Angeles Pierce College	83	0	75	60	1	0	1	0	31	11	6	46	29	1	1	.	.	20080	.	.	.	36	0	0
Los Angeles Southwest College	33	0	90	72	1	0	1	0	46	2	53	36	2	7	7	.	.	7864	.	.	.	28	0	0
Los Angeles Trade Technical	88	0	81	59	1	0	1	0	53	5	25	58	5	3	3	.	.	13879	.	.	.	33	0	0

College																								
Los Angeles Valley College	93	0	81	64	1	0	1	0	40	8	5	49	30	5	5	.	.	18762	.	.	.	39	0	0
Los Medanos College	62	1	65	45	1	0	1	0	32	10	16	36	28	3	3	.	.	8525	.	.	.	26	0.02	2
Loyola Marymount University	101	1	96	19	0	0	0	1	2	11	6	23	47	0	0	1	54	9661	73440	1205	79	11	0.01	1
Mendocino College	57	1	86	68	1	0	1	0	42	3	4	24	62	15	15	.	.	3729	.	.	.	16	0.02	2
Menlo College	7	0	96	30	0	0	0	0	9	7	6	21	36	0	0	.	37	745	.	1005	87	15	0	0
Merced College	108	1	86	73	1	0	1	0	29	10	4	55	24	3	3	.	.	10205	.	.	.	28	0.01	1
Merritt College	52	0	81	53	1	0	1	0	52	15	30	25	18	10	10	.	.	5887	.	.	.	21	0	0
Mills College	67	0	100	50	0	0	0	0	18	10	8	18	48	0	0	0	68	1595	59400	1152	86	10	0	0
MiraCosta College	133	0	49	29	1	0	1	0	37	7	4	32	47	15	15	.	.	14537	.	.	.	30	0	0
Mission College	72	0	60	39	1	0	1	0	51	44	4	24	18	12	12	.	.	9130	.	.	.	23	0	0
Modesto Junior College	117	7	79	59	1	0	1	0	33	6	3	42	38	9	9	.	.	17084	.	.	.	32	0.06	6
Monterey Institute of International Studies	15	0	.	.	0	0	0	0	86	6	1	8	45	0	0	0	.	731	.	.	.	1	0	0
Monterey Peninsula College	96	0	67	43	1	0	1	0	52	8	4	31	46	4	4	.	.	9519	.	.	.	26	0	0
Moorpark College	78	1	43	26	1	0	1	0	22	8	2	29	54	6	6	.	.	14206	.	.	.	34	0.01	1
Moreno Valley College	57	0	86	55	1	0	1	0	34	6	14	56	18	5	5	.	.	8420	.	.	.	28	0	0
Mount Saint Mary's University	66	5	100	58	0	0	0	1	26	15	8	53	14	2	2	1	74	3274	.	918	91	12	0.08	8
Mt San Antonio College	152	2	75	54	1	0	1	0	29	18	5	59	13	2	2	.	.	28481	.	.	.	26	0.01	1
Mt San Jacinto Community College District	82	5	80	60	1	0	1	0	35	6	8	43	35	9	9	.	.	14170	.	.	.	27	0.06	6
Mt Sierra College	8	2	98	81	0	1	0	0	39	9	4	47	19	6	6	.	.	538	.	.	.	22	0.25	25
Napa Valley College	59	0	70	43	1	0	1	0	32	14	8	38	32	6	6	.	.	6308	.	.	.	22	0	0
National University	211	127	58	42	0	0	0	0	76	9	11	24	43	64	59	70	.	18207	79461	.	.	22	0.6	60
Newschool of Architecture and Design	5	1	76	48	0	1	0	0	46	9	4	29	30	5	0	18	79	514	.	.	.	9	0.2	20
Norco College	60	0	74	42	1	0	1	0	29	8	7	54	25	7	7	.	.	9648	.	.	.	38	0	0
Northwestern Polytechnic University	10	0	.	.	0	0	0	0	27	14	0	0	1	0	0	0	.	988	37089	.	.	29	0	0
Notre Dame de Namur University	34	2	100	52	0	0	0	1	35	12	5	27	34	3	0	6	87	2030	71127	957	77	11	0.06	6
Occidental College	34	0	71	20	0	0	0	0	0	13	4	16	50	0	0	.	42	2055	56583	1312	80	10	0	0

College																							
Ohlone College	95	2	49	30	1	0	1	0	35	37	4	21	21	6	6	.	.	10310	.	.	.	27	0.02	2
Orange Coast College	157	0	56	38	1	0	1	0	29	21	2	32	34	3	3	.	.	21886	.	.	.	35	0	0
Otis College of Art and Design	11	0	83	40	0	0	0	0	16	31	4	13	23	0	0	0	46	1086	.	1036	60	5	0	0
Oxnard College	63	1	90	67	1	0	1	0	37	5	3	70	17	13	13	.	.	6939	.	.	.	34	0.02	2
Pacific College of Oriental Medicine-San Diego	5	2	84	68	0	1	0	0	77	15	4	12	59	0	0	0	.	510	.	.	.	15	0.4	40
Pacific Oaks College	9	8	.	.	0	0	0	0	89	4	13	44	28	29	36	24	.	1072	.	.	.	10	0.89	89
Pacific States University	6	0	.	.	0	0	0	0	62	7	0	0	1	0	0	0	.	173	.	.	.	12	0	0
Pacific Union College	51	0	100	46	0	0	0	1	15	18	8	27	27	0	0	0	51	1647	60210	1008	79	16	0	0
Palo Alto University	6	1	.	.	0	0	0	0	55	16	4	13	48	8	2	9	.	948	.	.	.	16	0.17	17
Palo Verde College	29	5	87	74	1	0	1	0	77	5	10	32	42	31	31	.	.	3253	.	.	.	36	0.17	17
Palomar College	179	8	61	37	1	0	1	0	34	7	3	37	44	6	6	.	.	24665	.	.	.	27	0.04	4
Pasadena City College	126	10	43	41	1	0	1	0	28	23	5	47	13	3	3	.	.	25268	.	.	.	26	0.08	8
Pepperdine University	90	1	84	20	0	0	0	1	9	11	7	12	43	1	0	2	37	7315	73971	1230	76	13	0.01	1
Pitzer College	76	0	43	12	0	0	0	0	5	6	5	15	49	0	0	.	15	1081	.	1280	.	12	0	0
Point Loma Nazarene University	74	0	90	24	0	0	0	1	2	6	3	20	62	0	0	1	67	3359	.	1159	86	14	0	0
Pomona College	48	0	65	19	0	0	0	0	0	12	6	15	44	0	0	.	14	1610	54954	1432	78	7	0	0
Porterville College	32	0	89	73	1	0	1	0	32	4	1	71	20	6	6	.	.	3810	.	.	.	29	0	0
Providence Christian College	7	0	100	47	0	0	0	1	9	6	3	5	79	0	0	.	53	66	.	.	.	10	0	0
Reedley College	66	0	74	51	1	0	1	0	26	7	3	56	29	6	6	.	.	13807	.	.	.	29	0	0
Rio Hondo College	74	7	81	64	1	0	1	0	33	8	2	76	7	9	9	.	.	16548	.	.	.	31	0.09	9
Riverside City College	106	0	75	53	1	0	1	0	29	6	9	55	22	8	8	.	.	18165	.	.	.	27	0	0
Sacramento City College	137	0	78	58	1	0	1	0	37	21	13	28	28	6	6	.	.	23509	.	.	.	28	0	0
Saddleback College	169	0	44	24	1	0	1	0	35	9	2	24	56	15	15	.	.	20871	.	.	.	28	0	0
Saint Mary's College of California	97	0	95	26	0	0	0	1	8	11	5	22	46	0	0	0	69	4257	.	1111	80	13	0	0
Saint Patrick's Seminary and University	.	.	.	.	0	0	0	1	67	34	0	11	25	0	0	0	.	92	31698	.	.	5	.	.
Samuel Merritt University	9	1	.	.	0	0	0	0	61	27	4	12	44	6	9	3	.	1542	.	.	.	9	0.11	11
San Bernardino Valley College	101	1	89	67	1	0	1	0	39	5	13	63	15	7	7	.	.	12329	28908	.	.	24	0.01	1
San Diego	16	4	10	37	0	0	0	1	41	2	15	15	38	28	29	0	49	914	.	921	76	17	0.25	25

Institution																								
Christian College			0																					
San Diego City College	115	2	91	75	1	0	1	0	45	9	12	46	24	14	14	.	.	16310	.	.	.	29	0.02	2
San Diego Mesa College	118	8	67	46	1	0	1	0	36	16	7	32	34	11	11	.	.	24251	.	.	.	33	0.07	7
San Diego Miramar College	76	1	64	44	1	0	1	0	48	22	6	23	39	19	19	.	.	11891	.	.	.	34	0.01	1
San Diego State University	171	2	60	33	1	0	0	0	16	13	4	28	38	0	0	0	31	31899	121986	1087	92	25	0.01	1
San Diego State University-Imperial Valley Campus	.	.	.	.	1	0	0	0	30	1	0	87	3	0	0	0	61	883	121986	.	86	16	.	.
San Francisco Art Institute	28	0	100	32	0	0	0	0	20	5	1	14	47	0	0	0	83	680	.	1026	44	11	0	0
San Francisco Conservatory of Music	23	0	100	27	0	0	0	0	7	6	2	3	37	0	0	0	40	399	92502	.	.	6	0	0
San Francisco State University	145	0	70	47	1	0	0	0	21	27	5	23	26	1	1	0	64	29905	123336	1006	93	22	0	0
San Joaquin Delta College	122	0	80	61	1	0	1	0	33	18	10	41	24	13	13	.	.	17629	.	.	.	37	0	0
San Jose City College	70	0	72	43	1	0	1	0	49	24	8	39	18	5	5	.	.	9446	.	.	.	25	0	0
San Jose State University	144	1	67	43	1	0	0	0	20	32	3	22	24	2	0	9	63	31278	160839	1002	94	22	0.01	1
Santa Ana College	129	0	78	48	1	0	1	0	58	8	2	48	26	3	3	.	.	31115	.	.	.	43	0	0
Santa Barbara City College	113	1	46	26	1	0	1	0	28	5	3	31	42	13	13	.	.	19331	.	.	.	47	0.01	1
Santa Clara University	93	0	75	13	0	0	0	1	2	16	2	14	42	0	0	0	51	8770	82557	1282	79	12	0	0
Santa Monica College	80	5	57	39	1	0	1	0	27	11	9	37	26	8	8	.	.	29999	.	.	.	30	0.06	6
Santa Rosa Junior College	185	3	69	33	1	0	1	0	39	5	3	29	55	5	5	.	.	22094	.	.	.	22	0.02	2
Santiago Canyon College	68	0	52	33	1	0	1	0	34	7	2	46	37	5	5	.	.	11796	.	.	.	40	0	0
Scripps College	51	0	61	8	0	0	0	0	1	17	3	8	50	0	0	0	36	1009	61209	1343	73	10	0	0
Shasta Bible College and Graduate School	11	5	88	63	0	0	0	1	37	2	6	9	74	30	22	86	100	53	.	.	.	5	0.45	45
Shasta College	85	0	75	60	1	0	1	0	38	3	2	13	72	16	16	.	.	8479	.	.	.	29	0	0
Sierra College	108	1	58	40	1	0	1	0	34	5	3	25	60	7	7	.	.	18374	.	.	.	27	0.01	1
Simpson University	35	3	100	56	0	0	0	1	29	7	3	12	64	7	5	18	55	1255	.	1006	85	11	0.09	9
Skyline College	63	0	62	40	1	0	1	0	35	37	4	29	20	1	1	.	.	10067	.	.	.	27	0	0
Sofia University	4	0	.	.	0	0	0	0	89	6	8	6	57	0	0	0	.	453	.	.	.	17	0	0

Institution																									
Soka University of America	2	0	100	25	0	0	0	0	2	19	5	8	20	0	0	.		43	412	.	1205	91	9	0	0
Solano Community College	90	6	64	40	1	0	1	0	38	13	16	25	33	8	8	.		.	9583	.	.	.	24	0.07	7
Sonoma State University	57	0	63	32	1	0	0	0	12	4	2	23	55	0	0	0		82	9120	.	1010	93	24	0	0
South Baylo University	4	0	.	.	0	0	0	0	90	47	2	2	12	0	0	0		.	647	.	.	.	16	0	0
Southern California Institute of Architecture	2	0	23	13	0	0	0	0	33	16	1	13	24	0	0	0		87	493	88902	1131	87	15	0	0
Southern California Seminary	7	6	100	100	0	0	0	1	84	11	14	13	52	31	29	33		.	189	.	.	.	12	0.86	86
Southwestern College	168	0	78	55	1	0	1	0	32	12	6	53	25	7	7	.		.	19591	.	.	.	27	0	0
Stanford University	249	5	68	15	0	0	0	0	4	15	4	10	38	0	0	0		6	18346	.	1465	86	11	0.02	2
SUM Bible College and Theological Seminary	5	5	100	73	0	0	0	1	46	1	22	25	43	86	85	100		.	367	.	.	.	12	1	100
Taft College	45	1	77	50	1	0	1	0	51	3	7	51	35	17	17	.		.	5444	30690	.	.	33	0.02	2
Taft University System	9	9	0	0	0	1	0	0	100	6	27	9	44	100	100	100		.	785	.	.	.	4	1	100
The Art Institute of California-Argosy University Hollywood	23	0	97	77	0	1	0	0	30	5	14	44	21	0	0	.		.	1906	.	.	.	19	0	0
The Art Institute of California-Argosy University Los Angeles	21	0	94	74	0	1	0	0	27	2	5	39	6	0	0	.		.	1808	.	.	.	21	0	0
The Art Institute of California-Argosy University Orange County	22	0	97	69	0	1	0	0	35	7	2	37	15	0	0	.		.	1761	.	.	.	19	0	0
The Art Institute of California-Argosy University Sacramento	15	0	94	78	0	1	0	0	38	4	5	26	27	0	0	.		.	1185	.	.	.	19	0	0
The Art Institute of California-Argosy University San Diego	22	0	93	70	0	1	0	0	47	1	1	33	2	0	0	.		.	1869	.	.	.	24	0	0
The Art Institute of California-Argosy University San Francisco	22	0	95	71	0	1	0	0	31	6	4	30	12	0	0	0		.	1317	.	.	.	15	0	0
The California	8	1	62	22	1	0	0	0	18	8	2	16	58	0	0	.		75	1045	.	1062	86	14	0.13	13

Institution																								
Maritime Academy																								
The Master's College and Seminary	28	0	97	26	0	0	0	1	17	9	4	10	62	5	6	0	61	1499	.	1077	79	11	0	0
The National Hispanic University	14	5	85	67	0	1	0	0	45	1	2	34	13	21	17	28	.	813	51804	.	.	8	0.36	36
Thomas Aquinas College	1	0	83	39	0	0	0	1	2	1	0	15	73	0	0	.	79	366	.	1259	84	11	0	0
Touro University Worldwide	12	11	75	75	0	0	0	0	34	1	7	3	41	71	35	100	88	363	.	.	.	3	0.92	92
Trident University International	24	24	52	45	0	1	0	0	91	2	11	9	17	100	100	100	.	7093	70299	.	.	18	1	100
United States University	13	10	100	100	0	1	0	0	93	2	4	30	6	51	67	23	.	282	.	.	.	7	0.77	77
University of California-Berkeley	272	5	62	24	1	0	0	0	6	30	2	12	31	0	0	0	18	36198	66816	1361	91	17	0.02	2
University of California-Davis	270	0	75	37	1	0	0	0	6	31	2	16	34	0	0	0	45	33307	23409	1208	93	17	0	0
University of California-Irvine	227	1	72	47	1	0	0	0	4	39	2	19	21	0	0	2	42	28895	.	1143	95	19	0	0
University of California-Los Angeles	305	1	64	32	1	0	0	0	5	28	3	16	32	0	0	2	22	40795	39339	1289	91	16	0	0
University of California-Merced	45	0	93	64	1	0	0	0	3	24	6	42	17	0	0	0	76	6195	.	1007	94	20	0	0
University of California-Riverside	161	0	86	55	1	0	0	0	5	33	5	33	17	0	0	0	62	21207	61236	1064	96	19	0	0
University of California-San Diego	189	0	64	32	1	0	0	0	6	35	1	14	27	0	0	0	38	29517	26487	1226	93	19	0	0
University of California-Santa Barbara	168	0	66	36	1	0	0	0	2	16	2	23	41	0	0	0	44	22225	.	1218	93	17	0	0
University of California-Santa Cruz	122	0	79	43	1	0	0	0	4	19	2	29	38	0	0	0	60	17203	35640	1129	92	18	0	0
University of La Verne	82	4	96	47	0	0	0	0	45	5	6	40	25	6	6	7	39	8796	.	1008	91	17	0.05	5
University of Phoenix-Bay Area Campus	.	.	.	.	0	1	0	0	84	7	14	16	17	0	0	0	.	1655	28746	.	.	15	.	.
University of Phoenix-Central Valley Campus	.	.	.	.	0	1	0	0	81	2	9	30	19	0	0	0	.	2725	26757	.	.	20	.	.
University of Phoenix-	.	.	.	.	0	1	0	0	81	6	14	16	23	0	0	0	.	3421	28512	.	.	17	.	.

Institution																							
Sacramento Valley Campus																							
University of Phoenix-San Diego Campus	.	.	.	.	0	1	0	0	81	4	9	26	18	0	0	0	.	6122	31815	.	.	25	.	.
University of Phoenix-Southern California Campus	.	.	.	.	0	1	0	0	81	4	12	27	14	0	0	0	.	9954	29646	.	.	24	.	.
University of Redlands	118	0	95	27	0	0	0	0	22	6	7	27	46	0	0	0	67	5147	45018	1135	71	14	0	0
University of San Diego	85	2	81	19	0	0	0	1	5	7	3	17	54	1	0	5	49	8321	.	1230	73	15	0.02	2
University of San Francisco	101	5	72	27	0	0	0	1	8	18	4	17	34	3	0	7	61	10112	.	1138	75	15	0.05	5
University of Southern California	459	54	65	18	0	0	0	0	4	19	5	12	34	10	0	18	20	41368	43263	1377	79	9	0.12	12
University of the Pacific	86	0	90	37	0	0	0	0	6	32	3	15	36	0	0	0	73	6421	87039	1199	89	14	0	0
University of the West	11	0	78	50	0	0	0	0	11	16	1	15	9	0	0	0	.	328	.	.	.	8	0	0
Vanguard University of Southern California	36	3	99	43	0	0	0	1	25	5	4	33	48	6	7	0	70	2415	.	995	82	15	0.08	8
Ventura College	73	1	73	47	1	0	1	0	30	5	3	55	32	7	7	.	.	12908	.	.	.	33	0.01	1
Victor Valley College	55	0	86	68	1	0	1	0	37	3	12	47	33	10	10	.	.	11504	.	.	.	26	0	0
West Coast University-Los Angeles	8	0	63	25	0	1	0	0	53	37	3	20	32	0	0	0	54	1435	84897	.	.	22	0	0
West Coast University-Ontario	1	0	78	22	0	1	0	0	55	35	4	10	30	0	0	.	49	1103	75582	.	.	20	0	0
West Coast University-Orange County	2	0	55	18	0	1	0	0	54	44	3	15	26	0	0	.	53	1528	72522	.	.	21	0	0
West Hills College-Coalinga	34	8	85	70	1	0	1	0	31	5	7	58	22	42	42	.	.	3055	.	.	.	27	0.24	24
West Hills College-Lemoore	33	6	86	63	1	0	1	0	35	6	6	53	27	22	22	.	.	4102	.	.	.	32	0.18	18
West Los Angeles College	74	17	76	57	1	0	1	0	49	5	31	41	13	22	22	.	.	10767	.	.	.	31	0.23	23
West Valley College	82	13	44	26	1	0	1	0	36	17	3	23	47	14	14	.	.	9636	.	.	.	24	0.16	16
Westmont College	29	0	93	18	0	0	0	0	1	6	1	13	66	0	0	0	70	1321	.	1199	79	12	0	0
Westwood College-Anaheim	22	0	99	87	0	1	0	0	38	3	2	19	18	0	0	.	.	772	43965	.	.	18	0	0
Westwood College-Inland Empire	24	0	99	87	0	1	0	0	40	2	5	24	13	0	0	.	.	979	41850	.	.	22	0	0
Westwood	32	27	98	77	0	1	0	0	70	2	16	22	26	68	68	60	.	2167	41310	.	.	15	0.84	84

College-Los Angeles																								
Westwood College-South Bay	21	0	100	90	0	1	0	0	54	4	20	19	8	0	0	.	.	571	39717	.	.	22	0	0
Whittier College	31	0	94	33	0	0	0	0	2	10	4	38	38	0	0	0	63	2339	.	1053	85	13	0	0
William Jessup University	29	0	100	37	0	0	0	1	26	3	5	15	71	1	1	0	69	1095	53892	1026	91	13	0	0
Woodbury University	23	0	76	45	0	0	0	0	26	9	4	27	39	0	0	0	56	1607	.	975	82	10	0	0
Woodland Community College	28	0	82	63	1	0	1	0	34	9	3	46	30	8	8	.	.	2641	.	.	.	23	0	0
World Mission University	9	5	50	50	0	0	0	1	95	58	0	0	0	38	40	36	80	261	.	.	.	7	0.56	56
Yeshiva Ohr Elchonon Chabad West Coast Talmudical Seminary	1	0	98	78	0	0	0	0	0	0	0	0	92	0	0	.	100	131	.	.	.	19	0	0
Yuba College	66	0	86	68	1	0	1	0	38	11	4	28	44	12	12	.	.	6874	.	.	.	27	0	0